

Carbon
Market
Institute

EVOLVING MARKETS, EMERGING SOLUTIONS

CMI Westpac
Carbon Market Report
2025

Acknowledgements

Acknowledgement of Country

The Carbon Market Institute (CMI) acknowledges the diversity of Australia's First Nations peoples as the Traditional Custodians of the lands and waterways across Australia. We pay our respects to Elders, past and present.

Other Acknowledgements

CMI is a member-based institute accelerating the transition towards a negative emissions, nature positive world. We champion best practice in carbon markets and climate policy, with around 150 members including primary producers, carbon project developers, Indigenous organisations, legal, technology and advisory services, insurers, banks, investors, corporate entities and emission intensive industries.

The 2025 CMI-Westpac Carbon Market Report, 'Evolving markets, emerging solutions' forms part of the CMI's ongoing research initiative. This report is the second in the annual series that examines how Australia's carbon market is evolving, with the latest insights from a range of experts, including decarbonisation researchers, nature specialists, corporate lawyers, carbon market participants, financial market specialists, technology specialists, and decarbonisation advisors.

CMI could not have delivered the report without its 2025 Carbon Market Report sponsor and contributor, Westpac Institutional Bank. We also extend special gratitude to this year's member authors from Anthesis, Gilbert + Tobin, Indigenous Carbon Industry Network, Norton Rose Fulbright, Reputex, South Pole, and WollemAI. Thank you for your contribution and sharing of expertise in this publication.



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Introduction

JOHN CONNOR
CARBON MARKET INSTITUTE

In 2024 many of the necessary pieces were assembled that can assist a rapid scale-up of domestic and global carbon markets. This may not be well appreciated by many, but carbon markets are poised to support accelerated investment in decarbonisation and other climate solutions by themselves.

“ **In 2025 it will be critical to maintain reform momentum to ensure these ‘engine rooms’ are fully developed to also support not only the bipartisan goal of net zero emission by 2050, but credible 2030 and 2035 emission reduction targets.** ”

Australian, UNFCCC and voluntary markets have new rules, reformed Australian and new international integrity champions. There are emerging disclosure frameworks and standards to underpin market growth and transparency. There are also, as this report details, new refinements and tools emerging to ensure more accurate monitoring and reporting.

This in turn equips carbon market participants to direct much larger amounts of finance to the crucial tasks of avoiding or removing greenhouse gas emissions, restoring biodiversity,

and spreading much-needed economic and social benefits to communities.

Scaling up this finance is essential, as many governments, organisations, investors, businesses and communities have acknowledged.

For example, the importance of carbon credits is recognised by many Australian landowners, stewards, and custodians, including Australia’s Indigenous communities, for whom the revenue these credits provide untied funding for self-determined investments.

Similarly, at the international level, the world’s most climate vulnerable countries – who have grouped together in an alliance known as the Climate Vulnerable Forum - V20 have scaling carbon markets as number two in their 10 ‘super levers’ that can help direct finance to their efforts to fight climate change.

New international cooperation rules finalised under the Paris Agreement mean that carbon markets can be fully integrated into country diplomatic, trade and foreign aid agendas. Australia has significant, perhaps more immediate, export potential for its deep carbon market expertise than carbon credits. International credit trading into the Safeguard Mechanism won’t be considered until the scheduled 2026 review. However, it would be a failure of imagination, economics and diplomacy to miss the opportunity to share Australia’s pragmatic, technological and administration skills built up over the more than a decade of involvement in compliance and voluntary markets.

Carbon markets are also at the forefront of Australia’s efforts to fight one of our most crucial environmental battles – conserving and repairing our natural environment.

It is carbon markets that have served as the role model or guardrails for the emerging biodiversity protection and nature repair and accounting marketplace as well as its governance.

It is important to have some humility in what markets can provide. As this report highlights both carbon and nature markets need to be seen as significant tools, not solutions, to decarbonisation and biodiversity challenges. They must complement and enhance other regulatory and public funding initiatives.

In Australia, new rules that have major ramifications for the ACCU Scheme include the Safeguard Mechanism reforms. These have placed ACCU Scheme abatement at the heart of decision-making for those large emitters unable at this stage to achieve compliance solely through industrial decarbonisation efforts.

While industrial decarbonisation must be the priority, large emitters cannot simply wait around for a full suite of in-house investments to become technically feasible and commercially viable.

By using Australian carbon credits, they can ensure Safeguard compliance and, importantly, lower the overall costs of their decarbonisation efforts particularly in the early years of the reformed Safeguard Mechanism.

As technologies mature and become more commercially viable, the Safeguard Mechanism can be strengthened further to accelerate industrial decarbonisation. We look forward to further improvements to the Safeguard when it is reviewed in 2026, to broaden and deepen its coverage and ensure it drives the right investment signals.

The Safeguard Mechanism cannot be an excuse for inaction at sub-national levels. Australian carbon credits are playing an important facilitating role for ambitious new state government rules as part of the suite of enforcement tools available.

Environment Protection Agencies in NSW, South Australia and Victoria have or are working on greenhouse gas requirements for smaller emitting facilities, and we look forward to seeing how these agencies make use of the ACCU scheme in developing their approaches. Many states and cities continue to use carbon credits to support their own decarbonisation and climate targets.



Integrity and transparency must always be top priorities, and it is pleasing to see continual improvement on this front.

The federal government last December introduced new ACCU scheme transparency measures. And, importantly, it has reiterated its commitment to ensuring that ACCU project proponents obtain the upfront consent of Native Title holders before registering new projects.

A report last year by the Australian National Audit Office has provided further reassurance that the ACCU Scheme is robust, building on similar findings by the Chubb ACCU review, and the Climate Change Authority.

The new tools now at our disposal that are helping us to scale-up high-integrity carbon markets include new satellite and remote sensing tools, machine learning and new data analysis capabilities, which are transforming our ability to precisely understand and track changes in landscapes.

Meanwhile, market participants are engaging in the task of developing additional ACCU Scheme methods that will all have to pass the test of building scale and participation whilst meeting integrity standards.

The ACCU Scheme has been around for a long time, in various forms. But it must not be taken for granted. Robust new methods for earning credits must be finalised without delay, or we risk a disruptive shortfall in investment and credit generation that could make it much harder for Australia to decarbonise at the pace that is needed, and much more expensive.

We also need clear guidance from government on how key market settings are likely to evolve over the medium term, to assist investors and project developers as they plan major new projects. There are growing calls for a carbon market strategy that can help reinforce decarbonisation investment signals in all the policy tools in play as well as support international engagement.

Australia’s carbon market has already delivered hundreds of million tonnes of greenhouse gas abatement. If we keep focus in 2025, it can deliver much, much more.

I will close with thanking the contributors, and especially our project partner Westpac for supporting this second of our annual series which provides much needed though leadership in the carbon market space.

OUR CONTRIBUTORS

This annual series presents expert carbon market insights from CMI members – decarbonisation analysts, nature specialists, lawyers, financial market specialists, technology specialists, and decarbonisation advisors. As they did in last year’s inaugural report, these diverse specialists examine how Australia’s carbon market is evolving from various perspectives, offering insights, answers, and some provocations.

Project partner **Westpac** highlights four key areas for attention to overcome emissions reduction challenges as identified by their customers: clearer strategic direction in policy and regulation, investment in fixed asset infrastructure for low emissions projects, research and development, and cross-industry and value chain collaboration.

WollemAI explains how satellite imagery, remote sensing, and advanced machine learning models have revolutionised how we monitor and manage environmental systems.

WollemAI explains how these advances offer transformative benefits. It also reiterates a call for a Trusted Climate and Nature Data Plan to uplift Australia’s data capabilities, and support investor confidence in the net zero and nature positive transformation.

RepuTex notes the value of the ACCU traded market grew to a record high of \$1.1 billion in the 2024 calendar year, up 31% on the previous year.

It also brings home an important point about when much of Australia’s industrial decarbonisation is likely to occur. It notes that the three years from FY31 to FY33 are likely to generate more industrial sector abatement than the sector will deliver in the entire seven years from FY24 to FY30.

In addition, RepuTex cautions that the ACCU market could be vulnerable to supply shortages, although not in the very short term.

Law firm **Gilbert + Tobin** provides advice on how to avoid both greenwashing and green hushing. Gilbert + Tobin explain that there are now a robust set of codes that can be adopted by those wanting to make credible claims about their climate action, including their use of carbon credits.

These codes ensure that those taking voluntary climate action can do so, while also protecting the legitimate interests of consumers and the public, the law firm says.

South Pole emphasises that there can be no net zero without CO₂ removal, because removal is the only way to neutralise residual emissions.

South Pole calls for support for a diverse portfolio of CO₂ removal techniques, ranging from landscape-based removal to nascent methods such as direct air carbon capture and storage.

It says Australia has a unique opportunity to lead on CO₂ removal, not only in traditional landscape-based removal activities, but also in the commercialisation and deployment of emerging CO₂ removal approaches.

Norton Rose Fulbright describes how last year’s finalisation of Paris Agreement rules on markets has created major new opportunities for countries, carbon credit project developers, and investors in the Asia Pacific.

China, India, Indonesia and Malaysia could all be powerhouse suppliers of nature-based emissions reductions, and a carbon price of USD\$5.80 per credit could bring 114 million hectares of forest within carbon projects in Southeast Asia alone.

The Indigenous Carbon Industry Network (ICIN) points out that there are almost 40 Indigenous owned and operated carbon projects in Australia, and nearly all of them have been operating successfully for a decade.

Last year, these projects were issued with their 10 millionth credit, and each year these projects earn carbon credits that are worth about \$60 million.

ICIN highlight that Indigenous people currently hold either a legal right or an ‘eligible interest’ over 60% of Australia’s land which means Indigenous groups are not just stakeholders- they are key decision-makers under free prior and informed consent rules that are to be tightened.

Consultancy **Anthesis** says the rise of nature markets and the recognition of the economic significance of nature impacts and dependencies is likely to trigger an asset repricing event that will ultimately affect many sectors.

Anthesis gives the example of BlackRock, the world’s largest asset manager, which has said that nature is no longer an externality that is not considered in investment decision-making, “it is capital”.



KEY POINTS

In 2024, Westpac's conversations with 150 high-emitting customers, including those covered by the reformed Safeguard Mechanism, revealed a range of emissions reduction challenges.

Four key areas for attention to overcome these challenges are: clearer strategic direction in policy and regulation, investment in fixed asset infrastructure for low emissions projects, research and development, and cross-industry and value chain collaboration.

Banks can support entities navigating climate transition through financial products that source ACCUs and provide funding in the form of asset finance, project finance or inventory finance.

The role of banks in supporting compliance under the Safeguard Mechanism

WESTPAC INSTITUTIONAL BANK

This chapter provides insights on practical approaches to meeting the reformed Safeguard Mechanism compliance obligations through reducing operational emissions or surrendering carbon credits. Banks can play a key supporting role here, in addition to facilitating the net zero transition through the provision of carbon market products, asset finance, project finance and inventory financing.

Overview

The Safeguard Mechanism is a key national policy aimed at addressing greenhouse gas emissions from the country's largest industrial facilities. Introduced in 2016, and reformed in 2023, the Mechanism sets legislated emission limits, known as baselines, on facilities with more than 100,000 tonnes of carbon dioxide equivalent (tCO₂-e) per year in direct, or scope 1, emissions. Under the reforms which commenced on 1 July 2023, covered facility baselines will decline 4.9% each year to 2030. Some trade exposed facilities will have a lower decline rate. The primary goal of these reforms is to drive the decarbonisation of industry and help Australia achieve its emission reduction target of 43% below 2005 levels by 2030, and net zero by 2050¹.

The Safeguard Mechanism applies to a range of sectors, including mining, oil and gas production, manufacturing, transport, and waste facilities¹. Facilities in these sectors face a diverse range of challenges and opportunities for decarbonisation.

Meeting Safeguard Mechanism obligations

Companies that own facilities in scope of the Safeguard Mechanism have various options to meet their obligations including:

1. Reducing operational emissions: Reducing overall energy demand by implementing energy efficiency initiatives and / or by sourcing low emissions energy, such as renewable energy.
2. Surrendering carbon credits: Using Australian Carbon Credit Units (ACCUs / emission offset instrument) or Safeguard Mechanism Credits (SMCs / emission allowance instrument)
3. Adopting flexible compliance options: Multi-year monitoring period to manage emissions over a longer timeframe or baseline adjustments to account for significant changes in facility production or operations

These are three options the Safeguard Mechanism design provides companies to meet their obligations. However, the optimal approach for each company is one that considers individual needs based on corporate strategy, operational requirements and

financial position. For example, a company may have limited space to retrofit real estate assets, which requires right sized technology with sufficient capacity or existing fixed assets may have inefficient technology but retain a useful operating life that doesn't align with the company's decarbonisation trajectories.

Consideration also needs to be given to enabling or inhibiting factors, which can be beyond a company's control. For example, a company may seek to decarbonise electricity supply through signing Power Purchasing Agreements (PPAs) from renewables projects, however there is a limited current and forecast of supply. An accelerated pipeline of projects is dependent on investment, streamlined approvals and sufficient grid capacity.

What Westpac has heard: Corporate climate transition challenges

During 2024, Westpac had conversations with more than 150 of our large emitting customers, to assess and provide feedback on the maturity of their climate transition plans. We also sought to understand the challenges of the energy transition and in meeting Safeguard Mechanism obligations.

We heard from our customers that there are a range of challenges in achieving interim operational emissions reduction targets (Scope 1 & 2), noting four key themes that need attention:



Clearer strategic direction in policy and regulation, particularly energy supply and affordability to underpin the energy transition;



Significant investment in fixed asset infrastructure, particularly to increase low emissions projects, the availability of Power Purchasing Agreements (PPAs) and expand capacity in the electricity grid;



Research and development to accelerate breakthrough technologies; and



Cross-industry and value chain collaboration.

Westpac offers a range of financial products that can help address these customer challenges. Banks can also support Safeguard-covered entities meet their obligations through a combination of funding initiatives to reduce their operational emissions profile and carbon market products to offset residual exposure.

Banks supporting Safeguard compliance: Financial products available

Sourcing ACCUs

In hard to abate sectors, where reducing scope 1 emissions via new capex is not economically or technically feasible, banks operate as an intermediary between the client and the secondary market for ACCUs to manage price and delivery risk. This can be as simple as trading spot units for immediate surrender, allowing Safeguard-covered entities to meet compliance requirements whilst also procuring units that complement their climate transition plans. Alternatively, where buyers require a deeper connection with the

source of the ACCUs, and evidence supporting co-benefits and project integrity, there can be opportunities to participate in a stream of units direct from a pool of primary project originators facilitated by the bank.

More sophisticated entities that already have a stock of ACCUs or have embedded carbon hedging into their treasury management policies may choose to employ over the counter derivatives in the form of forwards, options and sale and repurchase agreements with a bank. The active trading of spot and derivative contracts can serve as another tool for Safeguard-covered entities to optimise their procurement and management of carbon assets on their balance sheet to ensure the most efficient path to compliance. Given their familiarity with local credit conditions, underlying funding rates and access to balance sheet, banks are well placed to partner with Safeguard-covered entities to deploy capital efficiently via derivatives.

Asset finance for operational upgrades

Asset finance is a typical form of funding banks may consider providing in support of equipment that reduces operational emissions by providing the necessary capital to invest. An example may be the use of finance leasing to fund new equipment to replace less efficient more emission intensive equipment used in the manufacturing process. This may also be structured as a green loan focused on improving energy efficiency or a sustainability linked loan which is structured in a way to incentivise borrowers to invest more heavily in emission reduction activities, such as pricing benefits.

Project finance for ACCU origination

Companies may also develop their own projects which generate ACCUs which they can use to manage their own emissions profile or sell in the carbon market. Project finance may be a form of funding that banks can offer to support these types of developments through construction phase to completion.

Inventory finance to monetise unused carbon credits

Banks can help monetise carbon credit inventory on balance sheet through a product like a borrowing base facility. Safeguard-covered entities may often hold carbon credits for a period, either because they are surplus to immediate requirements or have been pre-purchased for future use. Proceeds from a borrowing base facility can then be used to reinvest into activities aimed at reducing scope 1 emissions, whilst still retaining ownership of the carbon credits on balance sheet for future use.

By leveraging financial products tailored to sustainability goals, companies can tailor a holistic approach to meeting Safeguard Mechanism obligations that has the flexibility to adapt to changing circumstances on the journey towards a net zero future.

Westpac Institutional Bank is one of Australasia's leading specialist financial services organisations that delivers a broad range of solutions to Commercial, Corporate, Institutional and Public Sector customers with connections to Australia, New Zealand, Asia, Europe and US markets. Our relationship management and product teams are focused on providing strategic connections to provide clients with financial solutions, including to help meet Safeguard Mechanism obligations.

¹ Department of Climate Change, Energy, the Environment and Water (DCCEEW), "Safeguard Mechanism Overview," 2024.



By leveraging financial products tailored to sustainability goals, companies can tailor a holistic approach to meeting Safeguard Mechanism obligations that has the flexibility to adapt to changing circumstances on the journey towards a net zero future.

KEY POINTS

RepuTex analysis indicates that the value of the ACCU traded market grew to a record high of \$1.1 billion in the 2024 calendar year, up 31% on the previous year, led by growth in secondary spot trading.

Companies are likely to bank and transfer Safeguard Mechanism Credits (SMCs) internally to balance liabilities across group facilities, limiting their availability on the secondary market.

In their long-term planning, businesses should consider scenarios for Safeguard Mechanism baselines to decline by between 3% a year and 7% per year.

The ACCU market remains vulnerable to supply-side constraints, particularly around the timing of the new Integrated Farm and Land Management (IFLM) method.

RepuTex modelling indicates that industrial decarbonisation will accelerate after 2030, as investments in larger capital projects begin to result in reported emission reductions. Within the industrial sector, RepuTex expects the three years from FY31 to FY33 to generate more abatement than in the entire seven years from FY24 to FY30.

Re-shaping the Australian carbon market – key supply, demand & price drivers for 2025

WILLIAM DUFFUS, DR. ANTON FIRTH,
HENRY WYLD, BRET HARPER,
MICHAEL EISELDER & DR. CAMERON RITCHIE
REPULATEX

As we near the first compliance deadline under the reformed Safeguard Mechanism, we asked our analysts to pick the top supply, demand and price drivers likely to impact the Australian carbon market in 2025.

1. As baselines decline again in FY25, expect a further uptick in ACCU traded volumes – and market value

The implementation of declining emissions baselines under the Safeguard Mechanism saw a notable uptick in traded volumes in the Australian Carbon Credit Unit (ACCU) market in the 2024 calendar year, with total traded volumes reported under our daily survey panel process growing to 35 million last year (spot and derivatives), a 49% increase from 2023.

This saw the value of the ACCU traded market grow to a record high of \$1.1 billion in the 2024 calendar year¹, a 31% increase year-on-year, led by growth in secondary spot trading.

We expect this dynamic to continue in 2025, with market activity to increase as aggregate emissions baselines decline a further 4.9% on average, in effect, doubling the accountability for covered entities to an average of 9.8% of their base year emissions.

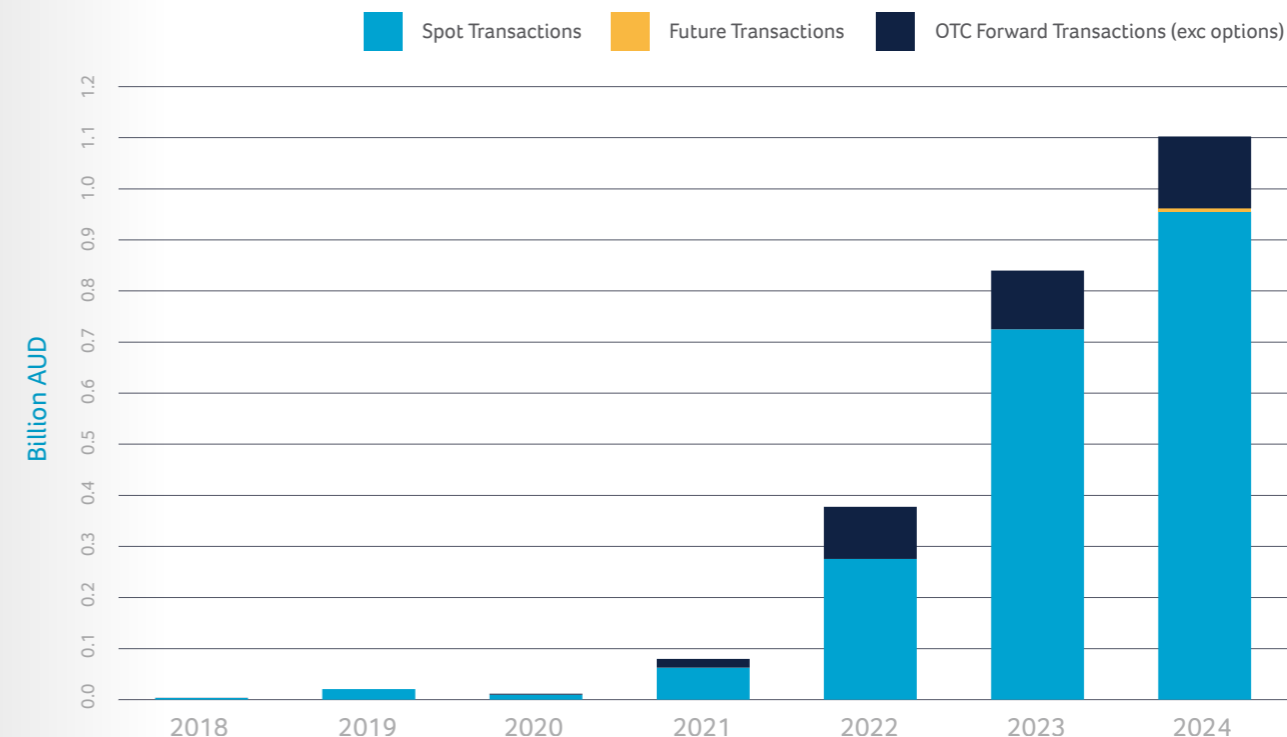
In particular, we expect increased compliance demand to drive continued growth in the ACCU derivatives market in 2025—e.g., futures and options—which grew two-and-a-half times larger in 2024, as traders and compliance entities used a more diverse set of financial instruments to hedge their forward exposure.

Growth in the derivatives market should be supported by improved liquidity for exchange traded futures, which got off to a slow start in 2024 as participants favoured more bespoke over-the-counter (OTC) contracts. Moreover, with a wider set of derivative instruments available to the market, and improved liquidity, the effectiveness of the forward market as a risk management tool will continue to improve.

— William Duffus, Senior Pricing Analyst

¹ RepuTex Energy, Annual Review of the Australian Carbon Market (2024), February 2025. Accessible via reputex.com/research-insights/annual-review-australian-carbon-market-value-surges-to-record-a-1-1b-in-2024-behind-growth-in-accu-derivatives/

Chart 1: Estimated value of annual ACCU transactions (AUD)



Source: RepuTex EnergyIQ platform, 2025



2. New coal mine methane reform to re-shape the market

Following the Climate Change Authority review of the National Greenhouse and Energy Reporting Scheme (NGER) Act, in 2024 the federal government implemented amendments to the NGER scheme to address the under-reporting of Australia's coal mine methane. The new amendments require open-cut coal mines covered by the Safeguard Mechanism to transition from outdated state-based emissions factors (Method 1) to site-specific sampling and analysis (Method 2) when reporting fugitive methane emissions.

By relying on site-specific sampling, the change is intended to better capture facility methane emissions, with logic suggesting that total reported emissions will increase as under-reported emissions are better accounted for.

Despite this, our facility-level modelling of open cut coal mines indicates that reported emissions will initially decrease under the new amendments.

This is because Method 2 site-specific fugitive intensities have historically been much lower (on average) than Method 1 industry average assessments, due to weaknesses in site-specific sampling protocols (for example, only three samples are required per coal domain, insufficient to capture methane variability, particularly in modern deeper mines.¹)

Recognising these weaknesses, the Climate Change Authority called for an “urgent” review of Method 2 protocols in its 2023 Review of the NGER Legislation.

This recommendation has been adopted by the Commonwealth, with Chief Scientist Dr Cathy Foley leading an expert panel to advise government² on whether new atmospheric measurement approaches could further enhance Australia's estimation of

fugitive methane emissions. The panel will run until June 2027.

As things stand today, however, we forecast lower reported emissions from the coal mining sector over the medium term, shown in Chart 2, resulting in lower demand for ACCUs, along with materially higher issuance of Safeguard Mechanism Credits (SMCs).³

Given facilities may bank SMCs (discussed in the next section), our modelling indicates that this dynamic will further lower cancellation demand for ACCUs to 2030, unless re-baselining accounts for the change in the new emission reporting methodology.

New coal mine methane reporting requirements therefore materially re-shape our forecast for ACCU market balance over the decade, delaying the timeline for the market to begin to tighten, and lowering our ACCU price expectations. This will impact the market more immediately as traders react to forecast changes in market fundamentals, and lower compliance demand.

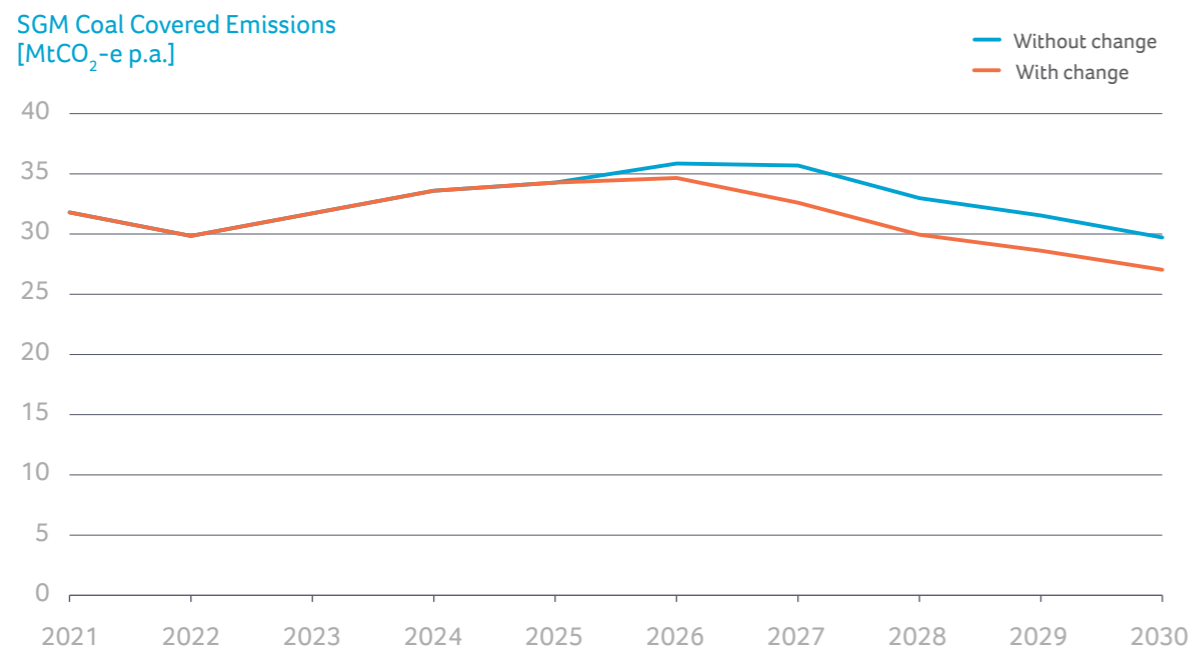
However, future changes to tighten methane emissions reporting could quickly reverse these impacts.

While the new reporting framework will (counterintuitively) initially lower emissions, our modelling indicates that future improvements to the accuracy of coal fugitive reporting could eventually see a significant influx of covered emissions into the Safeguard Mechanism, as reporting begins to line up with estimates based on remote sensing instruments.

As a result, coal mine methane reforms are a notable demand-side watch for market participants, potentially representing a key support for price development.

— Dr. Anton Firth, Director, Research (Industry Decarbonisation)

Chart 4: Safeguard Mechanism coal covered emissions



Source: RepuTex Energy, 2025

¹ IN FOCUS: Coal mine methane emissions reform – Implications for the Safeguard Mechanism market. Available via <https://www.reputex.com/research-insights/briefing-coal-mine-methane-emissions-reform-implications-for-the-safeguard-mechanism-market/>

² DCCEEW: <https://www.dcceew.gov.au/climate-change/expert-panel-atmospheric-measurement-fugitive-methane-emissions-au>

³ RepuTex Energy: More SMCs – New coal mine methane reporting to re-shape Australia's carbon market, available via <https://www.reputex.com/research-insights/article-more-smcs-lower-prices-new-coal-mine-methane-reporting-to-re-shape-australias-carbon-market/>

3. SMCs will play an increasingly more important role

Despite increases in SMC creation flagged above, the February timing of issuances—just ahead of first compliance at the end of March—means that we expect few to be available to the secondary market in time for compliance with the FY24 reporting year.

We do, however, expect SMCs to be widely used to settle FY24 liabilities, especially for consolidated tax groups with facilities both above - and below - their respective baselines.

Looking ahead, these intra-group transfers, along with the banking of SMCs and other factors (such as the favourable tax treatment of SMCs),¹ will considerably limit their availability on the secondary market, while lowering cancellation demand for ACCUs.

Where SMC trading does take place, we expect prices to generally fall in line with more liquid Generic ACCUs, reflecting the low cost of creation of most units and their more limited usage (for covered entities only). As such, trading is expected to reflect the buyer's view of SMCs, priced at a slight discount to ACCUs, whereas most

— Henry Wyld, Director, Markets

¹ RepuTex Energy: The reformed Safeguard Mechanism and income tax implications for Safeguard Mechanism Credits (SMCs), <https://www.reputex.com/research-insights/article-the-reformed-safeguard-mechanism-and-income-tax-implications-for-safeguard-mechanism-credits-smcs/>

SMCs are assumed to be retained in line with the seller's view that SMCs are internally valued higher than ACCUs.

SMCs will appear on the register with specific attributes denoted, such as the financial year, and the name of the facility to which they are issued. As liquidity grows in future years, this could support some stratification in prices, particularly where onsite decarbonisation actions are considered to have greater/less additionality and permanence.

We also expect investors to directly support key decarbonisation technologies and activities by potentially using SMCs as collateral.

But buyer beware.

Like all emissions units, perceptions about the varying costs of creation, additionality and permanence will be key to how SMCs are priced. While some attributes will be visible, understanding the underlying source of abatement, and the perceived qualities of SMCs, will be important to the way buyers value a credit.





4. 2025 federal election, and Australia's new 2035 emissions target

Australia's updated Nationally Determined Contribution (NDC) is now expected to be published mid-year, after the election, including a 2035 emissions target. Initial advice from the Climate Change Authority in April 2024 suggested a 2035 emissions target in the range of 65% to 75% below 2005 levels would be appropriate, with the Authority now finalising its advice to the government.

At a minimum, we expect emissions baselines to continue to decline at -4.9% p.a. (on average) under a returned ALP government. However, our modelling indicates that a post-2030 baseline decline rate could become more ambitious if Australia's national target is greater than around 67% on 2005 levels by 2035.

Comparably, national ambition is more likely to slow under a Coalition-led government, with potential for emissions baselines to revert to the default decline rate, amongst other potential

changes to the operation of the scheme.¹

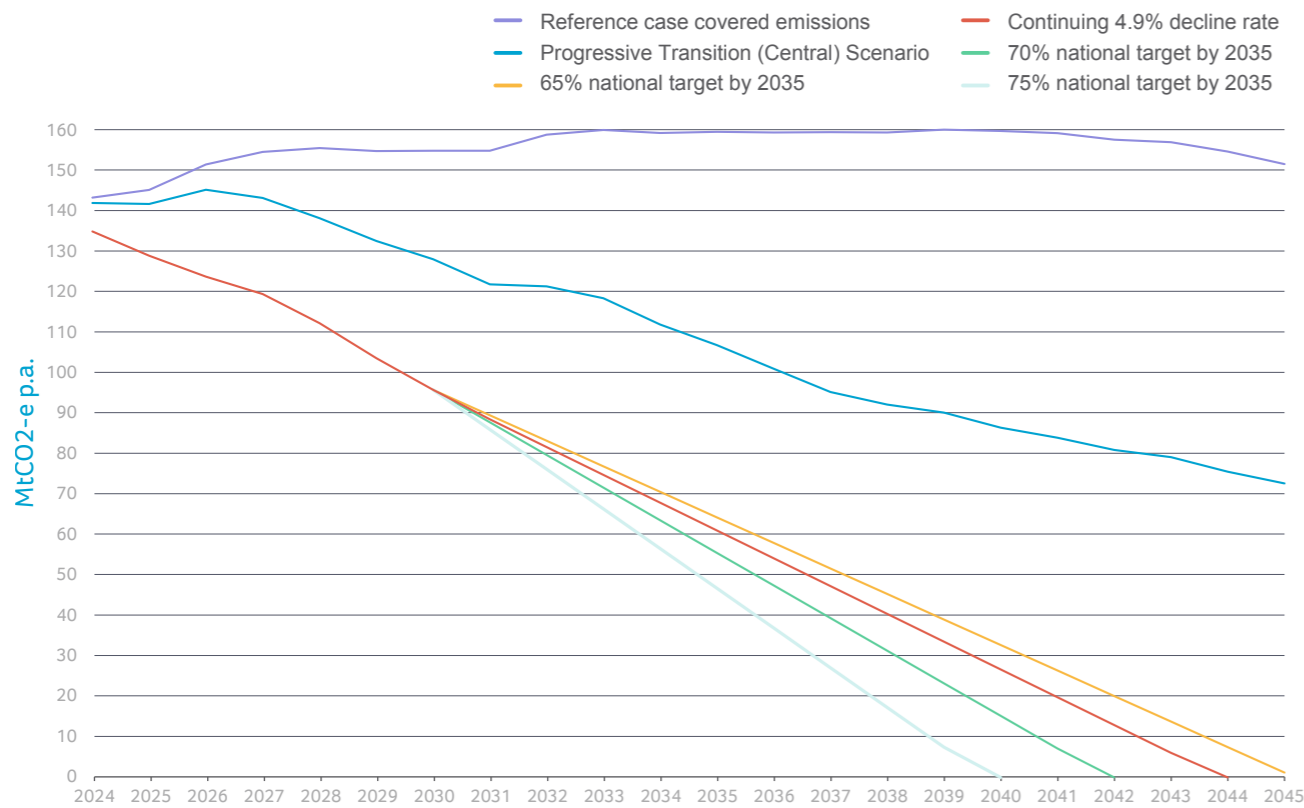
Long-term planning should therefore consider a 3-7% p.a. range for baseline declines in scenario analysis (not accounting for the creation of an emissions reserve to act as a safety net for higher-than-expected production growth at new and existing facilities, or any higher-than-expected use of TEBA).

Decline rates for 2030-31 to 2034-35 will be set by 1 July 2027, however, we expect Australia's new 2035 target to more immediately impact the ACCU market as announced policy ambition shifts sentiment and adjusts forecast market balance.

All eyes are therefore on the 2025 federal election, to be held in May, with the setting of Australia's next NDC to materially impact short-and long-term market dynamics.

— Bret Harper, Head of Research

Chart 2: Emissions reduction trajectory scenarios for a range of 2035 targets



Source: RepuTex EnergyIQ platform

¹ Election 2025: Regulatory risks for the Safeguard Mechanism at the 2025 Australian federal election, available via: <https://www.reputex.com/research-insights/election-2025-what-are-the-regulatory-risks-for-the-safeguard-mechanism-at-the-federal-election/>

5. Supply side headwinds for ACCUs

The Australian carbon market is fundamentally well supplied in the next few years. However, the timing and availability of ACCU issuances remains a key sensitivity, with the market increasingly vulnerable to supply side constraints.

Administrative constraints have impacted the market over the past 12-months, with issuance processing delays following the Chubb Review creating increasing tightness, and contributing to volatility in prices as compliance buyers come to market.

Other supply-side constraints are also of increasing concern, including:

- the closure of the Avoided Deforestation method;
- upward sloping baselines for Landfill Gas projects (which will reduce crediting);
- older projects concluding;
- uncertainty around CAC exit arrangements, including delays to CAC exits, the perceived underperformance of large CACs, the 20% Fixed CAC delivery requirement, and whether CAC exit arrangements will remain in place over the long-term;
- tighter gateway audits / issuance delays for existing Human-Induced Regeneration (HIR) projects; and
- delays to the roll out of the Integrated Farm and Land Management (IFLM) method.

Two of these issues have the potential to reshape the supply side landscape. These are the perceived underperformance of large CACs, and the timing of the new IFLM method.

As we noted in April 2024, ¹deliveries of ACCUs to the government under the terms of fixed carbon abatement contracts (CACs) have slowed significantly in recent years, with large volumes of ACCU deliveries being rescheduled. This is allowed under the Clean Energy Regulator's CAC contract management approach, if a seller can provide a plausible plan to deliver this milestone in the future.

Given the Regulator will not reduce the total volume contracted or terminate contracts if a seller has access to other ACCUs (including from projects that are not part of a contract), these rescheduled deliveries have raised concern that some projects bound by CACs may be underperforming, potentially creating supply risks if developers are forced to their contractual obligations under the government's 20% Fixed CAC delivery requirement by diverting ACCUs otherwise bound for the secondary market.

Delays to issuance, however, do not necessarily mean CACs are underperforming.

While some projects are slow to produce ACCUs – and must therefore renegotiate their delivery milestones with the Regulator if they have fixed CAC agreements in place – many factors can cause issuance delays. These include:

- Delays due to the extended negotiation of native title (and other) consent.
- Delays attributed to the Chubb Review, particularly for HIR.
- Tightening of gateway audit checks for HIR.
- Delays to issuance due to methodology changes (particularly for soil carbon).

Potential CAC underperformance is therefore due to individual project constraints, which are generally captured within market

projections for total issuance. As a result, while some stakeholders are nervous, we do not expect the fundamental impacts of any CAC underperformance to have a significant bearing market balance.

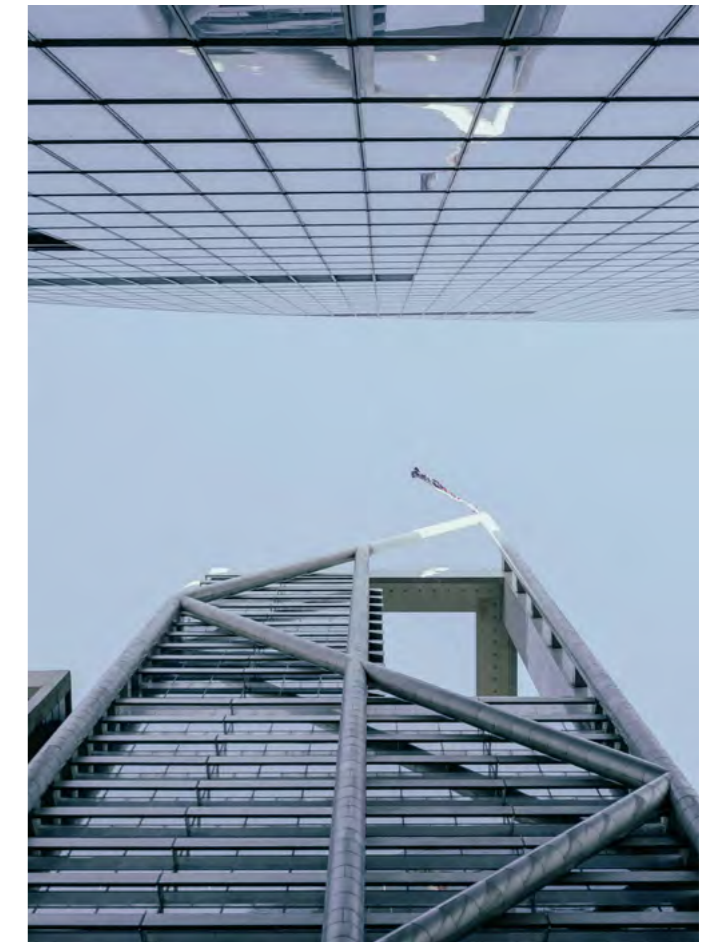
In parallel, the slow pace of development for the new IFLM method continues to undermine Australia's new project pipeline, with increased scrutiny of the new method creating a challenge for DCCEEW and the Emissions Reduction Assurance Committee (ERAC), as they seek to balance the need to expedite the process with the need for methods to be of high integrity.

Within our modelling, we assume the IFLM method is finalised in FY26, with new project registrations from CY ² 2026 and the first significant issuance growing from around FY28. Should the IFLM method availability be delayed further to FY27, however, we anticipate ACCU issuance in FY28 would be lower, yet by less than half a million.

Potential IFLM delays are therefore built into our current modelling, with the impact of the exact timing of method approval being mitigated by the multi-year timeframe of ACCU issuance. However, any material changes to the method, including any significant narrowing of the method scope, would require larger adjustments by the supply side of the market to try and compensate for lower supply.

While the Australian carbon market is fundamentally well supplied, the timing and availability of new issuance remains a key sensitivity to market balance.

— Michael Eisfelder, Senior Analyst



¹ RepuTex Energy: CAC Exit Changes – The impact of the minimum delivery rule on ACCU supply, [reputex.com/research-insights/https-www-reputex-com-research-insights-briefing-cac-exit-changes-the-impact-of-the-minimum-delivery-rule-on-accu-supply-and-balance/](https://www.reputex.com/research-insights/https-www-reputex-com-research-insights-briefing-cac-exit-changes-the-impact-of-the-minimum-delivery-rule-on-accu-supply-and-balance/),
² Compliance year

6. The cost and scale of onsite industry decarbonisation remains key to longer term market dynamics

Meeting the longer-term challenge of net zero emissions, and Australia's interim emissions targets, will require a range of low emissions technological solutions to be developed and adopted by industry at an unprecedented pace and scale.

Applying our risk-adjusted abatement cost curves, which consider barriers to uptake, we currently estimate up to 60% of Safeguard Mechanism-covered industrial emissions are abatable. Using existing technology around 50% of actions have an existing cost of under \$100/t, whereas only 24% of activities have a present cost under that of recent ACCU prices.

Lowest cost abatement opportunities are generally those with fuel savings over incumbent technology, while higher-cost abatement actions often centre around post-combustion carbon capture and storage (CCS) and immature medium- and high-temperature fuel switching, with cost decreases as technologies mature.

The industrial sectors with a large proportion of abatable emissions often face high average costs, whereas industries with low average decarbonisation costs are generally those based around efficiency, and have a low proportion of the overall emission reduction potential. In both cases, however, access to financing is key to overcoming capital cost barriers.

Our modelling indicates that decarbonisation uptake will accelerate after 2030, driven by the Safeguard Mechanism, as investments in larger capital projects begin to result in reported emission reductions.

For example, we currently expect the three-year period from FY31 to FY33 to generate more abatement than the entire seven years from FY24 to FY30.

There is a long tail of sectors with few abatement opportunities under \$100/t, highlighting the expected reliance on carbon credits over the medium term. During this time, there is also a risk of under-investment in onsite emission reductions due to uncertainty

about the Safeguard Mechanism's cost containment measure (CCM), and broader political and regulatory uncertainty.

While it is widely known that covered businesses can use the CCM to cancel ACCUs on their behalf at \$75/t each, increasing by 2% p.a., it is not always appreciated that the CCM is intended only as a near-term guardrail against market failures, and is not anticipated to be sufficient to cover much more than a year's worth of compliance demand. Therefore, it would be short-sighted to treat the CCM as a cap on emissions accountability in perpetuity.

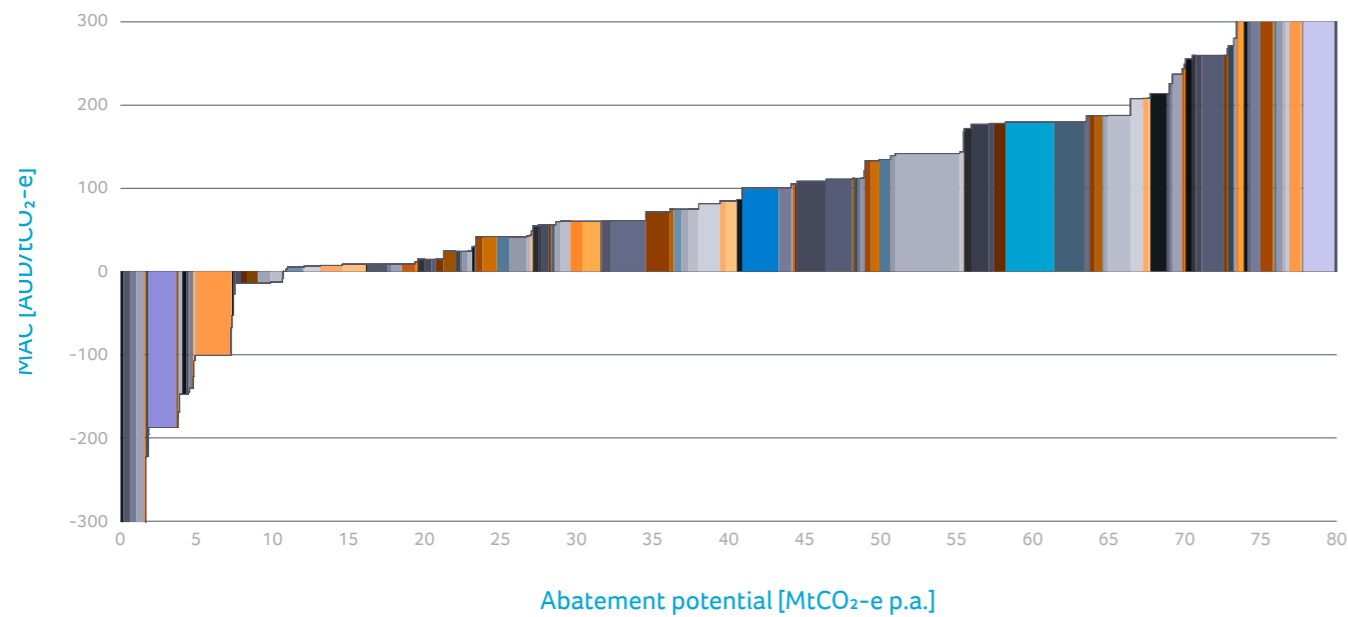
Furthermore, the CCM's sufficiency will be reviewed within the 2026-27 review, with potential for a different approach to be adopted, such as a floating-price trigger, as is typical in larger, more developed carbon markets.

It should also be remembered that the key policy objective of the Safeguard Mechanism reforms is to support the uptake of decarbonisation actions. The pace and scale of activities to decarbonise Australian industry is therefore a key watch for market participants and policymakers alike, with regular review required to ensure that scheme settings, and market fundamentals, support that goal.

— Dr. Cameron Ritchie, Analyst (Industry Decarbonisation)

RepuTex is the leading provider of price information, analysis and advisory services for the Australian carbon and electricity commodity markets. With over 1,500+ users of our EnergyIQ platform from over 150 companies, making up over 80% of traded activity in the Australian carbon market, our market data and forecasts are used each day to help Australia's largest companies, traders, investors, and project developers to form their view of prices, and set long-term expectations.

Chart 3: Using available technology ~60% of Safeguard emissions are abatable, at a wide range of costs.



Note: Depicted curve is a filtered sub-set of our full MAC curve. Contact RepuTex for full access.

Source: RepuTex Energy, 2025

KEY POINTS

At COP29 in Baku in November 2024, a framework for international cooperation through markets was established with the finalisation of rules for the international trading of emissions reductions under Articles 6.2 and 6.4 of the Paris Agreement.

The APAC region provides an excellent opportunity for Article 6 engagement, drawing on past experience in project development and trading under the Kyoto Protocol's Clean Development Mechanism and in voluntary carbon markets. Factors that will determine which countries are best suited to hosting host Article 6 projects include carbon abatement potential, degree of carbon markets knowledge, regulatory infrastructure, openness to international markets, and the level of domestic policy certainty.

China, India, Indonesia and Malaysia could all be carbon credit supply powerhouses, whilst small island states may be limited by their size and scale. Australia, China and Malaysia are regional leaders in establishing the regulatory frameworks for carbon capture projects, and Australia also has significant potential to export its carbon markets knowledge and expertise.

To engage in the Article 6 mechanisms, private sector entities should identify demand for the emission reduction units and consider suitable project types and locations in the chosen host country. Key to engagement with Article 6 will be obtaining authorisation from the host country and monitoring the approval of methodologies under the Article 6.4 mechanism.

Project developers will need to decide whether to engage with Article 6.2 or 6.4, considering factors such as the urgency of starting a project, the ease of participation in the chosen mechanism and the likely value that will be generated.

Asia Pacific opportunities for emissions trading following operationalisation of the Article 6 Rulebook

ELISA DE WIT, HARRIET SALISBURY
& CHARLIE BEVIS
NORTON ROSE FULBRIGHT

Introduction

2024 was an important year for carbon markets. Nine years after the Paris Agreement was adopted, the rules underpinning the use of carbon markets were finally resolved at COP29 in Baku. In particular, the rules required to facilitate the oversight of carbon credit generation by the United Nations Framework Convention on Climate Change (UNFCCC) were finalised, and clarity was provided about requirements for country-to-country trading of emissions reductions.

“ The use of carbon markets to assist countries meet their emissions reduction targets was enshrined in Article 6 of the Paris Agreement and, to date, more than 100 countries have indicated an intention to achieve their targets or provide verified emissions reductions to other countries through market mechanisms.¹ The private sector will also have a key role to play in the implementation of Article 6.

In this chapter, we provide a summary of the Article 6 market mechanisms and consider how the private sector can engage with these mechanisms, with a particular focus on opportunities in the Asia Pacific region (APAC).

¹ This amount has been determined on the basis of each country which is: (a) a party to an Article 6.2 bilateral agreement; and/or (b) is the host country for a CDM project which has submitted a PCN to transfer to PACM, according to the UN Environment Programme page "Article 6 Pipeline". Accessed online here: [Article 6 Pipeline - UNEP-CCC](#)



Operationalisation of the Article 6 Rulebook

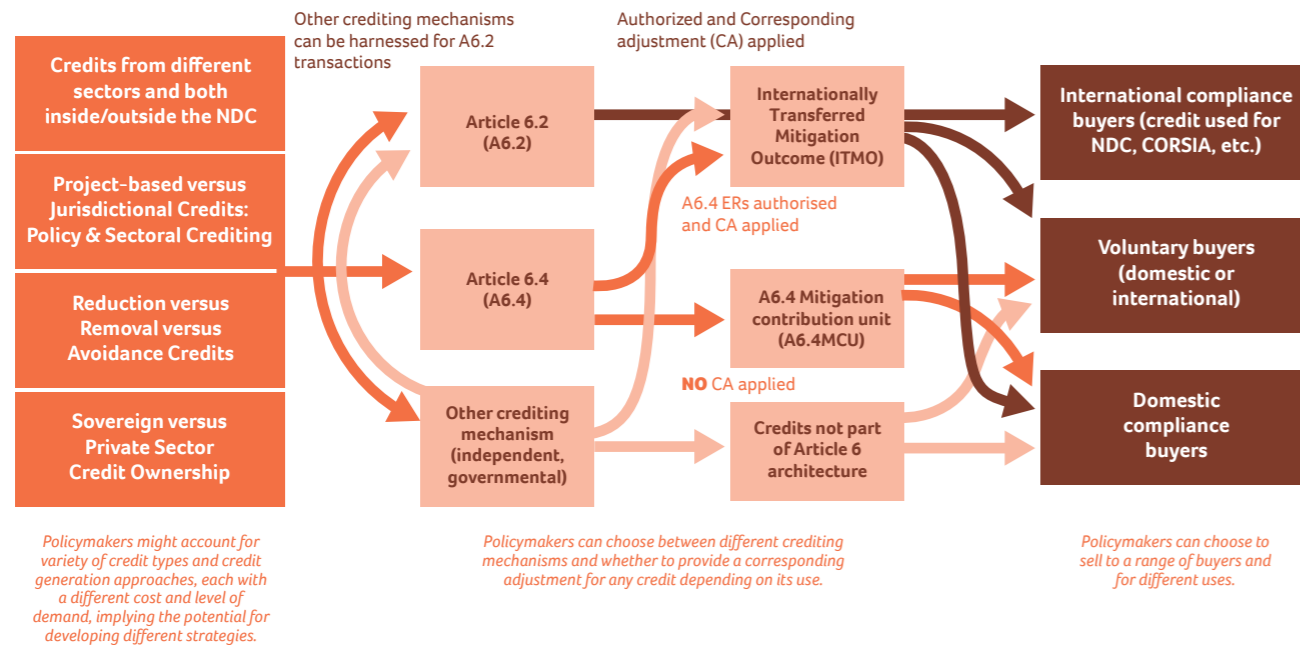
In November 2024, at COP29 in Baku, the Parties to the Paris Agreement finally agreed on the remaining rules required to operationalise Articles 6.2 and 6.4 (the Article 6 Rulebook).

Figure 1: What is Article 6?

What is “Article 6”?

Article 6 of the Paris Agreement allows parties to voluntarily cooperate to achieve their Nationally Determined Contributions (NDCs) through market mechanisms (Article 6.2, Article 6.4) and non-market approaches (Article 6.8).

Figure 2: Operation of the Article 6 market mechanisms.



Source: adapted from AlliedOffsets¹

A brief overview of Articles 6.2 and 6.4 is as follows.

Article 6.2 enables the trade of internationally transferred mitigation outcomes (ITMOs) through agreements between two or more countries. These agreements are known as Cooperative Approaches. Article 6.2 was technically operable before COP29 (based on the rules adopted at COP26 in Glasgow) and the first Cooperative Approach was concluded in early 2024.²

Each ITMO represents one tonne of carbon dioxide equivalent abated. ITMOs can be used by parties to the Paris Agreement to meet NDCs, or they can be used for other international mitigation purposes (OIMPs), such as meeting requirements of the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA) or in the voluntary carbon market (VCM).

A host country is required to authorise the use of the ITMOs and agree to apply a “corresponding adjustment” for the relevant volume of ITMOs transferred, to avoid double-counting. This means the host country must “add on” the equivalent volume of emissions to its national emissions inventory to account for the use of those ITMOs by the purchasing country.

Matters regarding Article 6.2 that were finalised at COP29 included the content of authorisations; when an ITMO will be considered to have been transferred for the first time; when authorisations can be changed; and how the centralised accounting and reporting platform will operate (including how reporting inconsistencies will be identified and corrected).³

Article 6.4, known as the Paris Agreement Crediting Mechanism (PACM), provides for the establishment of a centralised, UN-

operated carbon credit program to replace the Clean Development Mechanism (CDM) established under the Kyoto Protocol.

At COP29, the Parties reached agreement on the operation of the PACM registry (including how it will connect to national registries). They also agreed on the process by which non-authorized units can be authorised post-issuance, and the transfer to PACM of existing projects under the CDM.¹

Credits generated under PACM and authorised to be traded internationally to help other countries to meet their NDCs, or for other international mitigation purposes, are called Article 6.4 Emission Reductions (A6.4ERs). Article 6.4 credits which are not authorised to be traded internationally are called Mitigation Contribution Units (MCUs).

What opportunities exist for Article 6 projects in APAC?

The APAC region provides an excellent opportunity for Article 6 engagement, both on the supply and demand sides.

APAC’s history of carbon market engagement

Even before COP29, there was a healthy interest in carbon trading across APAC. A 2020 study found the region to be home to approximately 80% of all CDM projects² and, as at 31 December 2024, the region was hosting 4,730 projects under the four largest international voluntary carbon standards.³

Regional experience in carbon trading has been developed through initiatives like Japan’s Joint Crediting Mechanism (which has 72 projects registered in 29 countries, mostly in the APAC region),⁴ and pioneering engagement with Article 6.2 from Thailand, Cambodia and Laos.⁵ On the demand side, Singapore has entered Cooperative Approaches with Ghana, Papua New Guinea and others.⁶

Momentum is accelerating and, in January 2025 alone, Vietnam announced its pilot carbon market scheme would commence in June,⁷ Thailand confirmed it would launch its own carbon market,⁸ and the first international trading of the Indonesian Carbon Exchange took place.⁹ It is predicted that carbon markets in just the 10 member countries of ASEAN could abate 1.1 billion tCO₂-e per year by 2050.¹⁰

Where are new opportunities likely to arise?

Likely project host countries in APAC can be identified with reference to some of the following factors:

- Carbon abatement potential**

As many carbon projects use nature-based solutions, physical geography (for example land mass and proportion of forest cover) may influence a country’s carbon abatement potential. On this basis, China, India, Indonesia and Malaysia could all be “natural supply powerhouses”,^{11 12} and it is estimated that a carbon price of USD\$5.80 per credit could bring 114 million hectares of forest within carbon projects in Southeast Asia alone.¹³

In contrast, small island states have expressed concerns about the scale of their projects (and the impact on price per tonne of carbon abated).¹⁴ To illustrate, Malaysia’s Kuamut Rainforest Conservation Project covers an area of over 83,000 hectares, nearly twice the size of the entire nation of Palau.¹⁵

Other APAC countries have suitable formations for carbon removal projects if used alongside carbon capture and storage (CCS) infrastructure. It is estimated that 60% of all CCS abatement will take place in APAC by 2050,¹⁶ with China, Australia and Malaysia so far leading in developing the necessary regulatory frameworks.

A country’s potential to generate A6.4ERs will also depend on the available methods. The Article 6.4 Supervisory Body has so far indicated it plans to prioritise PACM methods involving grid connected renewable electricity, thermal energy, landfill gas, and non-renewable biomass.

- Institutional knowledge**

As the Article 6 mechanisms evolve, more input will be required to assist host country governments. For example, each Cooperative Approach requires a host country to be able to authorise ITMOs, comply with reporting requirements and ensure NDC alignment.¹⁷ This may be problematic for countries which lack carbon market experience.

The Asian Development Bank has flagged the “lack of national strategies, governance, institutional capacity, and carbon market expertise” as a key hurdle to carbon market participation in APAC.¹⁸ Furthermore, as a carbon market strategy must be tailored to each jurisdiction, institutional knowledge cannot simply be transplanted but must be honed domestically. This can be a lengthy and exhausting process, especially when factoring in consultations, the legislative process, and establishing complex systems and infrastructure like registries.¹⁹

1 AlliedOffsets, “Voluntary Carbon Market Insights & FAQs”, available at: alliedoffsets.com/carbon-faqs/article-6/.
2 S&P Global, “Switzerland, Thailand concludes first Article 6.2 deal in landmark move for carbon markets” (8 January 2024). Accessed online: [Switzerland, Thailand conclude first Article 6.2 deal in landmark move for carbon markets](https://www.spglobal.com/emissions/news/2024/01/08/switzerland-thailand-conclude-first-article-6.2-deal-in-landmark-move-for-carbon-markets).
3 Decision CMA.6, “Matters relating to cooperative approaches referred to in Article 6, paragraph 2, of the Paris Agreement”.

1 Decision CMA.6, “Guidance on the mechanism established by Article 6, paragraph 4, of the Paris Agreement”, para 17.
2 Asian Development Bank, “Asia-Pacific Climate Report 2024: Catalyzing Finance and Policy Solutions”, pg XXIV. Accessed online: [Asia-Pacific Climate Report 2024](https://www.adb.org/publications/asia-pacific-climate-report-2024).
3 Berkeley Public Policy: The Goldman School, “Voluntary Registry Offsets Database”. Accessed online: [Voluntary Registry Offsets Database](https://www.voluntaryregistry.org/). The standards are American Carbon Registry (ACR), Climate Action Reserve (CAR), Gold Standard, and Verra (VCS).
4 The Joint Crediting Mechanism, “Overview of the Joint Crediting Mechanism”. Accessed online: <https://jec.jp/jcm/about/>.
5 IETA, “Visualising Article 6 Implementation”. Accessed online: [Visualising Article 6 Implementation](https://www.ieta.org/visualising-article-6-implementation/).
6 Singapore Ministry of Sustainability and the Environment, “Singapore signs Implementation Agreement with Ghana to collaborate on Carbon Credits under Article 6 of the Paris Agreement” (27 May 2024). Accessed online: [Singapore signs Implementation Agreement with Ghana to collaborate on Carbon Credits under Article 6 of the Paris Agreement](https://www.mse.gov.sg/newsroom/2024/05/27/singapore-signs-implementation-agreement-with-ghana-to-collaborate-on-carbon-credits-under-article-6-of-the-paris-agreement); Reuters, “Singapore signs carbon credits deal with Papua New Guinea” (8 December 2023), accessed online: [Singapore signs carbon credits deal with Papua New Guinea](https://www.reuters.com/technology/singapore-signs-carbon-credits-deal-papua-new-guinea-2023-12-08/).
7 Carbon Pulse, “Vietnam decree paves way for carbon market, pilot phase to begin in June” (27 January 2025). Accessed online: [Vietnam decree paves way for carbon market, pilot phase to begin in June](https://www.carbonpulse.com/news/vietnam-decree-paves-way-for-carbon-market-pilot-phase-to-begin-in-june-27-jan-2025/).
8 Bloomberg, “Thailand to Launch New Carbon Credits Market to Boost Trading”. Accessed online: [Thailand to Launch New Carbon Credits Market to Boost Trading](https://www.bloomberg.com/news/articles/2025-01-27/thailand-to-launch-new-carbon-credits-market-to-boost-trading).
9 Antara, “Indonesia officially launches international carbon trading initiative” (20 January 2025). Accessed online: [Indonesia officially launches international carbon trading initiative](https://www.antara.com/en/indonesia-officially-launches-international-carbon-trading-initiative-2025-01-20).
10 Abatable, “The opportunity for carbon markets in ASEAN” (December 2024).
11 Landholm et al., “Unlocking Nature Based Solutions Through Carbon Markets: Global Analysis of Available Supply Potential” (2022). Climate Focus.
12 Eco-Business, “Looking ahead: Voluntary carbon markets in Asia”. Accessed online: [Looking ahead: Voluntary carbon markets in Asia](https://www.eco-business.com/news/looking-ahead-voluntary-carbon-markets-in-asia/).
13 KPMG “Unravelling the Voluntary Carbon Market in Southeast Asia Challenges and Paths Forward” (October 2024).
14 United Nations Climate Change, “Report: Regional Dialogue on Carbon Pricing Pacific” (2024) pg 14. Accessed online: Report: [Regional Dialogue on Carbon Pricing Pacific](https://unfccc.int/system/uploads/2024/09/15/asset_upload_pdf104939_69302.pdf).
15 Kuamut Rainforest Conservation Project “Project Design Document Executive Summary”. Accessed online: [Kuamut-Rainforest-Conservation-Project-PDD-summary-Eng-1.pdf](https://www.kuamut.com/kuamut-rainforest-conservation-project-pdd-summary-eng-1.pdf); WorldData.Info “Palau”. Accessed online: <https://www.worlddata.info/oceania/palau/index.php>.
16 McKinsey & Company, “Unlocking Asia-Pacific’s vast carbon-capture potential” (22 February 2023). Accessed online: [Unlocking Asia-Pacific’s vast carbon-capture potential](https://www.mckinsey.com/industries/sustainable-chemicals/our-insights/unlocking-asia-pacifics-vast-carbon-capture-potential).
17 Host countries do not need to operate their own registry and industrialised countries often permit developing nations access to theirs, as is the case between Palau and Japan.
18 Asian Development Bank, “Asia-Pacific Climate Report 2024: Catalyzing Finance and Policy Solutions”, pg XXIV. Accessed online: [Asia-Pacific Climate Report 2024](https://www.adb.org/publications/asia-pacific-climate-report-2024).
19 Asian Development Bank, “Asia-Pacific Climate Report 2024: Catalyzing Finance and Policy Solutions”, pg 146. Accessed online: [Asia-Pacific Climate Report 2024](https://www.adb.org/publications/asia-pacific-climate-report-2024).

• **Openness to international markets**

Countries must also decide whether to permit the transfer of credits between international voluntary carbon markets and their domestic markets, and, if so, the degree of that permeability. For host countries, this openness may depend on the attainment of their NDCs as a precondition. This would mean credit sales could be restricted to ensure the host country meets its own emissions targets. For example, Fiji's National Carbon Market Strategy Roadmap says that "all interactions with international carbon markets [must] support Fiji's ability to achieve its NDC".¹

It should be recognised that NDC targets may be fully or partially conditional on access to external finance and/or other assistance. As such, openness to participation in carbon trading might also facilitate the achievement of higher emissions reduction commitments than would otherwise occur if no emissions reductions were being exported.

On the purchaser side, 'openness' is shown through a government's willingness to allow voluntary carbon market credits to be used within their domestic initiatives. For example, Singapore allows its businesses to use VCM credits to satisfy up to 5% of their annual carbon tax liability.²

Australia has so far expressed little interest in linking its Australian carbon credit unit (ACCU) Scheme with Article 6 or the VCM. This is despite industry groups (including the CMI³) highlighting that this could enable Australia to raise the ambition of its NDC (if done with safeguards to ensure credit integrity and price stability).

International linkages may prove challenging as they require the linked markets (for example two different emissions trading schemes) to have "high consistency in cap settings, allowance allocation, and [monitoring, reporting and verification] processes".⁴ It is possible that Article 6.4 of the Paris Agreement may reduce these hurdles by standardising processes for generating and verifying A6.4ERS.

• **Regulatory certainty**

Finally, countries with stable policy environments are likely to be the most attractive hosts for Article 6 projects. Policy stability is crucial for producing high-integrity credits, which must align with NDCs. As Mikkel Larsen, former CEO of Climate Impact X said: the success of a credit exporter "depends on whether [they] have clarity around meeting their [NDCs]".⁵

On the converse, prospective project proponents may be deterred from investing in countries if the carbon market regulatory framework is uncertain. For example, the Zimbabwean Government in 2023 suddenly announced it would claim 50% of all revenue of carbon projects within its jurisdiction, before retreating to a 30% "Environmental Levy" three months later.⁶ Sudden interventions like this create investment uncertainty.

1 Fiji Government, "Fiji National Carbon Market Strategy Roadmap", pg 9. Accessed online: [Fiji National Carbon Market Strategy Roadmap](#)
 2 KPMG, "Unravelling the Voluntary Carbon Market in Southeast Asia: Challenges and Paths Forward" (October 2024). Accessed online: [Unravelling the Voluntary Carbon Market in Southeast Asia](#); and Clifford Chance, "Singapore Carbon Initiatives: The Carbon Tax And The Eligibility List" (September 2024). Accessed online: [singapore-carbon-initiatives-the-carbon-tax-and-the-eligibility-list.pdf](#)
 3 CMI, "Harnessing carbon markets to accelerate to Net Zero" (June 2024). Accessed online: [2024.06_FINAL_National-carbon-market-strategy_CMI-policy-brief.pdf](#)
 4 Asian Development Bank, "Asia-Pacific Climate Report 2024: Catalyzing Finance and Policy Solutions", pg 151. Accessed online: [Asia-Pacific Climate Report 2024](#).
 5 Eco-Business, "Looking ahead: Voluntary carbon markets in Asia". Accessed online: [Looking ahead: Voluntary carbon markets in Asia](#)
 6 *Carbon Credits Trading (General) (Amendment) Regulations, 2023 (No. 1)*
 7 IETA, "Visualising Article 6 Implementation". Accessed online: [Visualising Article 6 Implementation - IETA](#)
 8 IETA, "Article 6 in Action: Business Insights & Implementation Trends". Accessed online: [IETA_Resources_Report_A6-Pulse-SurveyV3.pdf](#)
 9 Decision -/CMA.6 Further guidance on the mechanism established by Article 6, paragraph 4, of the Paris Agreement. Accessed online: [Further guidance on the mechanism established by Article 6, paragraph 4, of the Paris Agreement | UNFCCC](#)
 10 As of 14 March 2025. UNFCCC Climate Change, "CDM activities requested for transition to the Article 6.4 mechanism". Accessed online here: [CDM: Transition](#)
 11 As of 14 March 2025. UNEP, "Article 6 Pipeline". Accessed online here: [Article 6 Pipeline - UNEP-CCC](#)
 12 As of 14 March 2025. UNFCCC Climate Change, "Transition of CDM activities". Accessed online here: [Transition of CDM activities | UNFCCC](#)
 13 UNFCCC Climate Change, "PoA 10415: Clean Energy Program Supported by Republic of Korea". Accessed online here: [CDM: Clean Energy Program Supported by Republic of Korea](#)

How can private sector entities engage in Article 6?

There will be numerous opportunities for the private sector to engage with Article 6 throughout the APAC region.

Project developers and investors

For those looking to establish, or invest in, Article 6 projects, the following considerations will be relevant:

• **Identify demand**

Demand for ITMOs and A6.4ERs is likely to be strong from a number of key jurisdictions and there has already been a significant amount of activity under Article 6.2.

A total of 63 signed Cooperative Approaches and memoranda of understanding (which often lead to a Cooperative Approach) are in place, and 28 letters of authorisation have been provided.⁷

Early indications are that private sector buyers will be willing to pay more for ITMOs than other kinds of credits.⁸ In addition, the emerging demand under CORSIA is likely to provide good opportunities for those on the supply side.

• **Identify suitable project locations**

For each of the two Article 6 market mechanism (Article 6.2 and Article 6.4), a host country must satisfy various conditions, as shown in Figure 2:

Beyond these requirements, prospective project proponents should consider desirable host countries with reference to the factors discussed above.

• **Developing carbon projects**

In relation to generating Article 6.2 ITMOs, existing VCM projects under Verra's VCS and Gold Standard may apply to produce Article 6-eligible credits. For other VCM standards, it will be necessary to confirm if this is possible, ideally before commencing a project.

In relation to A6.4ERs, existing CDM projects and activity programs have until 31 December 2025 to transfer to the UNFCCC's PACM registry,⁹ subject to obtaining host country and UNFCCC approval. So far, over 1,400 CDM projects and activity programs have requested to transition to PACM.¹⁰ Of these, 33 have received host country approval,¹¹ and two have now been approved by the UNFCCC.¹² One of these is an activity program involving the distribution of cookstoves in Myanmar, which was approved early in 2025.¹³

As of March 2025, new (ie, non-CDM) projects cannot be officially registered because PACM methods are yet to be published. Instead, prospective project proponents can

Figure 2: Prospective host country requirements for Article 6.2 and Article 6.4.

Prospective host country requirements	Article 6.2	Article 6.4
Is a Party to the Paris Agreement	✓	✓
Has a submitted an NDC (for the relevant period)	✓	✓
Has arrangements in place to authorise ITMOS for NDCs	✓	✗
Appointed a Designated National Authority	✓	✓
Indicated to the Supervisory Body how its participation in PACM would contribute to sustainable development	✗	✓
Indicated to the Supervisory Body the PACM activities it would approve, and how these would contribute to achieving its NDC, long-term emissions reductions and the goals of the Paris Agreement	✗	✓

complete a pre-registration process, which involves submitting a "prior consideration notification" to the UNFCCC Secretariat (and so far over 1,000 of these notifications have been submitted).¹

Once applicable PACM methods are available, the prospective project proponents will have one year to submit a project design document.² After this is published on the UNFCCC website, a host country can approve the PACM project.

• **Obtain host country authorisation**

As stated above, authorisations are required for the trade of all ITMOs and A6.4ERs.

For ITMOs, the authorisation is given by the host country government to the project proponent. The process for obtaining an authorisation will vary from country to country. However prospective project proponents may consider using template letters of authorisation, such as those produced by the Multilateral Investment Guarantee Agency,³ and Verra.⁴

For A6.4ERs, the authorisation is provided from the host country government to the Article 6.4 Supervisory Body, and it must specify whether the project's credits are authorised for use to meet NDCs or to meet other international mitigation purposes (such as CORSIA or the VCM). The relevant project proponent will be informed about the authorisation, and it will also be published on the UNFCCC website.

Project proponents will need to decide whether to engage with Article 6.2 or with Article 6.4's centralised UNFCCC PACM process. The decision should take into account factors such as:

- the urgency of credit issuance (as it is not currently possible to generate credits from new PACM projects);
- the ease of credit transfer (the PACM registry may be more efficient than bespoke Cooperative Approaches); and
- the credit value (the UNFCCC's supervision of PACM may result in a perceived higher integrity for A6.4ERs, leading to a corresponding price premium).

1 As of 14 March 2025. Prior consideration notifications are publicly available on the UNFCCC website. Accessed online: [PCN-PA-PoA.xlsx](#)
 2 All types of PDD forms are available on the UNFCCC website.
 3 MIGA "Letter of Authorization For Use of Emissions Reductions Under Article 6.2 of the Paris Agreement for International Mitigation Purposes or Other Purposes" (November 2024). Accessed online: [MIGA Letter of Authorization Template.pdf](#)
 4 Verra, "Article 6 Letter of Authorization Template". Accessed online: [LOA-Template_legal.docx](#)
 5 IETA, "Article 6 Can Generate up to \$1 Trillion a Year of Financial Flows to Achieve Paris Goals, Study Shows" (26 October 2021). Accessed online: [Article 6 Can Generate up to \\$1 Trillion a Year of Financial Flows to Achieve Paris Goals, Study Shows - IETA](#)

Carbon-related services providers

Beyond project developers, the operationalisation of the Article 6 Rulebook will necessitate carbon-related services throughout APAC, especially in countries with little prior experience in this sector. This provides a rich opportunity for Australia's carbon experts (including consultants, auditors, and advisers) to export their knowledge of how these markets operate and their understanding of a high integrity, well-regulated program like the ACCU Scheme.

Opportunities may exist to export the learnings from development of methods under the ACCU Scheme, as well as the services necessary to support the development and implementation of carbon projects on the ground, particularly in the nature-based arena.

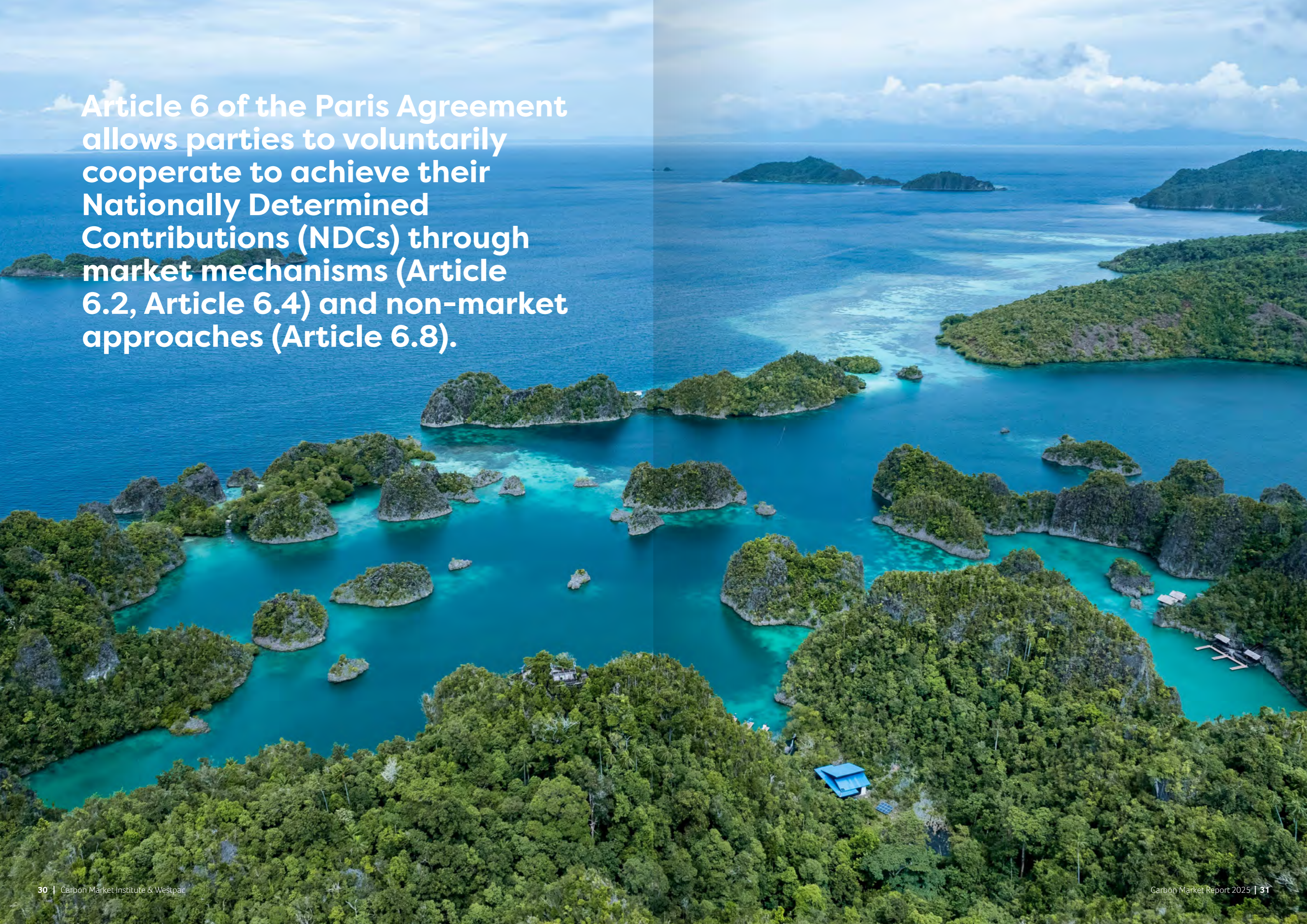
Conclusion

With the operationalisation of the Article 6 mechanisms and the diverse range of opportunities to commence new carbon projects in APAC, we can expect an acceleration in the execution of Article 6.2 cooperative approaches and a strong uptake in PACM engagement (pending additional steps being completed, including the publication of the PACM methods and the establishment of the registry).

Ultimately, the trading of emissions reductions will be essential to achieving the goals of the Paris Agreement, and it is predicted that the Article 6 market could be valued at \$1 trillion a year by 2050.⁵ The private sector will be a key player in mobilising the funding and implementing the projects necessary to achieve the emissions reductions and supporting governments to meet their NDCs.

Norton Rose Fulbright is a global firm, providing the world's preeminent corporations and financial institutions with a full business law service. We have been at the forefront of the development and implementation of domestic and international carbon markets for almost 20 years. Carbon markets are rapidly evolving, and our team is well placed to advise you on the latest developments and emerging opportunities.

Article 6 of the Paris Agreement allows parties to voluntarily cooperate to achieve their Nationally Determined Contributions (NDCs) through market mechanisms (Article 6.2, Article 6.4) and non-market approaches (Article 6.8).



KEY POINTS

There are almost 40 Indigenous-owned and operated carbon projects across Northern Australia.

In 2024, these projects were issued their 10 millionth credit.

Each year, these projects earn carbon credits worth about \$60 million.

Savanna fire management projects cover 175,000 square kilometres of land.

Indigenous people hold either a legal right or an 'eligible interest' over 60% of Australia's land which means Indigenous groups are not just stakeholders- they are key decision-makers.

State of the Indigenous Carbon Industry

INDIGENOUS CARBON INDUSTRY NETWORK

Industry snapshot

10 million Indigenous Carbon Credit issued and much more

There are currently 39 Indigenous-owned and operated carbon projects across Australia—34 savanna fire management projects and five human-induced regeneration (HIR) projects. These projects cover 24 million hectares and annually generate 1.2 million tonnes of carbon emissions reductions, and are valued at an estimated \$60 million.

In 2024, Indigenous-owned carbon projects were issued their 10 millionth credit and 17 of the 34 Indigenous-owned savanna fire management carbon projects reached ten-year operating milestones.

There are now 46 savanna fire management projects that have been operating for ten years or more covering 175,000 square kilometres of landscape across the north of Australia, with Indigenous projects accounting for 70% of this area.¹

These long-term savanna fire management projects have successfully reduced total project areas burnt by 10%.² This means that across these 46 projects there is now on average 17,500 square kilometres of Country that is unburnt each year that would otherwise have been burnt.

These projects have significantly changed fire management practices, reducing late-season fires by 70% in favour of early-season cool burns, and are transforming how Country is cared for, minimising habitat disturbance, and drastically cutting smoke and greenhouse gas emissions. HIR projects involve active land management practices and initiatives that results in carbon stored in project areas.

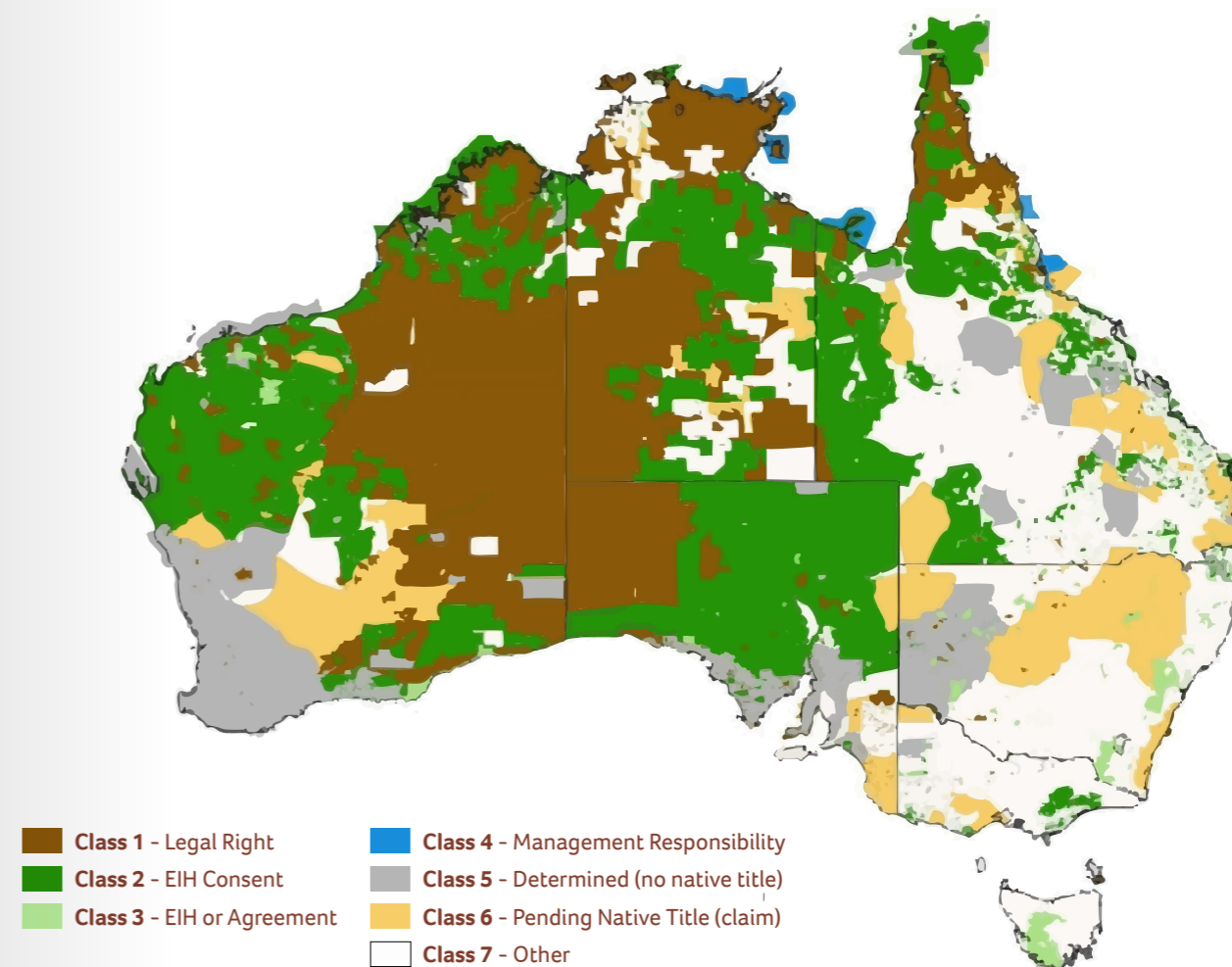
Indigenous carbon credits provide a vital source of independent revenue for Indigenous organisations. This funding supports the future of carbon projects, sustains fire management programs, and creates meaningful employment for Indigenous people on Country. It also enables investment in cultural education and community development, strengthening both communities and landscapes for generations to come.

"Fire burning has been a practice we have been doing for many years. Burning helps us show our skills that have been handed down for our generations. It helps us keep our culture strong, keep our Country clean, and helps feed our plants and our wildlife. It helps merge the old techniques and modern techniques. It helps two different worlds come together as one," Bobby Bowie, Ranger, Batavia Traditional Owners Aboriginal Corporation.

¹ https://www.icin.org.au/latest_industry_snapshot

² This study compared NAFI data between 2000–2009 with project years 2015–2024.

Figure 1 Indigenous rights and interests (carbon and nature repair) (ICIN 2024) (data current to Oct 2023)



Indigenous rights and interests to land, sea, and carbon

Indigenous groups are key decision-makers in the carbon industry

While much of the existing Indigenous-led carbon activity is in the savanna region, over 75% of the land where Indigenous people hold legal rights and interests to carbon lies elsewhere.

Analysis conducted by the Indigenous Carbon Indigenous Industry Network (ICIN) underscores the scale of Indigenous rights to carbon, revealing that Indigenous people hold either a legal right or an 'eligible interest'¹ over 60% of Australia's land and 66% of its coastline. A further 11% of land is currently under native title claim, awaiting a decision to be made by the Federal Court as to the area's native title status (refer to figure 1.1).

Under ACCU Scheme legislation,² Indigenous people may hold both legal rights and eligible interests in land that a project is to run on. Importantly, if native title holders have an eligible interest, a carbon project cannot receive ACCUs unless native title holders provide consent. This has major implications for the future of carbon projects in Australia. It confirms that Indigenous people are placed to lead the carbon industry by managing country the right way using knowledge and practices that have been used for tens of thousands of years.

As new carbon methods emerge and the Nature Repair Market gains traction, it is critical that those working across the carbon market value chain understand that Indigenous groups are not just stakeholders—they are key decision-makers.

More detail can be found in ICIN's 'Mapping the Opportunities for Indigenous Carbon in Australia' report.³

¹ An eligible interest-holder is any person or organisation that has a legal interest in the land a project proposed under the Australian Carbon Credit Unit (ACCU) Scheme (<https://cer.gov.au/schemes/australian-carbon-credit-unit-scheme>) will run on. A list of eligible interest-holders is specified in sections 43 to 45A of the Carbon Credits (Carbon Farming Initiative) Act 2011 (CFI Act; <http://www.legislation.gov.au/C2011A00101>).

² ACCU Scheme legislation being the Carbon Credits (Carbon Farming Initiative) Act 2011 (CFI Act; <http://www.legislation.gov.au/C2011A00101>) and the Carbon Credits (Carbon Farming Initiative Rule 2015 (CFI Rule); <http://www.comlaw.gov.au/Series/F2015L00156>).

³ Report referenced in: ICIN 2024, 'Top priorities for a thriving Indigenous carbon industry' in: https://carbonmarketinstitute.org/app/uploads/2024/04/2024_CMI-Westpac_Carbon-Market-Report.pdf, pp. 34-35.

Government reiterates importance of the right to Free, Prior, and Informed Consent (FPIC) for carbon projects

Long-term funding for ICIN for implementation of FPIC still lacking

It is well-established that best practice in the carbon industry requires project proponents to enact the principles of FPIC when running a project on land subject to native title. This means that developers must take time to understand who can speak for Country and that these groups have the time, information, and resources to make decisions. Experience of our members to date demonstrates that projects succeed when they are formed based on the principles of FPIC.

In his address at the 7th North Australia Savanna Fire Forum (the Forum) in February 2025, the Assistant Minister for Climate Change, the Hon Josh Wilson MP reaffirmed the government's commitment to FPIC, noting "the Government rightly recognises that the early and genuine engagement of Indigenous people is crucial to the success of projects on Country. I will announce today that we will remove the ability to conditionally register carbon projects on native title lands, producing a requirement to demonstrate native title holder consent prior to project registration... I really want to pay credit to ICIN for running a dedicated First Nations consultation to help inform this change to legislation."

In response, ICIN Co-Chair and MC Cissy Gore-Birch OAM welcomed the Minister's comments but also pointed to a critical gap—the lack of long-term funding for ICIN and other Indigenous organisations. She emphasised "For free prior and informed

consent to become commonplace, governments must provide funding to Indigenous groups and organisations to engage in consultation and agreement making."

ICIN will continue to work with the industry to support FPIC to be taken up as common practice, including through ICIN resources such as the Indigenous Carbon Projects Guide.¹

Wetland Feral Ungulate Management Carbon Method and Savanna Fire Management (Northern Arid Zone Method Extension) Carbon Method

ICIN and its members are continuing to innovate and develop new carbon methods through Indigenous-led research. In 2024, ICIN, ICIN members, and research partners worked through the Commonwealth Government's proponent-led method development Expression of Interest process to achieve prioritisation of several methods by the Emissions Reduction Assurance Committee (ERAC). These include:

Wetland feral ungulate management carbon method

Funded by the National Environmental Science Program (NESP) and led by the North Australian Indigenous Land and Sea Management Alliance (NAILSMA) and the University of Queensland, together with ICIN's Feral Ungulate Working Group, this research measures and models the emission reduction benefits of protecting wetland soils and vegetation by removing feral ungulates such as buffalo and pigs from these areas, either through exclusion fences, or culling.

Savanna fire management (northern arid zone method extension) carbon method

Led by the Indigenous Desert Alliance (IDA) this work builds on the collaborative research undertaken since 2020 with the aim of extending of the savanna fire management method to the frequently burnt areas in the northern Tanami of the Northern Territory and southern Kimberley region in Western Australia. Once completed, this extension of the method would increase the potential area for Indigenous savanna projects by up to 750,000 km².

Supporting blue carbon opportunities for Indigenous people

ICIN members and Indigenous communities are exploring the opportunities and challenges related to blue carbon—carbon stored in mangroves, seagrass, coastal floodplains, and supra-tidal forest areas, referred to as 'Sea Country'.

In 2024, ICIN released a report 'Blue Carbon: Opportunities for Indigenous People' that included the first comprehensive national map of Indigenous legal interests by type, inclusive of the coastline and marine zone.¹

Despite Indigenous people holding legal rights or eligible interests along 66% of Australia's coastline, Indigenous participation in the blue carbon market remains limited. This is largely because the current ACCU Scheme blue carbon method² is largely inapplicable to lands where there are legally recognised Indigenous rights and interests and has prohibitive project startup costs.

ICIN's research highlighted that a healthy blue carbon ecosystem does not necessarily translate into carbon project opportunities.

Similar to land-based carbon projects, blue carbon projects require specific activities to restore or protect a degraded or threatened ecosystem, meaning there must be some level of damage or risk to the environment. This limitation has prevented many Indigenous groups from engaging in blue carbon projects, despite their stewardship of these ecosystems for millennia.

To address this gap and support Indigenous leadership and inclusion in blue carbon, ICIN has been advocating for additional blue carbon methods that are more applicable to the Indigenous estate, such as the Wetland Feral Ungulate Management method described above. ICIN continues to work with its members and partners on this area, with a final report on blue carbon opportunities to be released in 2025.

ICIN is a not-for-profit Aboriginal-owned charitable organisation that supports the Indigenous carbon industry in Australia. It is an industry peak body representing 23 Indigenous land and sea management organisations that are creating economic, social, and environmental benefits through their carbon projects. The network also has six associate members, who are Indigenous organisations that have an interest in the carbon industry.

Image below: Gurruwiling, also known as the Arafura Swamp, is the most expansive freshwater ecosystem in Arnhem Land and the largest paperbark swamp found in Australia. ICIN Director and Yolgnu Traditional Owner Neville Gulay Gulay describes the physical damage caused to the sensitive soil of wetlands by buffalo, which are a feral ungulate species now widespread across Arnhem Land. "We are at Warrdeke Swamp land, and we can see damages from buffalo around here, and some out further there, there are big erosions," says Neville.



OUR MEMBERS



ASSOCIATE MEMBERS



¹ ICIN, 'Indigenous Carbon Projects Guide', available at: https://www.icin.org.au/indigenous_carbon_projects_guide_downloads.

¹ More information on the report at: ICIN, 'Blue Carbon in Australia, understanding the opportunity for Indigenous People', available at: https://www.icin.org.au/new_spatial_analysis_reveals_indigenous_peoples_hold_legal_consent_rights_to_carbon_along_66_of_australia_s_coastline.
² More information on the method at: Clean Energy Regulator (CER), 'Tidal restoration of blue carbon ecosystems method', available at: <https://cer.gov.au/schemes/australian-carbon-credit-unit-scheme/accu-scheme-methods/tidal-restoration-blue-carbon-ecosystems-method>.

KEY POINTS

Carbon dioxide removal (CDR) is essential for achieving net zero, but scaling it requires overcoming significant barriers such as limited adoption incentives, high costs, technological readiness, and infrastructure needs.

A diverse CDR approach is needed. Conventional CDR methods, such as planting trees, help but are limited; novel CDR methods, like Direct Air Capture and Carbon Storage (DACCS), offer long-term storage but require substantial investment. A mix of approaches ensures scalability and impact.

Australia has a unique opportunity to lead in CDR. With vast land, industrial expertise, and low-cost renewable energy, Australia can lead in conventional and novel CDR, serving both domestic and global needs.

Unlocking CDR adoption requires robust mechanisms such as fiscal incentives, compliance market integration, and public procurement programs to foster demand and derisk supply.

Unlocking carbon dioxide removal in Australia: Challenges and opportunities

OSCAR RUEDA, DANIEL SACHADONIG,
DANIELLE DE LA COUR
SOUTH POLE

Introduction

“Australia is already experiencing severe climate impacts from global warming, including devastating bushfires, catastrophic floods, and widespread coral bleaching in the Great Barrier Reef”

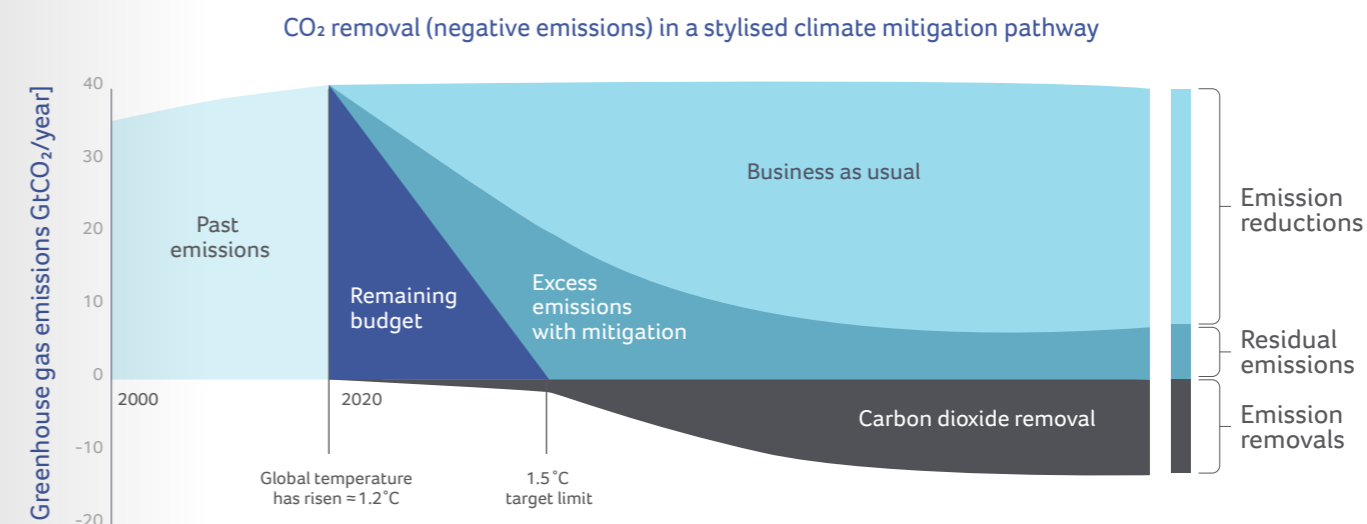
While reducing emissions is critical to avoid additional global warming, the greenhouse gases already in the atmosphere, especially long-lived gases like carbon dioxide (CO₂), would continue driving warming even if emissions cease today.

Removing CO₂ from the atmosphere can help safely stabilise the climate by counteracting hard-to-abate emissions, alongside rapid and sustained emission reductions which must remain the priority. Globally, limiting warming to 1.5°C will likely require carbon dioxide removal (CDR) on the scale of 4-10 metric gigatonnes¹ per year in 2050, equivalent to around 10% to 20% of today's CO₂ emissions.²

Uniquely, CDR can also help reverse global warming. By removing legacy CO₂ from the atmosphere, CDR can bring temperatures back down in cases of temporary overshoot. In this chapter, we analyse how Australia can help incentivise responsible removals adoption to pave the way towards a net zero future.

¹ All volume measurements referenced in this document are in metric units.
² IPCC, 2022: Climate Change 2022: Mitigation of Climate Change. Contribution of Working Group III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change. <https://www.ipcc.ch/report/ar6/wg3/>

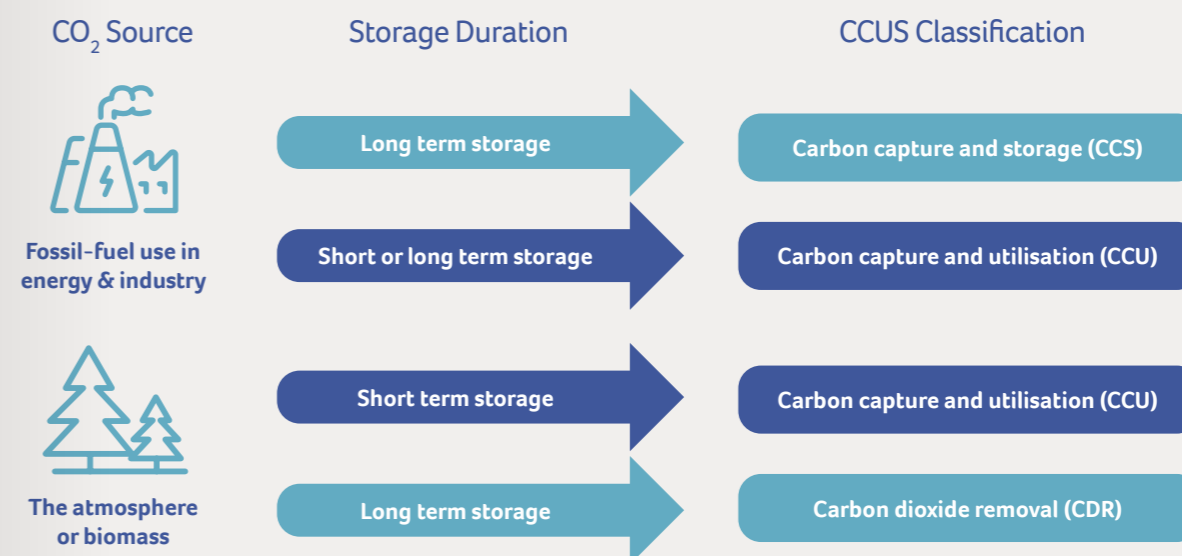
Figure 1: CDR is needed alongside decarbonisation strategies



Source: Figure based on footnote¹.

CCU, CCUS, CCS, and CDR explained

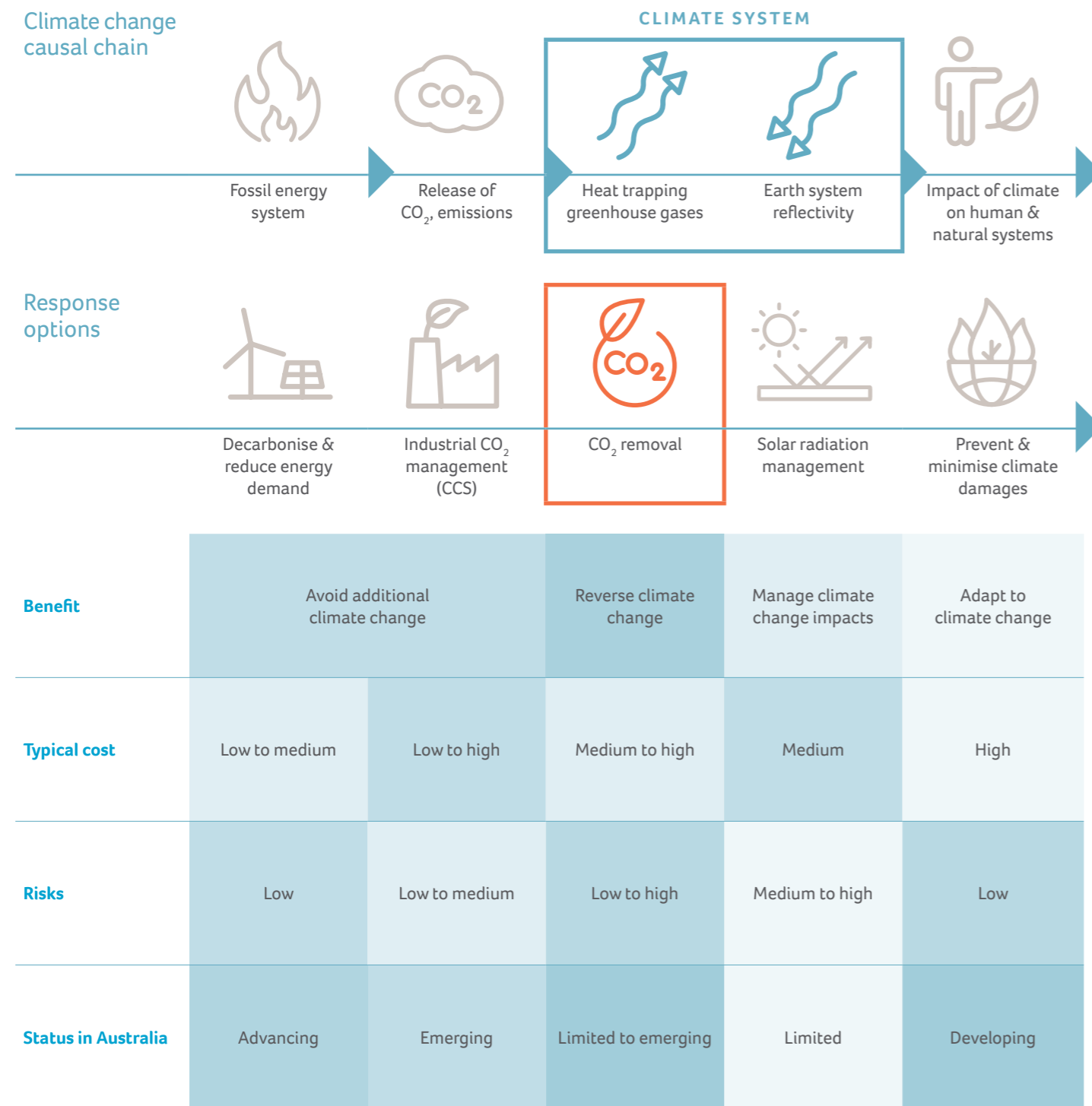
Carbon capture, utilisation, and storage (CCUS) refers to technologies that capture CO₂ emissions from industrial processes or the atmosphere, and then either store it permanently or use it in products (CCU). These applications include the production of chemicals, fuels, building materials, or other products. Unlike Carbon capture and storage (CCS), CCU does not necessarily result in the permanent removal of CO₂ from the atmosphere, as the utilised CO₂ may eventually be released back into the environment during the lifecycle of the products.² CDR methods extract CO₂ from the air, either directly or through biomass (plants capture CO₂ from the atmosphere through photosynthesis and store the carbon in biomass), then store it underground or in long-term materials.



Source: ³

¹ Rueda, O. (2021, March 11). Negative-emissions technology portfolios to meet the 1.5°C target [Conference presentation]. PCF Dialogue 2: Avoiding Permafrost Thaw: Managing Temperature. Retrieved from <https://cascadainstitute.org/wp-content/uploads/2021/03/Rueda-PCF-Presentation-March-11-2021.pdf>
² IPCC. (2022). Climate Change 2022: Mitigation of Climate Change. Contribution of Working Group III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change. Cambridge University Press. <https://doi.org/10.1017/9781009157926>
³ Rueda, O. (2023, November 2). Unlocking carbon markets for the public and private sector: Case study—Industrial carbon management – carbon capture, utilisation and storage (CCUS). International Vienna Energy and Climate Forum.

Figure 2: Climate change causal chain and response options: The role of CDR.



Source: Graphical depiction based on footnote 1. Table based on footnotes 1-6

1 Minx, J. C., et al. (2018). Negative emissions—Part 1: Research landscape and synthesis. *Environmental Research Letters*, 13(6), 063001. <https://doi.org/10.1088/1748-9326/aabf9b>
 2 Intergovernmental Panel on Climate Change (IPCC). (2023). Sixth assessment report (AR6). <https://www.ipcc.ch/assessment-report/ar6/>
 3 The Royal Society. (2009). *Geoengineering the climate: Science, governance and uncertainty* (RS Policy document 10/09). The Royal Society. ISBN: 978-0-85403-773-5
 4 Lawrence, M. G., et al. (2021). Evaluating climate geoengineering proposals in the context of the Paris Agreement temperature goals. *Global Environmental Change*, 68, 102220. <https://pubmed.ncbi.nlm.nih.gov/30213930/>
 5 Australian Office of Financial Management. (2024, February). Australian Government climate change commitments, policies and programs. <https://www.aofm.gov.au/sites/default/files/2024-02-02/Climate%20change%20slides%20updated%20February%202024.pdf>
 6 Department of Climate Change, Energy, the Environment and Water. (n.d.). Climate change adaptation. Australian Government. Retrieved February 14, 2025, from <https://www.dcccew.gov.au/climate-change/policy/adaptation>

There is no net zero without carbon dioxide removal

Australia's net-zero commitments, from private and public sectors¹, underscore the need for adopting CDR to complement ambitious emission reduction efforts. CDR will help neutralise Australia's residual emissions from hard-to-abate sectors, estimated to be in the range of 133 MtCO₂ in 2050².

CDR could be classified under two categories: conventional and novel. Conventional CDR methods like tree planting and soil carbon sequestration rely on biological processes to store CO₂ for decades to centuries, while novel CDR methods like direct air carbon capture and storage and enhanced weathering use geochemical processes to achieve longer-term storage, typically for thousands of years. Both types offer promising mitigation potential but differ in feasibility, effectiveness, and impact³. Robust net-zero plans require both scale and a diverse portfolio of CDR methods.

Table 1: Overview of promising CDR methods

Category	CDR method	Definition
Conventional CDR	Afforestation and reforestation (AR)	Afforestation: The planting of trees on naturally unforested land
		Reforestation: The planting or regrowth of trees on previously forested land using native and non-monoculture species.
	Soil carbon sequestration (SCS)	The removal and storage of CO ₂ in soils via the improved management of land.
	Durable harvested wood products	Using forestry materials in buildings and products extends the time of carbon storage of natural biomass and enables additional forestry growth.
Novel CDR	Blue carbon	Activities that restore and protect coastal and marine ecosystems, such as mangroves, seagrasses, and salt marshes, which capture and store carbon in their biomass and sediment
	Biochar (BC)	Biomass is converted into a stable, carbon-rich char via pyrolysis (thermal decomposition with low or no oxygen), which is then applied to soils or used in durable products for long-term carbon storage.
	Bioenergy with carbon capture and storage (BECCS)	The production of heat, electricity or biofuels with biomass, followed by the capture and storage of exhaust CO ₂ in geological formations or in durable products.
	Direct air carbon capture and storage (DACCS)	The capture of CO ₂ directly from ambient air via the use of chemical reactions with storage of CO ₂ in geological formations or in durable products.
	Enhanced weathering (EW)	The acceleration of the process by which minerals absorb CO ₂ via, for example, the pulverisation and spread of basalt on soil.
	Ocean alkalinity	Increasing ocean concentration of ions like calcium to increase uptake of CO ₂ into the ocean.
	Ocean fertilisation	Applying nutrients to the ocean to increase photosynthesis and remove atmospheric CO ₂ .

Source: Based on WBCSD⁴ and Net Zero Climate⁵

1 Department of Climate Change, Energy, the Environment and Water. (2021). Australia's long-term emissions reduction plan. Australian Government. Retrieved from <https://www.dcccew.gov.au/climate-change/publications/australias-long-term-emissions-reduction-plan>
 2 Climate Change Authority. (2024). Sector pathways review 2024: Summary report. Climate Change Authority, Australian Government. <https://www.climatechangeauthority.gov.au/sites/default/files/documents/2024-09/2024SectorPathwaysReview.pdf>
 3 Rueda, O., Mogollón, J. M., Tukker, A., & Scherer, L. (2021). Negative-emissions technology portfolios to meet the 1.5 °C target. *Global Environmental Change*, 67, 102238. <https://doi.org/10.1016/j.gloenvcha.2021.102238>
 4 World Business Council for Sustainable Development. (2023, September 20). Removing carbon responsibly: A guide for business on carbon removal adoption. WBCSD. Retrieved from <https://www.wbcd.org/resources/removing-carbon-responsibly/>
 5 Net Zero Climate. (2023, January). Carbon dioxide removal. Net Zero Climate. Retrieved from <https://netzeroclimate.org/research/carbon-dioxide-removal/>

Opportunities for Australia

Australia is uniquely positioned to capitalise on the global need for CDR and build a world-leading infrastructure and industry. First, it can leverage its vast land and ocean area to develop conventional CDR methods. And second, it can utilise its abundant renewable energy resources and industrial expertise to develop novel CDR. On land, CSIRO indicates that environmental plantings (i.e. the strategic planting of trees with environmental benefits) could sequester 480 megatonnes of CO₂ (MtCO₂) annually by 2050.¹ In water, Australia harbours about 12 percent of the world's blue carbon ecosystems. Conserving and restoring blue carbon ecosystems can help maintain and enhance carbon sequestration and provide food and habitat for marine life.

Barriers to scaling CDR

Scaling novel CDR is harder than scaling most emission reduction measures, such as renewable energy, which have attracted more investment due to viable business models. The climate benefits of CDR represent a public good. However, as with waste management, where legal requirements create a functional market, scaling novel CDR requires economic incentives, aligning its societal value with financial returns.

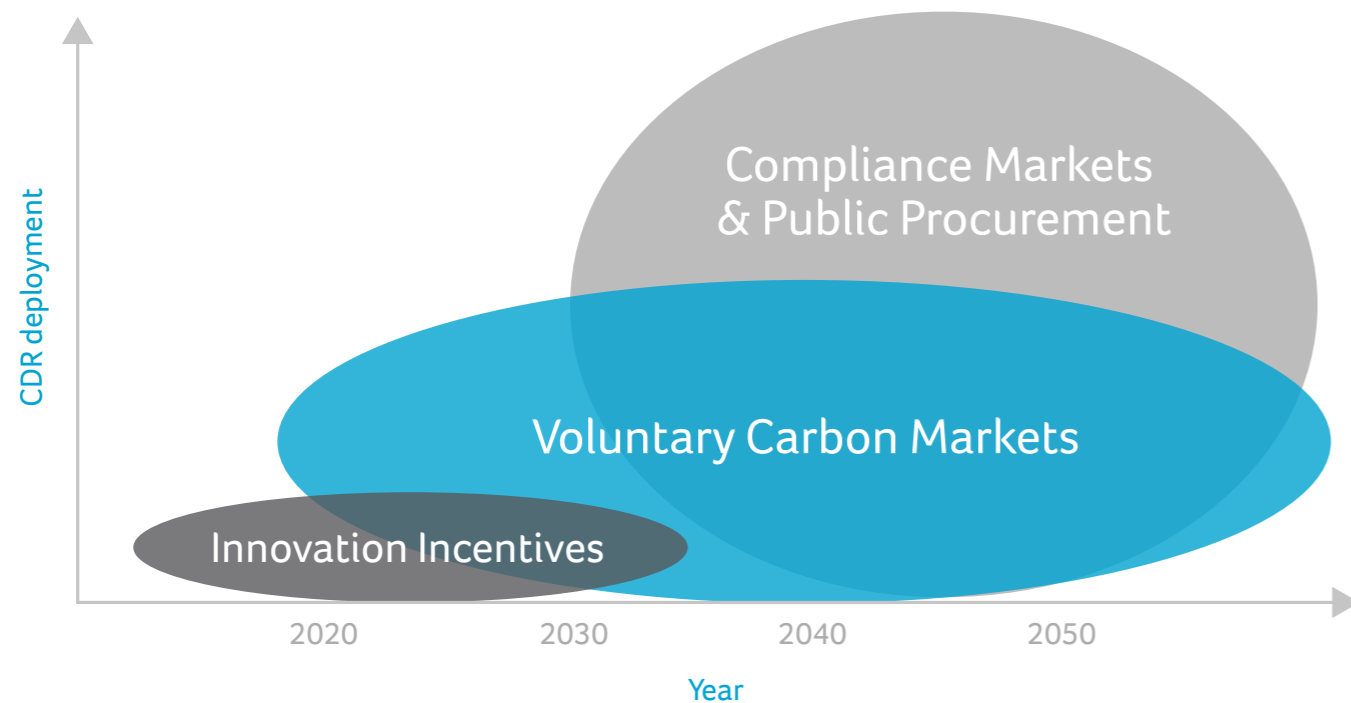
Several other barriers hinder CDR adoption. A key challenge is technological readiness, as many novel CDR technologies remain

in the early stages, with uncertainties around scalability, efficiency and costs. Advancing innovation and cutting costs requires public-private collaboration, increased R&D investment, and pilot projects. Infrastructure gaps also pose hurdles, particularly for DACCS and BECCS, which rely on CO₂ infrastructure for transport and storage. Meanwhile, conventional "nature-based" solutions face high verification costs and land constraints. Finally, securing social licence is essential. Engaging First Nations and regional communities in land management and effectively communicating CDR's economic, environmental, and social impacts will be key to broader adoption.

Unlocking CDR adoption

A range of economic incentives can help overcome CDR investment and thus supply barriers. In the near term, innovation-focused measures such as tax credits can help reduce costs and accelerate the development of novel CDR technologies. The voluntary carbon market is another mechanism to channel private funding into CDR activities, supporting the early-stage scaling of the industry. However, to unlock the full economic and climate potential of CDR over the medium to long term, large-scale deployment will depend on the integration of removal credits into compliance markets or direct procurement by public entities. These mechanisms could create the stable demand and financial certainty needed to accelerate the scaling of CDR technologies.

Figure 3: Timing and scale of CDR incentives



Source: Based on ^{2,3,4}

- 1 Commonwealth Scientific and Industrial Research Organisation. (28 November 2022). Australia's carbon sequestration potential: A stocktake and analysis of sequestration technologies. Retrieved from <https://www.csiro.au/en/research/environmental-impacts/emissions/carbon-dioxide-removal/carbon-sequestration-potential>
- 2 López-Morales, M. A., Vargas, R., & García, P. (2021). Climate change adaptation and its impact on sustainable development: A literature review. *Frontiers in Climate*, 3, 638805. <https://doi.org/10.3389/fclim.2021.638805>
- 3 Mann, M. E., & Rupp, D. E. (2022). Understanding the relationship between climate change adaptation and sustainable development: Insights from the literature. *Frontiers in Climate*, 4, 1101525. <https://doi.org/10.3389/fclim.2022.1101525>
- 4 García, P., Vargas, R., & López-Morales, M. A. (2021). Climate change impacts on the sustainable development goals: A global perspective. *Frontiers in Climate*, 3, 685227. <https://doi.org/10.3389/fclim.2021.685227>





Policy options for scaling CDR

Fiscal incentives for innovation

Public sector fiscal incentives are vital in the early stages of scaling, driving innovation by improving economic viability and reducing financial risks. Government subsidies, such as direct payments, cost-sharing programs, or contracts-for-difference, could offset operational expenses for project operators, while tax credits would reduce corporate tax liabilities and reward CO₂ capture and storage.

Australia can draw key lessons from the former Biden Administration's efforts, where the 45Q tax credit¹, offering up to USD 180 (AUD 285) per tonne of CO₂ captured and stored using DACCS, positioned the United States as a global leader in novel

CDR. Australia has the opportunity to follow suit by introducing similar incentives. For instance, the Australian government could model a tax credit for CDR on its approach to the Hydrogen Production Tax Incentive² announced in 2024 and set to launch in 2027.

Voluntary carbon markets

Voluntary carbon markets (VCM) have channelled critical funding into novel CDR technologies, and can support early-stage growth, but high costs remain a major barrier. Technologies like DACCS cost USD 450–900 (AUD 715–1400) per tonne CO₂, while BECCS ranges from USD 220–500 (AUD 320–800) per tonne CO₂. For comparison, these costs far exceed current carbon credit prices. Australian Carbon Credit Units (ACCU), for instance, trade at just AUD 35 (USD 23) per tonne CO₂ in the current spot market.

Consequently, the VCM for novel CDR credits is dominated by a few well-funded U.S. firms, with Microsoft leading the pack, driven by its pledge to eliminate historical and current emissions through a USD 1 billion climate fund¹. Pioneering buyer coalitions, such as the NextGen CDR Facility or Frontier, are helping facilitate progress by aggregating demand and providing long-term financing solutions. The upcoming revision of the Science-Based Targets initiative (SBTi) Corporate Net Zero Standard is expected to influence demand for novel CDR, for example, by requiring companies to invest in CDR according to clear interim milestones. If adopted, this shift could unlock large-scale corporate financing, including in Australia, where over 80 companies have committed to science-based targets.

Beyond the voluntary carbon market, corporate standards and guidance are shaping credible net zero strategies. The revised Oxford Principles for Net Zero Aligned Carbon Offsetting emphasise the need to transition to carbon dioxide removal with low risk of reversal over time. Additionally, the International Organization for Standardization (ISO) has published the Net Zero Guidelines (IWA 42:2022) as a global benchmark for net zero commitments, with the forthcoming ISO Net Zero Standard expected to formalise best practices for organisational decarbonisation. These evolving frameworks will influence corporate investment in CDR, ensuring alignment with scientifically rigorous climate strategies.

Compliance market integration

While the VCM supports the early development of CDR, integrating CDR into compliance markets, such as Australia's reformed Safeguard Mechanism, offers a greater potential to ensure large-scale adoption.

The UK and EU are considering integrating CDR into the UK and EU ETSs, which would allow regulated entities to use CDR credits to meet obligations, creating a stable and predictable source of demand for the industry. Currently, ETS prices such as the EU average USD 67 (AUD 100) per tonne CO₂—well below the USD 220–500/tCO₂ required for BECCS or USD 450–900/tCO₂ for DACCS, although ETS prices would increase as industries exhaust the most cost-effective emission-reduction measures. Bridging the gap at different points in time would still require other government interventions such as contracts-for-difference or similar policy tools.

Australia's Safeguard Mechanism could introduce measures to strengthen incentives for novel CDR deployment, but additional policy solutions, such as subsidies or targeted incentives, are needed. Amending the Carbon Credits (Carbon Farming Initiative) Act 2011 (CFI Act) to include novel CDR technologies would close the current gap in the definition of 'sequestration offsets projects,' allowing these technologies to be eligible for generating ACCUs within the scheme. This amendment would enable the development of methodologies for these technologies, providing a clearer pathway for generating ACCUs. This would allow for the introduction of a requirement for Safeguard facilities using ACCUs to ensure they purchase a certain proportion from novel CDR methods.

Direct government funding and procurement

In the long term, financing CDR as a public waste management service could help ensure large-scale adoption. Governments could oversee and fund CO₂ removal efforts, ensuring consistent and equitable implementation.²

In the short term, direct government procurement can also serve as an early-stage catalyst for CDR deployment, complementing integration into emissions trading systems (ETS). Initially, such programs can focus on purchasing small volumes to support pilot projects and demonstration sites. Leading examples include Sweden's USD 3.5 billion reverse auction, which primarily targets BECCS, Denmark's Negative CO₂ Emissions Fund, which supports BECCS projects and integrates removals into its GHG inventory, and Canada's commitment to procure CAD 10 million in CDR services by 2030. While these initiatives remain small relative to the overall scale of investment needed, they signal government support. In Australia, the government could strategically target ACCU purchases funded by the Powering the Regions Fund (formerly Emissions Reduction Fund) at novel CDR technologies such as DACCS and other emerging methods, noting that this would be contingent on CFI Act amendments outlined in the section above. The government could also expand the AUD 65 million Carbon Capture Technologies Program (CCTP) announced in 2024 to complement ongoing research and development efforts.

Conclusions

Scaling a diverse portfolio of CDR approaches, ranging from conventional to novel methods, is essential for achieving net-zero emissions, but its success hinges on overcoming financial, technological, and policy barriers. Australia is uniquely positioned to lead in CDR, leveraging its vast land, renewable energy capacity, and industrial expertise to develop both conventional and novel CDR. However, unlocking this potential requires strong policy support, market incentives, and public-private collaboration to drive investment and scale deployment. By acting now, Australia can not only meet its own climate commitments but also position itself as a global leader in carbon removal, shaping the future of sustainable climate action.

Since 2006, South Pole has been a trusted partner and advisor to governments, public sector organisations, and leading businesses on their decarbonisation journeys. We serve over 1,000 clients across the world, and our global team of experts has helped many Fortune 500 businesses implement comprehensive strategies that help build resilience and turn climate action into long-term business opportunities. And in line with our mission to deliver true climate impact for all, South Pole has used the power of markets to help channel climate finance to over 850 projects in more than 50 countries across the globe.

¹ International Energy Agency. (21 August 2023). Section 45Q Credit for Carbon Oxide Sequestration. Retrieved from <https://www.iea.org/policies/4986-section-45q-credit-for-carbon-oxide-sequestration>

² Australian Taxation office. (17 December 2024). Hydrogen Production and Critical Minerals Tax Incentives. Retrieved from <https://www.ato.gov.au/about-ato/new-legislation/in-detail/businesses/hydrogen-production-and-critical-minerals-tax-incentives>

¹ Microsoft Climate Innovation Fund. (16 January 2020). Microsoft will be carbon negative by 2030. Retrieved from <https://blogs.microsoft.com/blog/2020/01/16/microsoft-will-be-carbon-negative-by-2030/>

² Buck, H. J. (2020). Should carbon removal be treated as waste management? Lessons from the cultural history of waste. *Interface Focus*, 10(5), 20200010. <https://doi.org/10.1098/rsfs.2020.0010>

KEY POINTS

Nature is increasingly seen as a form of capital, not as an externality.

The rise of nature markets and recognition of the economic significance of nature impacts and dependencies is likely to trigger an asset repricing event that will ultimately affect many sectors.

There will be both compliance and voluntary drivers that result in organisations confronting their 'nature liability' that could unlock significant financial support for conservation and restoration activities, particularly through credit market schemes.

Decarbonisation initiatives and net zero sector plans can be leveraged to simultaneously deliver benefits for both the climate and natural environment and companies are increasingly looking for alignment in managing risks and targets.

Scaling action will require good governance frameworks and regulation, the effective integration of the value of nature into decision-making, and the development of a range of financial and market instruments.

Scaling action for Nature Positive

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ANTHESIS

Introduction

Globally, there have been significant advances in the creation of natural capital frameworks and biodiversity credit mechanisms. However, financial instruments on their own will not be enough to overcome the fact that economies, finance and business management have, on the whole, ignored nature in decision making.

“**Achieving a nature positive future entails halting and reversing nature loss by 2030 against a 2020 baseline, and achieving full recovery by 2050 – and this will require a fundamental shift in how organisations view and interact with nature.**¹”

Companies and other entities need to acknowledge their reliance on ecosystem services, and understand the inherent nature-related risks they face. They will then need to embed this information into their decision-making. This will inevitably prompt an increasing number of organisations to participate in nature markets and credit systems, either as a compliance requirement or a voluntary response to address 'nature-liability'. This could, in turn, unlock additional critical financial support for conservation and restoration initiatives. However, if a vision of a world economy that is nature positive is to be achieved, then a three-pronged approach to scale action quickly will be required. This would involve:

1. Ensuring effective policy, governance and regulation that enables strategic alignment between climate and nature initiatives and markets;
2. Integrating the value of nature into financial and economic analysis; and
3. Developing a range of nature-focused financial and market instruments and leveraging existing tools and markets, such as carbon markets.

Below is a more detailed analysis of each of these three elements. In combination, they will play an important part in placing nature on a path to recovery within the timeframes specified by the Kunming-Montreal Global Biodiversity Framework (GBF).

¹ See sections F and G of the Kunming-Montreal Global Biodiversity Framework (CBD/COP/15/L25), 15/4, Kunming-Montreal Global Biodiversity Framework.



Governance and regulation as a foundation for nature markets

Robust governance and regulatory measures are essential to set the economy on the path to nature positive. Governance frameworks establish key guardrails within which organisations can operate. They set the standards for assessment and transparency, and they specify the key underlying principles for nature positive. Regulatory measures can be a key driver of change by requiring organisations to mobilise and respond to the need to integrate nature into their business models.

Following the adoption of the GBF in 2022, a body of regulatory requirements and enabling governing frameworks has emerged in support of nature positive. Key amongst these global enabling frameworks are the recommendations of the Taskforce on Nature-related Financial Disclosures (TNFD) and the Science Based Target Network's (SBTN) Nature target-setting framework. These stand alongside a host of other initiatives, including Business for Nature, the Capitals Coalition's work on integrating all forms of capital, and supporting guidance developed by the World Business Council for Sustainable Development. At the same time, a growing body of work and guidance has emerged on measuring the state of nature, such as the System of Environmental Economic Accounting (SEEA) which forms the basis for the emerging Accounting for Nature framework, and work by the Nature Positive Initiative and the Partnership for Biodiversity Accounting Professionals (PBAF).

Sustainability reporting standards, such as those developed by the Global Reporting Initiative (GRI) and International Sustainability Standards Board (ISSB), are also encouraging and facilitating a greater integration of nature into corporate disclosures.¹ Alongside these enabling frameworks for assessing and reporting on an organisation's nature dependencies and impacts, new regulations in Europe will result in greater disclosure of nature-related risks, and are helping to establish global disclosure standards. For example, the European Union's Corporate Sustainability Reporting Directive (CSRD) requires certain companies to disclose the

impacts of their operations on nature and biodiversity, which in turn helps to embed nature-related considerations into corporate strategies. Collaboration is also underway between the TNFD and standard setters including GRI, SBTN, and the ISSB, to ensure interoperability and alignment.²

The global governance framework for assessing and reporting on nature-related issues, and regulatory requirements in Europe, are already driving corporate action. Over 416 organisations, headquartered in more than 50 jurisdictions and representing over US\$6 trillion in market capitalisation, were reporting under the TNFD as of mid-2024.³

In Australia, corporates that have international parent companies captured by disclosure obligations are already mobilising to fall in line with overseas requirements. This suggests that nature-related disclosures could evolve in a similar way to that experienced with climate disclosure. For climate risk, the transition of the Task Force on Climate-related Financial Disclosures (TCFD) into the ISSB has led to mandatory climate-related disclosures through the Australian Sustainability Reporting Standards (ASRS).

The establishment of mandatory disclosure requirements would also be aligned with, and perhaps is driven by, a legal opinion that Australian (and UK) company directors have a duty under corporations law to consider nature-related risks.⁴ While future regulatory developments will be dictated by the government of the day, against the backdrop of this opinion, and policy developments such as the hosting of the Global Nature Positive Summit, the Sustainable Finance Roadmap, and the Strategy for Nature 2024-2030, the introduction at some future stage of mandatory, nature-related disclosures does seem a possibility.⁵

While corporate action on nature in Australia is slowly rising, clear domestically articulated disclosure requirements are needed to drive companies to assess nature-related dependencies, impacts, risks and opportunities, and then respond accordingly. This in turn, would serve to create foundational demand for participation in nature markets as the tool for adopting, measuring, verifying and investing in nature-positive practices.

¹ GRI's Biodiversity Standard was updated in 2024, and the ISSB also commenced work on nature-related reporting requirements in 2024. TNFD 2024, 'TNFD welcomes the ISSB's decision to commence work on nature-related issues', <https://tnfd.global/tnfd-welcomes-the-issb-decision-to-commence-work-on-nature-related-issues/>; IFRS 2024, 'IFRS - ISSB to commence research projects about risks and opportunities related to nature and human capital', www.ifrs.org/news-and-events/news/2024/04/issb-commence-research-projects-risks-opportunities-nature-human-capital/.

² TNFD, 'Standards Alignment – Harmonising the nature-related information disclosed by corporates and financial institutions', <https://tnfd.global/standards-alignment/>.

³ Climate Action 2024, 'TNFD adoption now over 400 organisations and new sector guidance released', [Climate Action 02 July 2024](https://climateaction.org/2024/07/02/tnfd-adoption-now-over-400-organisations-and-new-sector-guidance-released/).

⁴ Hartford-Davis, S, Bush, Z (October 2023) 'Joint Memorandum of Opinion: Nature-related risks and directors' duties', <https://pollinationgroup.com/global-perspectives/australian-company-directors-and-nature-related-risk-a-new-legal-opinion/>.

⁵ Commonwealth Treasury 2024, 'Sustainable Finance Roadmap', <https://treasury.gov.au/sites/default/files/2024-06/p2024-536290.pdf>; Commonwealth of Australia 2024, 'Australia's Strategy for Nature 2024-2030', www.dcceew.gov.au/sites/default/files/documents/australias-strategy-for-nature-2024-2030.pdf.

Integrating nature into financial and economic systems

Restoring and protecting nature requires a fundamental shift in our relationship with nature, and in how we treat it within our economic models and financial systems.¹ Natural resources or “natural capital” as it is now frequently termed, underpins all other working capital, including production systems and human consumption. Nature sits at the very core of the system that provides us with the resources and stability on which we depend. Nature also lies at the heart of addressing the many fundamental challenges we face, from climate change through to hunger and food insecurity.

Most of the world’s listed companies depend on natural capital for their business, yet this dependency goes unrecognised, leaving trillions of dollars in environmental costs unaccounted for each year. Not ascribing any monetary valuation to these costs has effectively hidden them from policymakers, investors and consumers.² Monitoring and reporting the loss of biodiversity – without placing a value on it – is not sufficient to drive change. The valuation of the damage done in terms of ‘cost to restore’ is now being replaced with valuations based on understanding the risk of nature loss to an organisation’s operational cash flow, asset values and the wider economy. This has been achieved by identifying the industries that are dependent on nature and then totaling the value of the economic outputs of these industries. A value of \$44 trillion, which is more than half the world’s total GDP, has been estimated globally to be moderately or highly dependent on nature and its services and therefore exposed to nature loss.³

The rising global awareness of the need to integrate nature into business models, and the accompanying transformational shifts in investment flows that are required, is leading to an increase in expectations for businesses to report on how they are managing these risks and implementing nature positive strategies.⁴ Nature markets will form a fundamental component of the development and implementation of these strategies. There is some evidence that the financial transformation that is needed is taking root. For example, BlackRock, the world’s largest asset manager, now officially recognises natural capital as an investment factor.⁵ This suggests we are at the tip of an asset repricing event that will impact many sectors, from agriculture to manufacturing, finance and technology. As BlackRock has said: ‘We now have an ‘institutional acknowledgement that nature is not an externality – it is capital.’⁶

Alongside finance, the insurance sector is uniquely positioned at the intersection of risk managers, insurers and investors and will have a major role to play in facilitating the nature positive transition.⁷ With increasing natural hazards creating insurability challenges the world over, the reshaping of insurance towards

nature-positive strategies will send clear signals to organisations of the need to integrate nature into their business models.⁸

There are also real gains to be made from seizing the opportunities arising from implementing nature positive strategies aligned with the mitigation hierarchy, which seeks to mitigate adverse environmental impacts from economic activity. This hierarchy calls on organisations, in order of preference, to avoid, reduce/minimise, restore and regenerate, and to transform the underlying economic system that has led to degradation and loss of nature.⁹ A key example of this is in relation to water companies, whom by applying the mitigation hierarchy to minimise their dependency on water use and become more efficient, outperform their competitors as a result of the ability to lower input costs whilst mitigating against water use.¹⁰

Across the sectors, transitioning to a nature-positive economy has been estimated to generate up to \$10 trillion in additional annual business revenue, with additional cost savings and the potential to create 395 million new jobs by 2030.¹¹

Developing nature-focused financial instruments and harnessing existing markets

There are a broad range of investment mechanisms that can be used to finance nature projects. Mechanisms to incentivise either nature projects or systems shifts, include payments for ecosystem services, concessional finance, environmental taxes, green bonds and loans, blended finance, and philanthropic funding.¹² Finance mechanisms, such as insurance, help transform business processes and systems where they can create the right kind of incentives and signals for corporates to integrate nature into their business model. Importantly, this list also includes market-based approaches, such as nature and/or biodiversity credit schemes, as well as carbon schemes that enable nature-based climate solution projects.

Whilst noting general concerns around an approach that commoditises nature, credit market schemes have a specific role to play, particularly in the restoration and regeneration component of the mitigation hierarchy. Similar to carbon markets, by specifically valuing nature restoration and biodiversity actions and outcomes, these schemes can unlock private finance for projects that have otherwise limited or no alternative routes to achieving a financial yield. Further, nature markets can provide a clear pathway for channelling and scaling finance in the right direction, as well as an explicit attribution and linking mechanism for corporations to acknowledge their participation and efforts contributing towards a nature positive strategy. Finally, credit schemes require clear protocols for the ongoing monitoring, reporting and third-party verification of outcomes, as well as clear guidance around claims.

In fact, well defined guidance for the creation of credible and scalable biodiversity credit markets has been developed by the Biodiversity Credit Alliance, a voluntary international alliance.¹

Notwithstanding the progress made towards developing biodiversity and nature market(s), the carbon market has played an initial enabling role in the implementation of various nature restoration projects. This has been achieved under a variety of different schemes and land-based methods, namely: Verra’s Sustainable Development Verified Impact Standard (SD VISta), Plan Vivo, Gold Standard for Global Goals (GSGG), the Climate, Community and Biodiversity Alliance (CCBA), as well as the national Australian Carbon Credit Unit (ACCU) Scheme. New methods are now emerging under these schemes to focus directly on nature and biodiversity improvements, such as Plan Vivo’s Biodiversity Standard and Verra’s Nature Framework – an asset methodology under SDVista program. Nationally, we now have the Nature Repair Market, established in 2023 under the Nature Repair Act 2023, which will be administered in parallel with the ACCU Scheme by the Clean Energy Regulator.

The development of nature restoration/improvement projects adjacent to or stacked on top of nature-based carbon projects, has enabled an initial step to activate a potential nature market and achieve nature positive outcomes. The first approved method under the national Nature Repair Market was released in March 2025. The Nature Repair (Replanting Native Forest and Woodland Ecosystems) Methodology Determination 2025 enables the opportunity for projects to earn both a biodiversity certificate, as well as ACCUs for projects that meet the requirements of the relevant ACCU Method. The voluntary NaturePlus scheme also enables stacking with, or co-location of, a carbon project and a nature project. This ability to both stack, and co-locate has the potential to generate additional revenue for proponents, subject to meeting additionality requirements.

Another way in which carbon markets can act as the carrier for catalysing nature action is by leveraging the synergies between achieving net zero targets and nature positive outcomes. Climate and nature are inextricably linked and holistic solutions to addressing both challenges are needed. Corporates are already familiar with carbon markets in the context of achieving net zero and have associated treasury allocated. This familiarity can be leveraged to integrate nature into carbon outcomes, as well as shift strategic thinking.

In the Australian context, where regulatory requirements trail behind other jurisdictions and organisations are still creating the business case for nature, a kick start to stimulate market demand – and hence the important nature action we need – seems necessary in order to scale nature markets and build confidence. One possibility could be the establishment of a Nature Positive Fund, similar to the government fund for purchasing credits that has, until recently, underpinned the operation of the ACCU scheme.

Regardless, for nature markets to operate effectively and with integrity, lessons can be gleaned from the years of experience of the carbon market. The following elements are essential:

- Clear definitions and principles, including on crediting, compensation/offsetting, contributions, claims, and alignment with the Nature Positive mitigation hierarchy.
- Strong integrity frameworks, dealing with matters including additionality, permanence, leakage, baselining, monitoring, reporting, and verification of outcomes.

- The integration of Indigenous Peoples and local communities into project design and ongoing nature stewardship through implementation, and the use of best practice protocols and guidelines when consulting on and seeking free prior and informed consent.

Conclusion

Achieving a nature positive future requires the alignment of governance frameworks, regulatory frameworks, and investment signals, to drive meaningful action. Incorporating nature’s value into financial analyses, risk assessments, and corporate strategies is essential to reshaping how businesses manage their environmental impacts, reduce dependencies, and unlock opportunities. Nature markets can help organisations to respond to nature dependencies and impacts, adopt nature positive approaches, and measure and report on their progress.

However, their success will depend on forging a strategic alignment between climate and nature initiatives and targets and support from government to establish regulatory drivers and create an enabling environment. To achieve the necessary progress towards nature positive, we also need to harness existing markets and mechanisms and build on them as a base. Carbon markets are a vital tool for achieving and supporting nature positive outcomes. Moreover, given the inherent links between climate and nature, organisations can make progress more quickly if they consider weaving nature into their decarbonisation strategies and initiatives.

Ultimately, a climate and nature positive future can be reached only if we support organisations to integrate all forms of capital into their business model. The convergence of existing tools and markets, as well as corporate strategies, are steps that can lead us in this direction.

Anthesis guides clients to sustainable performance. As the world’s leading purpose-driven, digitally enabled, science-based activator, we are committed to creating a more resilient and productive world. With world-class expertise, we support clients in their transition to decarbonisation and sustainability, driving impact through financially driven strategies, technical excellence, market-leading digital solutions, and innovative collaboration.

Our Nature team brings practical on-ground knowledge at the intersection between the well-established carbon industry and the emerging nature market. With over 30 years’ collective experience as auditors and advisers under the ACCU Scheme, our expertise, market knowledge, insights into emerging trends, and ability to deploy in short timeframes is unmatched. We have a diverse team of environmental engineers, environmental scientists, ecologists and law and policy experts, who also hold accreditations as Accounting for Nature (AfN) experts and auditors, and as verifiers under the Reef Credit Scheme. We also draw on the experience of our colleagues in the Climate Risk team to help companies and their Boards in any phase of their climate and nature positive journeys, from early Board engagement, risk assessments, roadmap development and reporting/disclosure, through to implementing identified opportunities, and unlocking value creation, ultimately promoting positive impact with our clients.

1 Dasgupta, P. 2021, ‘The Economics of Biodiversity: The Dasgupta Review’, https://assets.publishing.service.gov.uk/media/602e92b2e90e07660f807b47/The_Economics_of_Biodiversity_The_Dasgupta_Review_Full_Report.pdf

2 S&P Global Sustainable1 2024, ‘Unpriced Environmental Costs – The Top Externalities of the Global Market’, www.spglobal.com/esg/insights/blog/unpriced-environmental-costs-the-top-externalities-of-the-global-market.

3 World Economic Forum 2020, ‘Nature Risk Rising: Why the Crisis Engulfing Nature Matters for Business and the Economy’, www.weforum.org/docs/WEF_New_Nature_Economy_Report_2020.pdf.

4 Insurance Council of Australia 2024, ‘Advancing Resilient Nature Positive Insurance in Australia’, <https://insurancecouncil.com.au/resource/resilient-nature-positive-insurance>.

5 BlackRock 2025, ‘Our Approach to Engagement on Natural Capital’, www.blackrock.com/corporate/literature/publication/blk-commentary-engagement-on-natural-capital.pdf.

6 Ibid.

7 Insurance Council of Australia 2024, ‘Advancing Resilient Nature Positive Insurance in Australia’, <https://insurancecouncil.com.au/resource/resilient-nature-positive-insurance>.

8 Ibid.

9 This is the AR3T model of the mitigation hierarchy deployed by the Science Based Targets Network. Science Based Targets Network 2023, ‘SBTN Glossary of Terms’, https://sciencebasedtargets.org/wp-content/uploads/2023/05/SBTN-Steps-1-3-Glossary_2023.docx-1.pdf.

10 Ross, Matt 19 February 2025, ‘BlackRock’s Quiet Signal: The Natural Capital Market Awakens’, Natural Capital Trader, https://indoeden.substack.com/p/blackrocks-quiet-signal-the-natural?utm_campaign=post&utm_medium=web&triedRedirect=true

11 World Economic Forum 2020, ‘New Nature Economy Report II: The Future of Nature and Business’, www.weforum.org/publications/new-nature-economy-report-ii-the-future-of-nature-and-business.

12 International Advisory Panel on Biodiversity Credits 2024, ‘Framework for high integrity biodiversity credit markets’, www.iapbiocredits.org/framework.

1 Biodiversity Credit Alliance (2024). High Level Principles to Guide the Biodiversity Credit Market, https://www.biodiversitycreditalliance.org/wp-content/uploads/2024/11/BCA_High-level-Principles-to-Guide-the-Biodiversity-Market-working-paper-EN_ES_FR.pdf



**Carbon markets
are a vital tool
for achieving and
supporting nature
positive outcomes.**



The data revolution in carbon markets: Unlocking transparency, accountability, and growth

DAVID CARLIN
WollemAI

Introduction

The global momentum for carbon markets continues to accelerate, underscored by critical developments at COP29. Notably, the landmark agreement on Article 6¹ provides a clearer framework for international cooperation on carbon credits, laying the groundwork for standardised approaches to measuring, reporting, and verifying emissions reductions across borders. These advancements reinforce the vital role of carbon markets in channeling investments to reduce greenhouse gas emissions, protect ecosystems, and drive innovation in sustainability.

Australia's carbon market, underpinned by the Australian Carbon Credit Unit (ACCU) Scheme², is a key pillar of the country's climate strategy. The ACCU framework supports domestic projects that sequester, reduce or avoid emissions and ensures these projects meet regulated integrity standards. At the same time, voluntary carbon markets operating globally serve as complementary mechanisms, enabling corporations and investors to pursue ambitious climate objectives.

While Australia's domestic ACCU Scheme and global compliance as well as voluntary carbon markets hold immense promise, their success hinges on a critical factor: robust, decision-useful data. The challenge lies in the persistent data gap that limits the ability of financial actors to assess environmental risks and opportunities. Whether it's determining the credibility of a carbon project or understanding the value of natural capital, decision-makers often lack the granular, location-specific insights needed to act with confidence. Advanced technologies, including Earth observation and machine learning, have the potential to bridge this gap, enabling greater accountability and precision in carbon and nature markets. These new tools are also enabling the creation of new markets. For instance, biodiversity markets are also emerging, such as the Nature Repair Market³ in Australia, providing another avenue for corporates to take action in the face of nature and climate risks.

KEY POINTS

As carbon markets grow in scale and complexity, their success increasingly depends on the availability of accurate, actionable data.

Advanced technologies can provide the precision, transparency, and scalability these markets demand.

Alongside ground-truthing and drone-based practices, satellite imagery and remote sensing have revolutionised how we monitor and manage environmental systems, by providing real-time, high-resolution insights into critical factors such as deforestation, water stress, and biodiversity hotspots.

Advanced machine learning models can process vast and complex datasets to identify trends, predict risks, and generate actionable insights.

By automating the analysis of environmental data, AI can enhance the accuracy of climate risk assessments, and equips market participants with tools to navigate complex decisions confidently.

The Carbon Market Institute, in coalition with the IoT Alliance Australia, the Australian Industry Group, Climateworks Centre, and the Tech Council of Australia, have jointly urged government to coordinate support and funding for an industry-led Trusted Climate and Nature Data Plan.

1 UNFCCC, 2024, <https://unfccc.int/news/cop29-un-climate-conference-agrees-to-triple-finance-to-developing-countries-protecting-lives-and>

2 Australian Government Clean Energy Regulator, 2025, <https://cer.gov.au/schemes/australian-carbon-credit-unit-scheme>

3 Australian Government Department of Climate Change, Energy, the Environment, and Water, 2024, <https://www.dcceew.gov.au/environment/environmental-markets/nature-repair-market>

In this article, we will explore the critical role of granular data in advancing carbon and nature markets, the technological innovations driving change, and how companies like WollemAI¹ are leading the charge to create actionable solutions.

The data gap in carbon and nature markets

As carbon markets grow in scale and complexity, their success increasingly depends on the availability of accurate, actionable data. Yet, current data limitations pose significant challenges for market participants and financial actors alike. These challenges manifest in several ways.

Current challenges

One of the most pressing issues is the lack of high-resolution, granular data to inform decision-making. Many carbon credit projects rely on estimates or broad averages that fail to capture the nuances of local environmental conditions. This disconnect between large-scale policy goals and on-the-ground realities often undermines the credibility and effectiveness of carbon markets. Local and national governments have also recognised this challenge and are actively working to improve data quality and transparency. However, without location-specific insights, it becomes difficult to accurately verify carbon sequestration or assess the co-benefits of projects like biodiversity restoration.

A common concern identified by researchers is the potential for overestimation of carbon storage² in poorly monitored projects,

which can result in inflated credit values and diminished market trust. This reinforces the need for advanced data systems that integrate real-time environmental observations with local context.

Impacts on financial decision-making

The absence of detailed data also affects the financial sector's ability to price climate- and nature-related risks and opportunities accurately. Investors face difficulties in assessing the true impact of their portfolios, often relying on outdated or incomplete datasets. This lack of transparency not only increases the risk of greenwashing but also impedes progress toward net-zero and nature positive goals.

Credible data is the foundation for effective carbon markets. Without it, financial actors struggle to build the confidence needed to scale investments in nature-based solutions. From carbon credits to broader natural capital valuation, the integrity of these markets and related products hinges on addressing the data gap.

Unlocking the potential of advanced technologies

Bridging the data gap in carbon and nature markets requires leveraging advanced technologies that can provide the precision, transparency, and scalability these markets demand. From Earth observation (EO) to artificial intelligence (AI), technological innovations are transforming the way environmental data is collected, analysed, and applied.



Our carbon removal module is designed for the assessment of carbon stock and sequestration potential in current and prospective land use types and the change over time. We use satellite or aerial images to estimate biomass through the analysis of vegetation indices, canopy structure, soil moisture and other soil reflectance features. Our algorithms integrate multiple data sources, including optical, radar and LiDAR data. A machine learning model is developed to link satellite-derived observations with on-the-ground survey data.

Earth observation technologies

Satellite imagery and remote sensing have revolutionised how we monitor and manage environmental systems. These tools provide real-time, high-resolution insights into critical factors such as deforestation, water stress, and biodiversity hotspots. For instance, satellite data can detect illegal land-use changes in carbon projects, ensuring their integrity and compliance with market standards. By offering a bird's-eye view of environmental conditions, these technologies alongside rapidly evolving ground and drone-based technologies make it possible to test project outcomes with unprecedented accuracy.

Innovative firms are using EO to track and quantify environmental indicators, ensuring that the data used for carbon markets is both timely and reliable. With the ability to monitor vast areas remotely, such technologies reduce costs and improve efficiency while enhancing accountability. These technologies present opportunities to reinforce confidence in Australia's carbon crediting framework, supporting ACCU Review recommendations to maximise transparency, ACCU data access, and data sharing.

AI and machine learning

Advanced machine learning models play a vital role in processing vast and complex datasets to identify trends, predict risks, and generate actionable insights. For example, WollemAI's machine learning systems enable the evaluation of agricultural assets and the quantification of emissions and removals across large areas.

WollemAI co-founder John Mottram explains the approach: "We use input/output modelling to complete datasets required as inputs into our calculators. Through regression analysis and trained models, we scale our calculations efficiently across large areas, empowering clients to act decisively with accurate information."

By automating the analysis of environmental data, AI not only enhances the accuracy of climate risk assessments but also equips market participants with tools to navigate complex decisions confidently.

Integration with carbon markets

The integration of these technologies into carbon markets offers transformative benefits. Improved measurement, reporting, and verification systems ensure that carbon credit projects meet rigorous standards for transparency and effectiveness. For investors, the availability of precise, verifiable data increases confidence and drives participation in the market.

Advanced technologies also support market innovation by enabling the valuation of co-benefits such as biodiversity and water resources. By enhancing the measurement of natural capital, these tools pave the way for new market mechanisms and revenue streams.

In addition, government initiatives have an important role to play in developing standardised, comparable, and credible data that is decision-useful. A call for policymakers to take up this role was recently made by the Carbon Market Institute in coalition with the IoT Alliance Australia, Australian Industry Group, Climateworks Centre and the Tech Council of Australia. These groups jointly urged government to coordinate support and funding for an industry-led Trusted Climate and Nature Data Plan that would uplift Australia's data capabilities to support investment confidence¹.

The benefits and applications of granular data for carbon markets

Granular, location-specific data is more than a technical upgrade. It is a game-changer for carbon markets, enabling transparency, accountability, and smarter decision-making. By addressing the gaps in current systems, it has the potential to unlock new opportunities and build greater trust in these markets.

Accountability and transparency

Precise, high-resolution data ensures the legitimacy of carbon credits by enabling more accurate monitoring, reporting, and verification (MRV). With granular insights, project developers can demonstrate real-world impacts, such as the amount of carbon sequestered or emissions avoided, backed by verifiable metrics. This data-driven accountability is crucial in combating greenwashing and meeting regulatory requirements.

For instance, WollemAI uses advanced Earth observation and AI technologies to ensure that carbon credits are underpinned by robust, verifiable data. By providing independent, transparent metrics, this approach supports both regulatory compliance and market credibility. In addition, it can boost community understanding of the nature of carbon projects and their potential benefits.

Strategic decision-making

Granular data empowers financial actors to make more informed decisions about where and how to allocate resources. For example, portfolio owners can assess physical vulnerabilities, de-risk investments, and monitor net emissions over time. This level of insight is essential for navigating the transition to net zero and managing climate-related risks effectively.

Take the case of a financial institution managing a diversified portfolio. By integrating granular data solutions, such as those provided by WollemAI, the institution can track the impact of various climate, environmental, and management drivers on their assets. This enables them to prioritise nature-positive investments and reduce exposure to climate risks.

Pricing natural capital

An increasing number of companies and nations are seeking to price their natural capital, recognising its immense value in supporting economies and ecosystems. The UK's Natural Capital Accounting Methodology² is one such example, providing a framework for quantifying and valuing ecosystem services. Accurately pricing natural capital allows market participants to assign value to critical resources like forests, wetlands, and biodiversity, unlocking new market mechanisms and revenue streams.

¹ WollemAI, 2025. <https://www.wollemai.com/>

² University of Cambridge Department of Land Economy, 2024. <https://www.landecon.cam.ac.uk/c-enrg/news/new-research-nature-communications-shows-climate-impact-carbon-crediting-projects#:~:text=via%20Getty%20Images-,New%20research%20in%20Nature%20Communications%20shows%20climate%20impact,crediting%20projects%20is%20significantly%20overestimated&text=A%20new%20meta%20study%20published,are%20significantly%20lower%20than%20claimed.>

¹ Carbon Market Institute, 2024. <https://carbonmarketinstitute.org/2024/11/13/australia-needs-a-trusted-data-plan-to-grow-digital-capability-for-a-net-zero-nature-positive-future/>

² UK Office for National Statistics, 2024. <https://ons.gov.uk/economy/environmentalaccounts/methodologies/uknaturalcapitalaccountsmethodologyguide2024>

Granular data plays a central role in this process by capturing location-specific variables, such as ecosystem health or carbon storage potential. This enables more dynamic and accurate pricing mechanisms for carbon credits and incentivises the development of high-impact projects that align with climate and nature goals

Conclusion

As carbon markets evolve to meet the demands of a rapidly changing world, the need for robust, granular data has never been more critical. Whether it's ensuring the legitimacy of carbon credits, empowering investors to make informed decisions, or unlocking new opportunities through the valuation of natural capital, high-quality data is the cornerstone of a successful and credible market.

The developments at COP29, including the agreement on Article 6, have set the stage for more standardised, transparent, and effective carbon markets. Yet, achieving these goals requires market participants to embrace advanced technologies, such as Earth observation and machine learning, to bridge existing data gaps. The integration of these tools into measurement, reporting, and verification (MRV) systems will not only enhance accountability, but also drive greater investor confidence.

Now is the time for governments and market participants to act. Developing clear expectations that prioritise transparency, embrace innovation, and leverage advanced technologies, can make the carbon market a powerful tool for addressing climate change and protecting natural capital. The transition to a low-carbon, nature-positive future demands not only ambition but also the data and tools to deliver on that ambition.

WollemAI is a technology platform designed to simplify and reduce the cost of climate risk reporting. Leveraging cutting-edge artificial intelligence, climate science, and deep expertise in the land sector, WollemAI delivers highly precise, geo-location-based climate risk data and analytics. The platform supports large organizations in meeting regulatory, investor, and stakeholder demands for climate-related financial disclosures, helping to address the challenges of climate risk adaptation. WollemAI is an official partner of the Partnership for Carbon Accounting Financials (PCAF).



Australia's carbon market, underpinned by the ACCU Scheme, is a key pillar of the country's climate strategy.



Carbon markets and credible corporate claims

ILONA MILLAR, SHARONA COUTTS & TOM WEBB
GILBERT + TOBIN

Introduction

“ Since the mid-2010s, there has been a dramatic increase in the number of companies around the world setting public and voluntary goals to reduce their impacts on the climate.¹ ”

Many of these claims are based on the concept of “carbon neutrality” or “net” carbon emissions. Often, the claims rely partially on the use of credits generated by projects that reduce carbon emissions through activities such as planting (or replanting) vegetation in areas that had been deforested, paying to protect forests that would otherwise have been destroyed, or deploying technologies for less polluting or renewable sources of power. Emitters can buy credits and use them to “net” out some of their own emissions. This potentially allows them to claim responsibility for delivering larger levels of overall abatement than they could claim if they were just relying on the impact of internal decarbonisation activities.

More recently, these claims have come under increasing scrutiny from regulators, consumers and activists. In some cases, the criticism is directed towards the credits themselves, and whether they have delivered on the reductions of greenhouse gas emissions that they promised. Other criticism is levelled at the claims, with concerns raised that emitters may simply be paying to pollute rather than taking actions to reduce their own emissions. A third category of concerns relates to whether companies’ claims—especially in relation to what their emissions will be in the future—are based on reliable and realistic information. “Greenwashing” has become a key legal and reputational risk.

Regulators and litigators have responded, often with investigations and lawsuits. And companies have occasionally responded by reducing their willingness to make public claims (a phenomenon known as “green hushing”), by softening their climate targets, or walking away from them entirely.

But there is a middle ground between greenwashing and green hushing.

Thanks to the work over the last two years of numerous governments, international organisations that are key players in the voluntary global carbon markets, and others, there is now a

KEY POINTS

Greenwashing has become a key legal and reputational risk, and there has been an associated surge of climate-related claims and litigation that challenges the voluntary use of carbon credits as part of net zero and transition strategies.

Concern about legal and reputational risk has been a factor prompting some companies to reduce public commitments (known as green hushing), soften or walk away from their climate commitments.

However, there is a middle ground between greenwashing and green hushing; a robust set of codes can be adopted by those wishing to make credible claims about their climate action, including their use of carbon credits.

These codes ensure that those taking voluntary climate action can do so, while also protecting the legitimate interests of consumers and the public. They will also enable the continued development and maturation of the global carbon markets, which are an essential mechanism to mobilise finance for climate action and associated co-benefits.

The increased convergence on what best practice looks like, is prompting greater alignment among governments, particularly in relation to disclosure frameworks.

Subject to specific circumstances, we would expect that a company would be in a better position to defend greenwashing litigation if it could demonstrate compliance with industry best practices about the types of credits used, and the types of claims made.

¹ See, for example, the final status report from the TCFD, available at Publications | Task Force on Climate-Related Financial Disclosures.

more robust set of codes that can be adopted by those wishing to make credible claims about their climate action, including by use of carbon credits.

This middle ground is important because it could ensure that those wishing to take voluntary climate action can do so, while also protecting the legitimate interests of consumers and the public. And importantly, this middle ground should enable the continued development and maturation of global carbon markets, which are a key mechanism by which finance can be mobilised for climate action and associated co-benefits.

This chapter explores key developments in Australia and internationally that reflect the evolving landscape for organisations voluntarily using carbon credits to meet net zero and sustainability commitments. While these developments present new challenges for business, they also signal the growing convergence of best practice guidance between governments and voluntary standard setters, which will ultimately enhance confidence and transparency within the carbon market.

Carbon credit claims and litigation risk

Carbon credit schemes are recognised as an important avenue for abatement efforts under international law, including under Article 6 of the Paris Agreement, as is discussed further in Chapter 4 of this year's Carbon Market Report.

Many countries and regions have established carbon markets where participants can trade a variety of assets that are generated by reducing or reversing emissions of greenhouse gases. Many of these jurisdictions impose obligations on certain entities to purchase carbon credits, offsets or allowances, depending on a particular entity's own emissions. These are known as "compliance" markets.

By contrast, in the "voluntary" markets, participants—usually corporates—make public statements about their climate-related emissions, and their plans to reduce them over time. These are called "voluntary" claims, and often include the use of carbon credits as part of the emission reduction strategy, especially where it includes a goal to reach "net zero" or "carbon neutrality" by a specific year.

While momentum continues to grow in the development of compliance carbon markets, scrutiny of the claims made by entities has increased, especially within the voluntary markets. The use of carbon credits has been a particular focus of that scrutiny. This is reflected by the surge of climate-related claims and litigation in Australia and internationally that challenge the voluntary use of carbon credits as part of net zero and transition strategies.

These challenges often take the form of allegations that a claim amounts to misleading or deceptive conduct, known colloquially as "greenwashing".

In Australia, financial and competition regulators have listed greenwashing among their key priorities over the past few years.¹ Parliament also scrutinised green claims, with the Senate Inquiry into Greenwashing (Greenwashing Inquiry) considering the nature

of environmental and sustainability claims made by businesses in several key sectors and the impacts of those claims on consumers.²

Strategic litigants have also been active in relation to greenwashing allegations. They have focused on the Australian Consumer Law (ACL) and the potential for sustainability claims to mislead or deceive consumers and/or the public.

For example, the Australian Parents for Climate Action (AP4CA) have launched proceedings against EnergyAustralia alleging that statements about EnergyAustralia's 'Go Neutral' products amount to misleading or deceptive conduct in breach of section 18 of the ACL.³ A critical element of AP4CA's claim is that the carbon neutrality of the Go Neutral products relies on the use of "avoidance" carbon credits, which do not involve removing—"sequestering"—carbon from the atmosphere.⁴

Similarly, the Australasian Centre for Corporate Responsibility's (ACCR) claimed in Federal Court proceedings that Santos has breached misleading and deceptive conduct provisions under the Corporations Act 2001 (Cth) and the ACL, arguing (among other things) that Santos failed to disclose in its annual report the extent to which its net zero strategy depends on carbon credit procurement.⁵ In response, Santos claims that it had a reasonable basis to make its net zero representations based on its understanding of the availability of carbon credits as a result of customer negotiations and the existence of government schemes.

These cases fall within a global trend of greenwashing litigation. We have recently seen a slew of high-profile withdrawals from international climate action initiatives, and while there are several reasons for that backsliding, it is likely that the increased risks arising from greenwashing have contributed.

The question becomes whether it is possible to remain committed to climate action without taking on unacceptable legal and reputational risks.

Mitigating and managing greenwashing risk while still taking action on climate

How can these risks be managed?

We have recently seen the emergence of a range of initiatives to enhance credibility, transparency and integrity in the voluntary carbon markets.

ICVCM and VCMI

The work of the Integrity Council for the Voluntary Carbon Markets (ICVCM) and the Voluntary Carbon Markets Integrity Initiative (VCMI) provides a useful solution.

The ICVCM's work has focused on the integrity and credibility of carbon credits, looking at the activities and entities that together generate carbon credits. This work has focused on the supply side of the carbon markets. After extensive consultation, the ICVCM published the Core Carbon Principles (CCPs),⁶ which are, "ten fundamental, science-based principles for identifying high-quality carbon credits that create real, verifiable climate impact."⁷



The CCPs are:

1. Effective governance
2. Tracking
3. Transparency
4. Robust independent third-party validation and verification
5. Additionality
6. Permanence
7. Robust quantification of emissions reductions and removals
8. No double counting
9. Sustainable development benefits and safeguards
10. Contribution toward net zero transition.

These CCPs are designed to restore confidence in voluntary carbon markets, particularly for potential buyers who may use CCP-labelled credits to support their climate claims. To the extent that credits with CCP labels are incorporated into the market mechanisms of the Paris Agreement,¹ we may be seeing an endorsement of this approach by the international community.

The VCMI has focused on the demand side of the market, by developing the Claims Code of Practice, which sets out steps and requirements for those wishing to make defensible claims about their climate action and impacts.²

Three tiers of claims can be made against the VCMI code: Silver, Gold and Platinum. Before making any claim, a corporate must comply with the "foundational criteria" which are:

- maintain and publicly disclose an annual greenhouse gas emissions inventory;
- set and publicly disclose science-aligned near-term emission reduction targets, and publicly commit to reaching net-zero emissions no later than 2050;
- demonstrate that the company is making progress on financial allocation, governance, and strategy towards meeting a near-term emission reduction target; and

- demonstrate that the company's public policy advocacy supports the goals of the Paris Agreement and does not represent a barrier to ambitious climate regulation.

Corporates must also demonstrate that they have made progress towards their near-term emission reduction targets, and have bought and retired high-quality carbon credits to offset the emissions that they have not been able to reduce through these other actions. The tier of claim is tied to the percentage of their remaining emissions that are offset.

International Organisation for Standardization

Another significant development is the decision by the International Organization for Standardization (ISO) to develop a "net zero standard" to assist organisations in setting credible emissions reduction and net zero targets that can be tested and validated.³ The Net Zero Standard will build on ISO's Net Zero Guidelines launched at COP27, which synthesise best practice guidance from existing initiatives and set clear parameters for the definition of "net zero" and related terms, as well as requirements for making credible claims and reporting on emissions, reductions and removals.⁴ The Net Zero Standard is expected to be published in late 2025 and will help deliver an internationally harmonised approach to net zero.

The role of government and policymakers in supporting credible corporate claims

Governments and policymakers have an important role to play in supporting the net zero transition and corporate commitments. With the increase convergence on what best practice looks like, there is also growing alignment between various government regulations, particularly in relation to disclosure frameworks.

During COP29, the United Kingdom published its principles for voluntary carbon and nature market integrity (VCNM Principles).⁵ The VCNM Principles are designed to support organisations

1 These include ASIC, APRA and the ACCC.

2 Australian Senate Standing Committees on Environment and Communication, 'An Inquiry into Greenwashing' (Web Page) https://www.aph.gov.au/Parliamentary_Business/Committees/Senate/Environment_and_Communications/Greenwashing. After being initially due to report by 5 December 2023, the Senate Committee has been granted its fourth extension of time – until 28 March 2025. It is expected that the report will explore the role of Climate Active and potential amendments that could be made to ensure that the program can effectively support corporate climate action.

3 Australian Parents for Climate Action (AP4CA) v EnergyAustralia (Federal Court of Australia, NSD833/2023); 'Australian Parents for Climate Action v EnergyAustralia', Climate Case Chart (Web Page) climatecasechart.com/non-us-case/australian-parents-for-climate-action-v-energyaustralia/.

4 Australian Parents for Climate Action v EnergyAustralia, Equity Generation Lawyers (Web Page) <https://equitygenerationlawyers.com/case/ap4ca-v-energyaustralia/>.

5 Australasian Centre for Corporate Responsibility v Santos (Federal Court of Australia, NSD858/2021). See: 'ACCR v Santos Media Background - Amended Case', ACCR (Web Page) www.accr.org.au/downloads/accr-v-santos-media-background-amended-case.docx.pdf.

6 Integrity Council for the Voluntary Carbon Market, 'Core Carbon Principles' (Web Page) <https://icvcm.org/core-carbon-principles/>.

7 The Core Carbon Principles | ICVCM.

1 How Article 6 & the CCPs Work Together for Climate Action

2 Voluntary Carbon Markets Integrity Initiative, *Claims Code of Practice* (August 2024) <https://vcmintegrity.org/vcmi-claims-code-of-practice/>.

3 ISO is the global authority for standards across all aspects of technology, management and manufacturing, with 25751 international standards currently in force: <https://www.iso.org/about>.

4 <https://www.iso.org/netzero>.

5 UK Department for Energy Security & Net Zero, 'Principles for voluntary carbon and nature market integrity', UK Government (Policy Paper, 15 November 2024) <https://www.gov.uk/government/publications/voluntary-carbon-and-nature-market-integrity-uk-government-principles> (VCNM Principles)



engaged in discretionary action towards net zero and nature positive transitions, and include:

- using high-integrity credits that are independently validated and verified, in addition to ambitious actions within value changes;
- measuring and disclosing the planned use of credits within sustainability reporting; and
- using best practice guidance in transition planning and target setting.

Similarly, the US government's Voluntary Carbon Markets Joint Policy Statement published in May 2024 supports to end-to-end carbon credit and claim integrity.¹ The statement draws from "existing best practices for credit certification standards", including key concepts from the CORSIA, ICVCM and Article 6 of the Paris Agreement. It remains to be seen whether this statement will be retracted following the change in US government in January 2025.

In Australia, the ACCC has published its *Making Environmental Claims: A Guide for Business* (ACCC Claims Guidance). The ACCC Claims Guidance applies to all entities and persons that offer consumer products or services, outlining basic rules for entities to follow when making environmental claims, such as being direct and open about sustainability transition goals and the measures to achieve those goals, and providing evidence to substantiate the claims that are being made.² While not directly targeted at carbon credits, these rules set out the same fundamental parameters as voluntary guidance—notably, that sufficient evidence is required to effectively categorise and substantiate sustainability claims.

And of course, Australia's marquee program for making voluntary climate claims—Climate Active—has been under review since late 2023.³

The review is geared towards making the program more ambitious, to better integrate it into other Australian government initiatives for climate action, and to improve clarity for consumers.

Key topics of the review include the integrity of both the types and age of any credits used, as well as integrity of the claims that a participant could make under Climate Active.

"Carbon neutral" may not continue to be the key claim, with several submissions to the consultation suggesting an approach more akin to that taken by the VCMI, or indeed, integration of the VCMI Claims Code of Practice. The VCMI's own submission proposed an alignment to their Claims Code of Practice, as well as the incorporation of the Greenhouse Gas Protocol for measuring emissions.⁴

Many responses to the consultation also noted the importance of requiring participants to commit to, and demonstrate, gross emissions reductions as a precondition of eligibility.

These instances of convergence and alignment could make it much easier for corporates to participate in these voluntary programs, by reducing the cost and time required to undertake multiple complex measurement and reporting exercises, which are similar but not the same.

Global uptake of mandatory sustainability reporting

Mandatory sustainability disclosures are quickly becoming a global norm. Reporting frameworks aligned with the International Sustainability Standard Board's International Financial Reporting Standards (IFRS) S1 and/or S2 have been implemented or are in the process of being adopted in more than 30 jurisdictions (including the EU, China, Hong Kong, Singapore and Malaysia), representing over 40% of global market capitalisation.⁵

While there are various nuances between the regimes in each jurisdiction, IFRS aligned disclosures will require disclosure about the planned use of carbon credits in relation to carbon neutral and net zero claims. For example, pursuant to the Australian Sustainability Reporting Standard AASB S2: Climate-related Disclosures (ASRS AASB S2), an entity subject to Australia's mandatory climate-related financial disclosure regime is required to disclose its planned use of carbon credits to offset emissions to achieve any net greenhouse gas emissions targets the entity has set, or any it is required to meet by law or regulation.⁶ In explaining its planned use of carbon credits, the entity is required to disclose the following:⁷

- the extent to which, and how, achieving any net greenhouse gas emissions target relies on the use of carbon credits;
- which third-party scheme(s) will verify or certify the carbon credits;
- the type and characteristic of carbon credit; and
- any other factors necessary for users of general-purpose financial reports to understand the credibility and integrity of the carbon credits the entity plans to use.

The upshot

No doubt, a key question for a company or investor is whether adhering to these new integrity approaches will provide protection against a greenwashing claim or regulatory action.

Whilst the answer will always depend on the specific facts of each case, including the context and purpose for which any claim is made, as a general matter, we would expect that a company would be in a better position to defend any such claim if it could demonstrate compliance with industry best practices about the types of credits used, and the types of claim made.

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1 US Department of Treasury, Voluntary Carbon Markets Joint Policy Statement and Principles (May 2024) <https://home.treasury.gov/system/files/136/VCM-Joint-Policy-Statement-and-Principles.pdf>.

2 ACCC, *Making environmental claims: A guide for business* (December 2023) <https://www.accc.gov.au/system/files/greenwashing-guidelines.pdf>.

3 Climate Active Program Direction Consultation 2023 - Department of Climate Change, Energy, Environment and Water.

4 Climate Active Program Direction Consultation 2023 - VCMI response.1aecf3e9e9d12.pdf, Homepage | GHG Protocol It's important to note that Australia's new mandatory climate reporting regime also integrates the Greenhouse Gas Protocol.

5 'Progress on Corporate Climate-related Disclosures—2024 Report', *IFRS Foundation* (Report, November 2024) 4 accessible at <https://www.ifrs.org/content/dam/ifrs/supporting-implementation/issb-standards/progress-climate-related-disclosures-2024.pdf>.

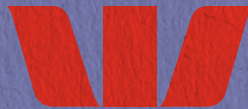
6 Australian Sustainability Reporting Standard AASB S2: *Climate-related Disclosures*, 36(e): https://standards.aasb.gov.au/sites/default/files/2025-01/AASBS2_09-24.pdf.

7 *Ibid.*





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