Carbon Markets
An overview

Carbon Market Institute

What are carbon credits?

A carbon credit is the tradeable component of a carbon market. A carbon credit is a unit generated from a project that either stores or avoids the release of greenhouse gas emissions into the atmosphere. One carbon credit is typically equiavlent to one tonne of carbon dioxide or equivalent gas (tCO_2-e). In Australia, we have the Australian Carbon Credit Unit (ACCU) which is a regulated, tradeable financial instrument.

What is a carbon market?

A carbon market is a market-based solution which puts an explicit value on greenhouse gas emissions and creates a tradeable entity – a carbon credit – for activities that reduce, store or avoid these emissions. Carbon markets can support both compliance and voluntary purchases.

Compliance carbon markets are utilised where government policy requires industry or organisations to reduce their emissions. While best practice compliance involves directly reducing emissions at their source, decarbonisation solutions are not commercially available for all industries. Where these solutions are not available, an entity may meet their compliance obligations by purchasing carbon credits to offset their emissions.

Voluntary carbon markets enable entities not covered by a compliance obligation to invest in climate action, often in line with voluntary climate targets. Voluntary markets are generally governed by third party, non-government verification frameworks.

Why do we need carbon markets?

To slow down and reverse the impact of climate change, the world must decarbonise, by firstly avoiding and reducing emissions from operations and supply chains, and then by offsetting the remaining emissions with carbon credits.

There is also an imperative to invest in carbon projects that draw down greenhouse gases (known as sequestration) beyond the value chain. This can be referred to as beyond value chain mitigation (BVCM) and recognises the ongoing impacts of historic greenhouse gas emissions.

By purchasing carbon credits, an organisation or individual is able to address emissions it is unable to eliminate. For example, the replacement of fossil-fuel driven energy production is one way to significantly reduce emissions, however carbon credits may be used for some emissions that are hard-to-abate, or to compensate for historic emissions.

By putting a price on greenhouse gas emissions, carbon markets encourage businesses to find ways to reduce their emissions. Carbon markets - and their associated reporting standards - provide a framework to meet climate targets, while also providing the opportunity to link with international markets. Research has shown that companies that engage in carbon markets are more likely to invest in direct emissions reductions where there is available technology.[1,2] This is because by purchasing carbon credits, organisations quantify their emissions and effectively adopt an internal price on pollution. In turn, this financially incentivises behaviours that reduce polluting activities.

The Australian carbon market

The Australian carbon market is referred to at the Australian Carbon Credit Unit (ACCU) Scheme, which is a legislative framework enabled by the Carbon Farming Initiative (Carbon Credits) Act 2011, and Rule 2015. The ACCU Scheme is administered by the Clean Energy Regulator, with demand for ACCUs coming from both compliance and voluntary sources.

Compliance demand

The Safeguard Mechanism is the primary compliance demand source for ACCUs. The Safeguard Mechanism is a framework, which covers Australian facilities with annual scope 1 emissions greater than 100,000 tCO2-e. In 2022 the government consulted on reforming the Safeguard Mechanism into a baseline and credit system with steeper annual decline rates.

In July 2023 these reforms came into effect, which included the introduction of:

- A 4.9% annual decline rate on the annual emissions baseline
- Safeguard Mechanism Credits (SMCs), which facilities can earn if they reduce their emissions bellow the decline rate

If a facility exceeds the emissions baseline for a financial year, they can use ACCUs to meet 30% of their compliance obligation. If a facility needs to use further ACCUs to meet this obligation, they must disclose why further onsite abatement was not taken.

Facilities who may not be able to meet their compliance obligation can also:

- Apply to borrow from a future baseline
- Apply to receive an adjusted baseline as a trade-exposed baseline-adjusted (TEBA) facility
- Apply to extend their baseline to a multi-year monitoring period

[1] Ecosystem Marketplace, 2023, All in on Carbon: The Role of Carbon Credits in Achieving Corporate Climate Strategies

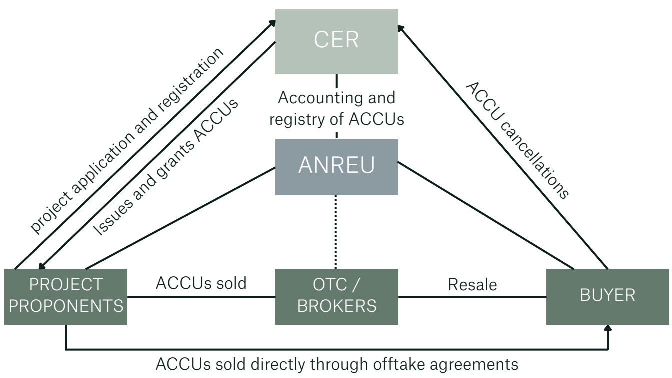
[2] MSCI, 2024, Corporate Emissions Performance and the Use of Carbon Credits

Voluntary demand

ACCUs and other types of carbon credits can also be voluntarily purchased by Australian entities without compliance obligations to meet their own emissions reduction commitments. These transactions represent voluntary demand, and are encompassed by the voluntary carbon market.

In Australia, the Government's Climate Active program provides a framework for organisations to manage their emissions through emissions reductions and offsetting remaining emissions through the purchase of ACCUs. These ACCUs must be voluntarily surrendered, which means they are cancelled in the Australian National Registry of Emissions Units (ANREU) and cannot be used again.

Figure 1: ACCU Scheme Function



Integrity in the Australian market

As a result of the growing public spotlight on carbon markets & their role in climate action, there is increased scrutiny on markets and crediting as a decarbonisation tool. The integrity of carbon credits and matters for everyone across the carbon supply chain. In response to integrity concerns regarding the ACCU Scheme, the Australian Government commissioned an Independent Review of the ACCU Scheme in 2022, led by former Chief Scientist Professor Ian Chub AC. Professor Chubb found that the ACCU Scheme was largely "sound" and functioning as intended, but made 16 recommendations to improve it. The Government accepted all recommendations, and is current implementing them. A significant change was moving the method development process to an EOI process overseen by DCCEEW and ERAC, with the CER solely responsible for Scheme regulation.

Some Australian state, territory and local governments have also made commitments to reduce or offset their emissions. Buyers of ACCUs in the voluntary market are often also interested in the environmental, economic and social & cultural co-benefits associated with the carbon project.

International carbon markets

The Paris Agreement is a landmark international agreement to combat climate change, established under the United Nations Framework Convention on Climate Change (UNFCCC) in 2015. The Paris Agreement contains an agreement to achieve net zero emissions by 2050, and keep global warming well below 2°C, ideally under 1.5°C. Signatory countries (Parties) submit and implement Nationally Determined Contributions (NDCs): emissions reduction targets for half decadal periods. Article 6 of the Paris Agreement establishes a new global carbon market (PACM) to support the achievement of NDCs as well as voluntary action. The PACM replaces the Clean Development Mechanism (CDM), established under the Kyoto Protocol, to support the international trading of carbon credits.

To support domestic emissions reductions, but also to enable participation in the PACM, there are a number of functioning carbon markets around the world at both a regional, national and sub-national level. Domestic carbon markets include the EU Emissions Trading Scheme (ETS), New Zealand ETS, Chinese Certified Emissions Reduction Program, Japanese Joint Crediting Mechanism and Californian Cap and Trade respectively. Each of these markets is created through environmental policy related to climate change that establishes a demand side and a supply side of the market to achieve emission reduction targets.

In addition to government-based carbon markets, there are also international schemes and initiatives that support and make up the voluntary carbon market (VCM). Initiatives such as the Gold Standard, Verra (previously known as the Verified Carbon Standard) and the Architecture for REDD+ Transactions (ART) develop methods for use in the voluntary carbon market, and provide an administrative framework for projects.

The Voluntary Carbon Market Integrity Initiative (VCMI) and the Integrity Council for the Voluntary Carbon Market (IC-VCM) have established frameworks to support integrity in the VCM. VCMI has developed its Claims Code of Practice to support corporates and governments to use carbon credits as part of their decarbonisation strategies. Meanwhile, the IC-VCM has developed the Core Carbon Principles:10 principles to support integrity at a project and method level.

Similarly to the ACCU Scheme, these initiatives set the standards and governance requirements for carbon projects regarding the reduction, storage or avoidance of greenhouse gas emissions.

More Information

Carbon Farming Industry Roadmap https://carbonmarketinstitute.org/australian-carbon-farming-industry-roadmap/

Safeguard Mechanism FAQs https://carbonmarketinstitute.org/safeguard-mechanism-reform/

Australian Carbon Credit Unit Scheme https://cer.gov.au/schemes/australian-carbon-credit-unit-scheme

Explainer: Integrity Measures in the ACCU Scheme https://carbonmarketinstitute.org/app/uploads/2025/07/Integrity-Measures-in-the-ACCU-Scheme-1.pdf

Article 6 Factsheets https://carbonmarketinstitute.org/resource-category/article-6/