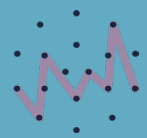




Considerations for future ACCU supply & demand
market brief
June 2023



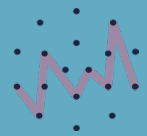
Executive Summary

High-integrity Australian Carbon Credit Units (ACCUs) from greenhouse gas emission avoidance, reduction or removal projects are an important tool for achieving Australia's 2030 emission reduction targets. They have been the focus of the previous government's Emission Reduction Fund (ERF), assisting companies to meet compliance requirements under the Safeguard Mechanism and are used by companies and state and territory governments in voluntary carbon reduction investments. They will be an important complement to industrial decarbonisation under the recently enhanced Safeguard Mechanism and can assist investment in emissions reduction and land management benefits outside the industrial sector. Longer term, they will also remain important in neutralising residual emissions from strategic and hard-to-abate sectors of the economy and driving net negative emissions. This paper looks at current and projected sources of supply and demand for ACCUs, as well as trends in ACCU use forecasted to result from systemic reforms over the coming years.¹

Overview of Policy Context

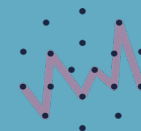
Australia's carbon crediting framework was established in 2011 with the commencement of the Carbon Pricing Mechanism (CPM), whereby companies were able to purchase ACCUs to meet some of their CPM obligations. Since 2015 the ERF utilised this framework for government crediting and purchasing of emissions reductions. The scheme has been overseen by the Clean Energy Regulator (CER), the government body responsible for administering legislation for reducing greenhouse gas emissions and increasing clean energy use. Following a change of government after the May 2022 federal election, the Labor Government is transitioning Australia's carbon crediting framework away from the approach set out under the previous ERF and is now implementing the climate policy suite outlined in its 'Powering Australia' plan. We refer to Australia's carbon crediting framework in this paper as the ACCU scheme.

The ACCU scheme allows organisations and individuals that adopt new practices and technologies that reduce their emissions to generate and sell ACCUs. The scheme has overseen a range of emissions reduction and avoidance activities. To earn ACCUs, organisations and individuals implemented these activities in accordance with project guidelines and rules known as methodology determinations, or methods. Methods set out how a particular activity or project type must be undertaken, how emissions reductions are calculated, and the monitoring and reporting requirements for creating an ACCU. One ACCU should be generated for every tonne of carbon dioxide equivalent (tCO₂-e) calculated to have been avoided or removed from the atmosphere.



Key Findings

- Australia's potential supply of ACCUs from land-based projects has been estimated to range from a highly ambitious, and potentially unrealisable, 1,300 Mt per year by 2050 to a conservative scenario of 37 Mt per year by 2030.
- There is currently a broad range of supply sources for ACCUs, which has seen the domestic Australian carbon market grow steadily since 2011. There was 11.4 Million (M) land-based ACCUs issued in 2022 (deemed equivalent to 11.4 Mt), suggesting growth in supply has slowed in recent years, and a risk of potentially achieving even the most conservative scenario.²
- Demand sources for ACCUs are set to step up as a result of the passing of the Safeguard Mechanism reforms, as well as future state and territory commitments, and corporate and individual voluntary purchasing strategies.
- Key factors determining supply levels will be the implementation of the Independent Review of ACCUs (or 'Chubb Review') recommendations, progress of method development, as well as the likely market impacts of changes of government policy in managing carbon abatement contracts (CACs).
- Ultimately, the data available reflects a level of uncertainty about market supply and demand over the next few years, suggesting the need for caution with current forecasting and appropriate policy, method development, regulation and strategic government funding to ensure supply of high integrity ACCUs is not taken for granted.
- The Australian Government's role in the market will continue to be important but will need to adjust with increasing private investment. While demand from the Safeguard Mechanism reforms may be a demand driver to generate new supply of ACCUs, appropriate policy and method development, regulation and strategic government funding (particularly for co-benefits) will be crucial to ensure an adequate supply of high integrity ACCUs.



Current Supply of ACCUs

ACCU project registrations³ and supply of ACCUs has grown steadily since the ACCU crediting framework was established under the former CPM in 2012. ACCU issuance grew to a cumulative total of 15.4 M ACCUs issued by 2014, jumping to 68.8 M by 30 September 2019, with the total sitting at **124.2 M** as at 2nd February 2023.⁴

The Clean Energy Regulator's (CER) Quarterly Carbon Market Report (December 2022) highlights this trend in ACCU issuance growth, reporting that in 2022, a total of **17.7 M** ACCUs were issued: a 4.1% increase on 2021 total issuances of **17M**. This compares to **16 M** ACCUs issued in 2020. In 2023, total ACCU issuances are predicted to exceed **18 M**.⁵ These figures relate to total ACCUs issued for all methods.

However, there are indications of a reduction in the rate of growth of new project registrations, which will likely affect future ACCU issuance figures – from a high of 122 in Q1 2022 lowering to 83 in Q4 2022, to 71 in Q1 2023, with the CER noting in its December report *“the increase [in annual ACCU supply] in 2023 looks like being much less (than during 2017–21)... The reason for this apparent deceleration is not clear and could reflect uncertainty in the market in the face of dynamic policy settings.”*

As at January 2023, there were approximately **22.7 M** surplus ACCUs in ANREU accounts in December 2022⁶ (not including ACCUs delivered to the Government under CACs; ACCUs cancelled under the former Carbon Pricing Mechanism or under the Safeguard Mechanism (SGM); or voluntary ACCU cancellations or other ACCU relinquishments). Successive CER Quarterly Reports show that this number continues to grow.

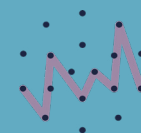
The surplus ACCUs held from January 2021 – December

2022 also increased month-on-month, from a total of approximately **8 M** in January 2021 to **22.7 M** in December 2022.⁷ However, it should be noted that a surplus of ACCUs does not necessarily indicate liquid supply. While a surplus of ACCUs may exist at any one time, only a proportion of these may be available to trade on the secondary market. For example, surplus ACCUs may be unavailable if the ANREU account holder has scheduled these for cancellation on behalf of a buyer. It is also likely that some surplus ACCUs are being held or banked, possibly to service future demand. As part of the SGM reforms, the Government will publish disaggregated ANREU account holdings of ACCUs and SMCs.⁸ Whether this measure will apply to all ANREU accounts or a certain subset (for example, just ANREU accounts of a certain size or for SGM liable entities) is yet to be determined. Another measure that could reduce the volume of surplus ACCUs and limit banking practices to a degree is a vintage limitation under the SGM that restricts use of ACCUs to a certain number of years from issuance.⁹

ACCU have historically traded at higher prices than international voluntary credits in Australia, and this situation will likely continue as private sector compliance demand for offsets increases under the Safeguard Mechanism (SGM), because international carbon credits cannot currently be used for purposes of SGM compliance. It is estimated that Safeguard Mechanism credits (SMC) will be scarce at the start of SGM implementation,¹⁰ potentially leading to increased demand for ACCUs in the initial period. Market analysts project strong demand for ACCUs and higher premiums continuing throughout the next decade, particularly for SGM compliance purposes.¹¹

Current ACCU projects

ACCU project registrations have grown steadily since the market first launched in 2012. The below data reflects

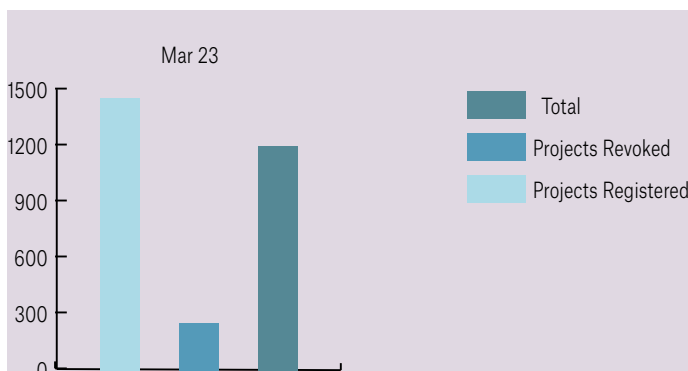


growing confidence in the market, particularly following policy reforms at the federal level, however, also demonstrates a recent slow-down in project registrations during Q3 2022 to Q1 2023.

Some key CER figures and data are provided in **Attachment A**, including new registered projects per method type, Q1 2019 to Q1 2023 (**Table 1**) and ACCU holdings by market participation, Q1 2018 to Q1 2023 (**Table 2**).

Despite the long-term historical growth in registrations up to this point, this indicates the possible start of a slower or negative growth phase unless there are some substantial reforms and implementation measures put

in place to enable the registration of new projects and methods that can yield ACCUs into the future.



ACCU project registration numbers over time:

- 278 projects by end of 2014,
- 786 projects by end of 2020;¹² and
- 1,558 as at 13 June 2023.¹³

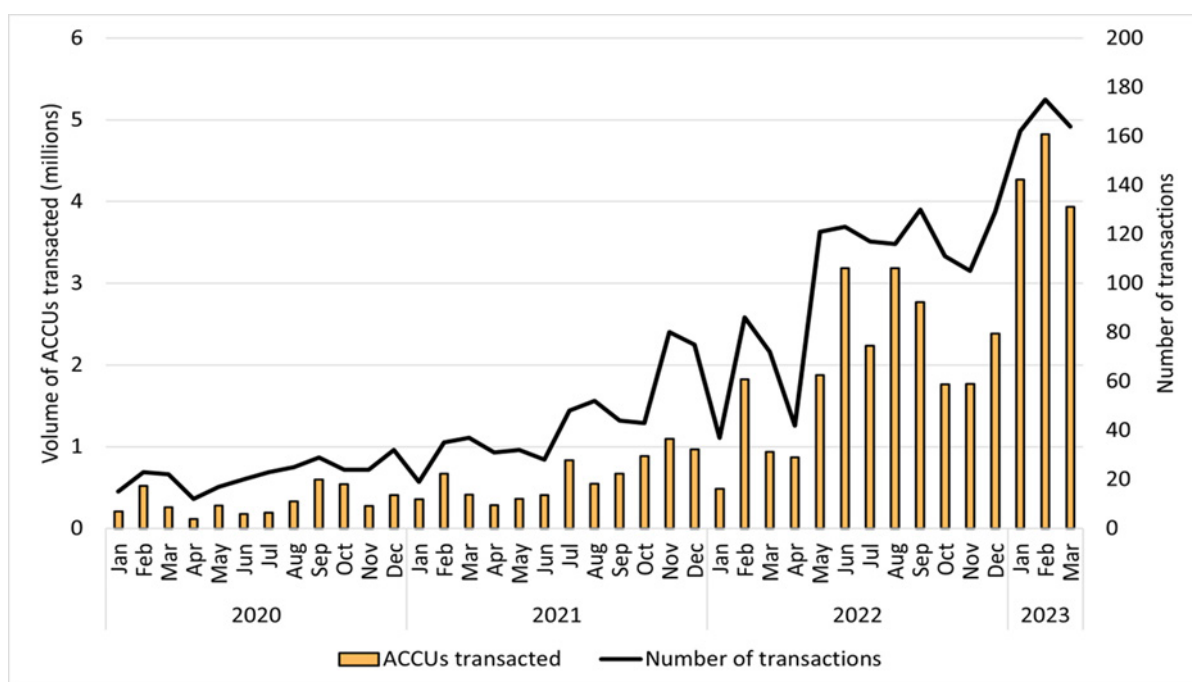
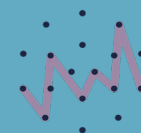


Chart 1: Current ACCU market transactions, as at March 2023. Source: Emissions Reduction Fund project register.

Chart 1 and other CER data¹⁴ (some of which is extracted in **Attachment A**) show:

- the number of ACCUs issued since the scheme began has been dominated by vegetation, waste and savanna fire management projects;
- there were 8.4 M ACCUs transacted in the secondary market in Q3 2022, more than four times the amount in Q3 2021 (approximately 2 M), and there were approximately 13.5 M ACCUs transacted in the secondary market in Q1 2023, almost double the amount transacted in Q3 2023;
- since 2021, there have been steep increases in ACCU holdings by parties not connected to a project. For example, intermediaries who are trading ACCUs in the secondary market; and
- as noted above, there appears a recent reduction in the rate of growth in new project registrations.



Future supply of ACCUs

A number of scenarios of potential ACCU supply have been developed (see below) with estimates of annual supply from land-based projects between 37 Mt per year and several multiples of that, depending on the time frame and technological developments. This section outlines the details of these different research sources.

One of the most notable forecasts came from a CSIRO report in 2022 (**Fitch report**), which looked at the potential for future net emissions reductions in Australia, through avoided and negative emissions; costs and risks; and novel technologies that may have the potential to deliver enhanced net emission reductions over the next 5–10 years.¹⁵ The report distinguishes between ‘**technical potential sequestration**’ (which would be possible if economic feasibility or competition for resources were ignored) and ‘**economic potential sequestration**’ (economic feasibility of implementing).

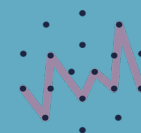
The report estimates a **technical potential sequestration of 480 M tonnes (Mt) of CO₂-e per year** (Mt per year) (permanent plantings),¹⁶ **630 Mt per year** (plantation and farm forestry);¹⁷ **60 Mt per year** (HIR);¹⁸ **9.2 Mt per year** (avoided deforestation);¹⁹ **6 Mt per year** (savannah fire management);²⁰ and **115 Mt per year** (soil carbon) by 2050.²¹ This amounts to **1300 Mt per year on a 25-year annual average basis**.

It also estimates ‘**2050 Economic Potential**’ at **16 Mt per year** (permanent plantings), **32 Mt per year** (plantation and farm forestry), **39 Mt per year** (HIR), **7.7 Mt per year** (avoided deforestation); **6 Mt per year** (savannah fire management) and **5–29 Mt per year** (soil carbon).²² This amounts to **129 Mt per year on a 25-year annual average basis** (using upper estimate for soil carbon).

The report notes ‘**actual sequestration**’ for the period of 2010–20 (based on reporting from the Australian Annual National Greenhouse Gas Inventory) is **2.1 Mt per year** (permanent plantings), **11.5 Mt per year** (plantation and farm forestry), **20 Mt per year** (HIR), **2.3 Mt per year** (Avoided Deforestation), and **0 Mt per year** (soil carbon). This amounts to **35.9 Mt per year for this period**.²³ Additionally, Savanna fire management had abatement of **5.6 Mt per year** for the period 2016–20.²⁴

Older CSIRO reports estimate Australia could offset up to **513 Mt per year** between 2031 and 2050 using afforestation and reforestation, in scenarios where strong global action to mitigate climate change prevails. However, this would require considerable disruption to conventional agriculture methods (particularly livestock grazing): which if fully exploited, would mean devoting between 25 per cent and 50 per cent of national water use to these activities, and between 22 M and 63 M hectares of land.²⁵ Reaching this maximum would require a global carbon price in 2050 of \$285 per tonne to make offsetting *five times* more valuable than maintaining current agricultural production patterns on the same land. This figure does not include the potential economic cost of negative environmental impacts such as reductions in surface water flows.²⁶

A report by CSIRO and the Gas Industry Social and Environmental Research Alliance (GISERA)²⁷ was prepared for the purpose of assessing ‘feasible options’ for offsetting life cycle GHG emissions from onshore shale gas extraction in the Northern Territory (NT), specifically from the Beetaloo Sub-basin, between 2025–50.²⁸ Using data from the Fitch report, the authors conclude “from an engineering perspective,” emissions from a ‘modestly-sized’ fracking industry in the Beetaloo Sub-basin «are able to be completely mitigated or offset within Australia». They assume that 10% of the annual



economically feasible, potentially available land-based offsets in Australia at a carbon price of \$30/tonne CO₂e could be used to offset this one project, as well as 30% of available offsets from fire management in Northern Australia.²⁹

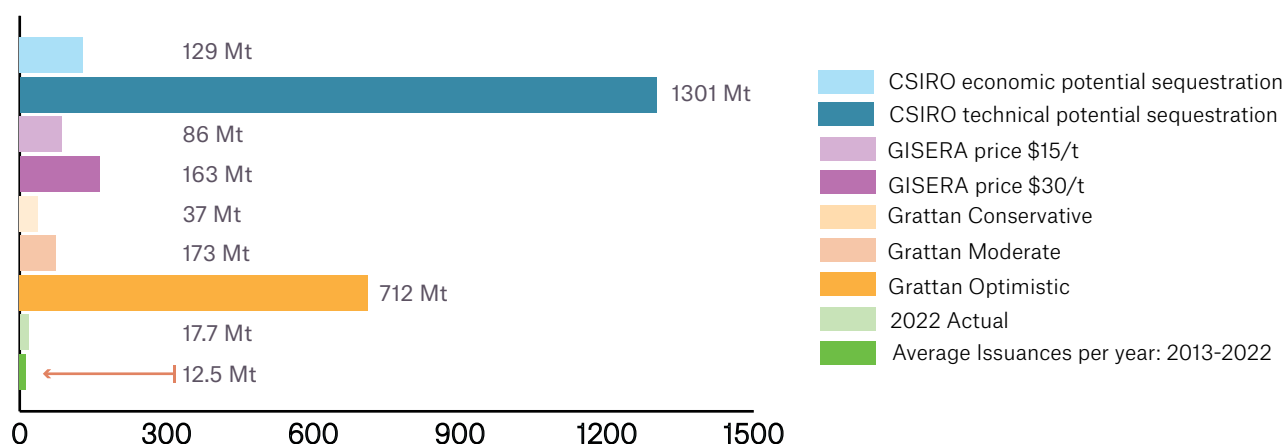
Additional estimates in the GISERA report predict that with a carbon price of \$15 per tonne, total land-based abatement possible under the ACCU scheme could be approximately **86 Mt per year**, but increasing the price to \$30 per tonne would result in an 'economically feasible' annual abatement of **163 Mt per year**.³⁰ The report estimates that the HIR, plantation forestry and soil carbon sequestration methods have the most potential for scalability at carbon prices > \$30/t.³¹ However, this report has been criticised as too optimistic; for not taking into consideration real implementation barriers; relying on unproven technology; not considering other sources of demand for ACCUs; and potential supply issues with Indigenous and other credit providers not supportive of the Beetaloo project.³²

The Grattan Institute also conducted a literature review of key offset technologies, and Australia's capacity to produce offsets.³³ Starting with 'maximum potentials',

they apply heavy discounts for conservative and moderate scenarios — **712 Mt/y** as an 'upper limit' estimate for reforestation, direct air carbon capture and storage, soil carbon, fire management and blue carbon projects; **73 Mt/y** for a 'moderate scenario' and **37 Mt/y** for a 'conservative scenario'.³⁴ The moderate and conservative scenarios consider what would be required to achieve the maximum potential afforestation, that is, 'far-reaching technological and social changes, high carbon prices, overcoming logistical hurdles, or all of the above' which may be socially, physically and economically impossible.³⁵

ClimateWorks Centre provides further estimates that carbon forestry on over 50 M hectares of land (around twice the area of Victoria) would be needed to achieve abatement of **137 Mt** (which is estimated to be required if Australia is to meet a carbon budget for a 1.5 degree pathway). ClimateWorks has not modelled whether this level of abatement is socially, physically or economically possible.³⁶

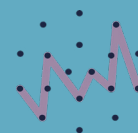
These varying sources provide an obtuse picture of future supply overall, and with the CER's most recent December Quarterly Carbon Market Report reflecting a potential slowing in supply, along with other dynamics affecting



Estimates are yearly supply in Mt CO₂-e between 2025 and 2050, unless stated otherwise.

Chart 2: Projected annual ACCU supply

Note: ACCU supply estimates in Chart 2 are from land-based methods with the exception of '2022 Actual' and 'Average Issuances per year: 2013-2022', which are total ACCUs issued from all methods.



the market,³⁷ there is a real risk of failing to achieve even the most conservative of scenarios outlined above.

Integrity Issues and ACCU Framework

Implementation of the recommendations made by the Independent Review of ACCUs,³⁸ including improved transparency,³⁹ changed governance arrangements, and greater scrutiny and changes to how existing and future methods are developed and implemented, must be considered when estimating future ACCU supply.⁴⁰

In June 2023, the Australian Government released an ACCU Implementation Plan which outlines the timing and approach to fulfill the reforms recommended in the review. This process will need to be closely monitored and resourced to ensure a transition that supports the future supply of high-integrity credits.

However, this process will take some time, and how quickly method reforms can be implemented will be important to mitigate risk of restrictions on supply or additional discounting guardrails under the SGM scheme.

There has been particular criticism of some methods and the amount of crediting of ACCUs under them by CER – the Human Induced Regeneration (HIR), Avoided Deforestation and Landfill Gas methods (accounting for 75% of the scheme).⁴¹

The review did not accept all the criticism or claims made, finding that the level of abatement had generally not been overstated and that the ACCU regime is ‘sound’. However, it made 16 recommendations to improve governance, transparency, and integrity arrangements. This was supported by independent scientists and scientific organisations, including the Australian Academy of Science, CSIRO and the Wentworth Group of Concerned Scientists.⁴²

There are other factors that could increase supply of ACCUs, such as resourcing and timely treatment of existing and new methods, and including changes to the way methods are approved, audited and implemented. Method development typically takes a couple of years, in addition to the 3-5 years to setup a project.

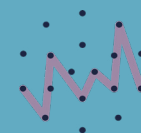
The ‘sunsetting’ or phasing out of existing methods without any replacement methods will also detrimentally affect supply. For example, the HIR method sunsets on 1 October 2023 and there is a potential new method in the form of the Integrated Land Management Method. However, specific details on how and when the new method will be assessed and approved are yet to be made available and are urgently required to minimise supply impacts in the next few years.

Furthermore, changes to better implement best practice Free Prior and Informed Consent (FPIC) may further affect the supply if not managed properly. By removing conditional registration provisions from the CFI Act, as recommended by the ACCU Review, it may take longer for projects to be registered – however the details of this process are still to be determined. This will need to be monitored and better resourced going forward.⁴³

Implementation of the Chubb Review recommendations will continue to be critical to the supply of future ACCUs in order to restore market confidence and investment. This may mean, for example, the investment outlook is curtailed for some methods – and as a result, investment will need to be redirected in order to support an adequate supply of these high integrity ACCUs.

Demand for ACCUs

In 2020-21, Australian Government purchases through the ERF represented 89 per cent of ACCU demand, while the remainder of the market was made up of voluntary de-



mand (about 6 per cent), compliance with the Safeguard Mechanism (0.5 per cent), and speculators or buyers on the secondary market for other purposes (the remainder).⁴⁴ However, these previously alternate sources of demand are expected to increase in future.

Implications of the Safeguard Mechanism reform

As baselines are lowered under the strengthened Safeguard Mechanism, facilities will face a significant obligation to cut absolute emissions, which will grow over time as safeguard baselines decrease by 4.9 per cent every year.⁴⁵

For those facilities that cannot feasibly reduce on-site emissions immediately until relevant technologies become economically viable, they will be required to source and purchase ACCU offsets and/or Safeguard Mechanism Credits to remain compliant.

Recent modelling indicates that under the proposed reforms, net emissions of Safeguard facilities will fall from a projected 143 Mt CO₂-e in 2022–23, to no more than 100 Mt by 2030.⁴⁶ While exactly how much of this would come from offsets is to be determined, ACCUs are likely to occupy a significant portion of this new demand in the early stages when the volume of Safeguard Mechanism Credits is low and as decarbonisation investments ratchet up.

State-led ACCU demand

Projects in all states and territories continue to be issued ACCUs in line with approved Emission Reductions Fund carbon farming methods. To date, New South Wales and Queensland have been issued the majority of ACCUs, owing to their natural geographical resources as well as strong carbon farming initiatives and tools. The figure to the right illustrates the change in the number of ACCUs

issued across the jurisdictions across 2021 and 2022.

New compliance obligations introduced by state and territory governments could further amplify ACCU demand. For example, the NSW Government's updated Electricity Infrastructure Regulations require new grid firming infrastructure to offset a portion of emissions using ACCUs from NSW-based projects.⁴⁷

The additional ACCU demand will initially be determined by the overall emissions intensity of NSW energy production but will cover all scope 1 emissions from infrastructure, such as pumped hydro, batteries and gas generators beyond 2036.

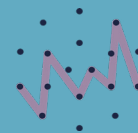
Voluntary demand

Voluntary certification programs like Climate Active and consumer preference toward businesses with clear climate ambition are continuing to increase voluntary action and the demand for ACCUs. As a result, non-commonwealth demand has more than tripled since 2018 to 1.5 million in 2022, which was up 56% year on year.⁴⁸

Specifically, cancellations made against organisational emissions or energy targets comprised 58% (855,000 ACCUs) of volume in 2022 [13]. While local, state and territory government cancellations didn't account for any of this in 2022, this is expected to increase as these jurisdictions work towards their emissions targets.

Carbon Abatement Contracts

The likely market impacts of the Australian Government's policy changes in managing Carbon Abatement Contracts (CACs) will be significant, and potentially contradictory to the policy intent to create a strong private market. If contractors are unable to exit CACs, or choose



not to, there is a risk that ongoing secondary market supply of ACCUs will significantly decrease. With insufficient supply in the secondary market, this could result in steep increases in the ACCU spot price, although this also depends on supply of new projects and demand for ACCUs from other sources.

Conclusion

Australia's potential total supply of ACCUs under land-based methods up to 2050 has been estimated by various sources – from a very unrealistic 1,300 Mt CO₂-e per year (CSIRO Technical) to 129 Mt CO₂-e per year (CSIRO Economic) to 37 Mt CO₂-e per year (Grattan Conservative) by 2050. This is compared to total ACCUs issuances in 2022 of 17.7 Mt CO₂-e of which almost two thirds, 11.4M, were from land-based methods.

There is currently a broad range of supply sources of ACCUs, which has seen the domestic Australian carbon market grow steadily since the start of the ACCU scheme in 2011. However, growth in supply has slowed in recent years and is due to slow further given the implementation of ACCU Review recommendations, policy uncertainty and other factors.⁴⁹

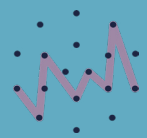
Implementation of ACCU Review recommendations is critical to renewed growth in the generation of high integrity carbon credits. Implementation of enhanced transparency and assurance as well as auditing requirements are welcomed. Along with the enhancement of the existing Emissions Reduction Assurance Committee and establishment of the proposed Carbon Abatement Integrity Committee (CAIC), the “sound” ACCU framework can be backed with investor and community confidence.

There is urgency in this due to time lags in the system

– after a method is made, it will typically be at least 2 years (and often much longer) before any new ACCUs are issued under a project once it is registered. Projects are also often 3 – 5 years in development, given lead times needed to negotiate with landholders and eligible interest holders including native title bodies and banks.

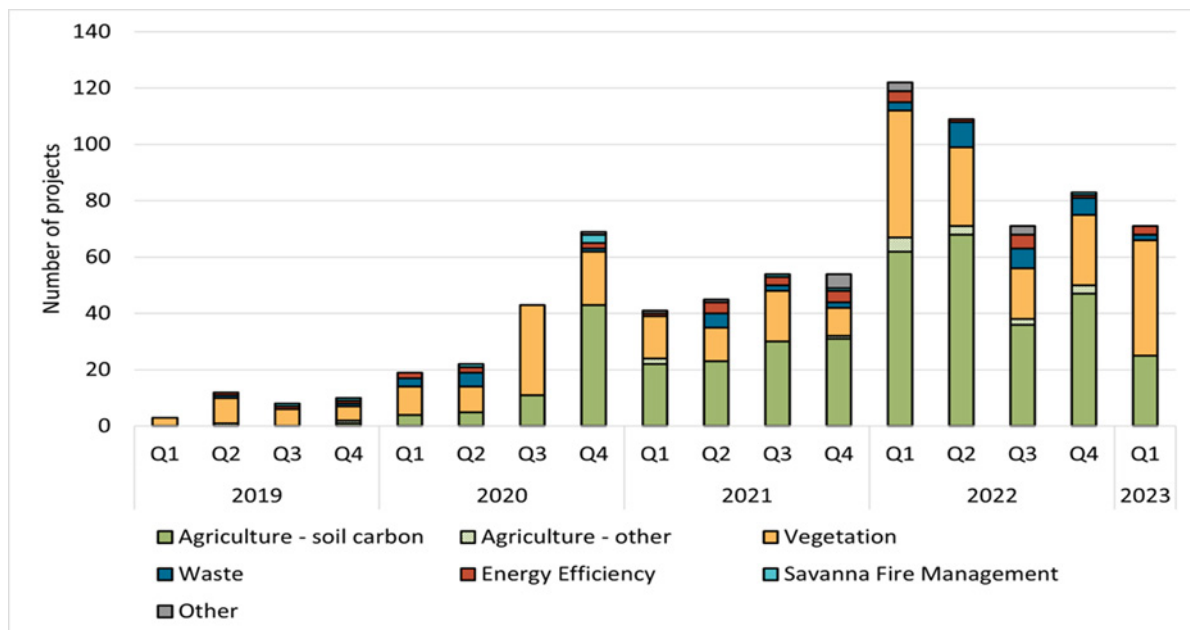
Demand for ACCUs is set to steeply rise as a result of the enhanced Safeguard Mechanism, compliance obligations for new coal and gas projects, future state and territory commitments and corporate and individual voluntary purchasing.

Ultimately, the data available reflects a level of uncertainty about market supply over the next few years, suggesting the need for caution with current forecasting and appropriate policy, method development, regulation and strategic government funding, to ensure supply is not taken for granted.



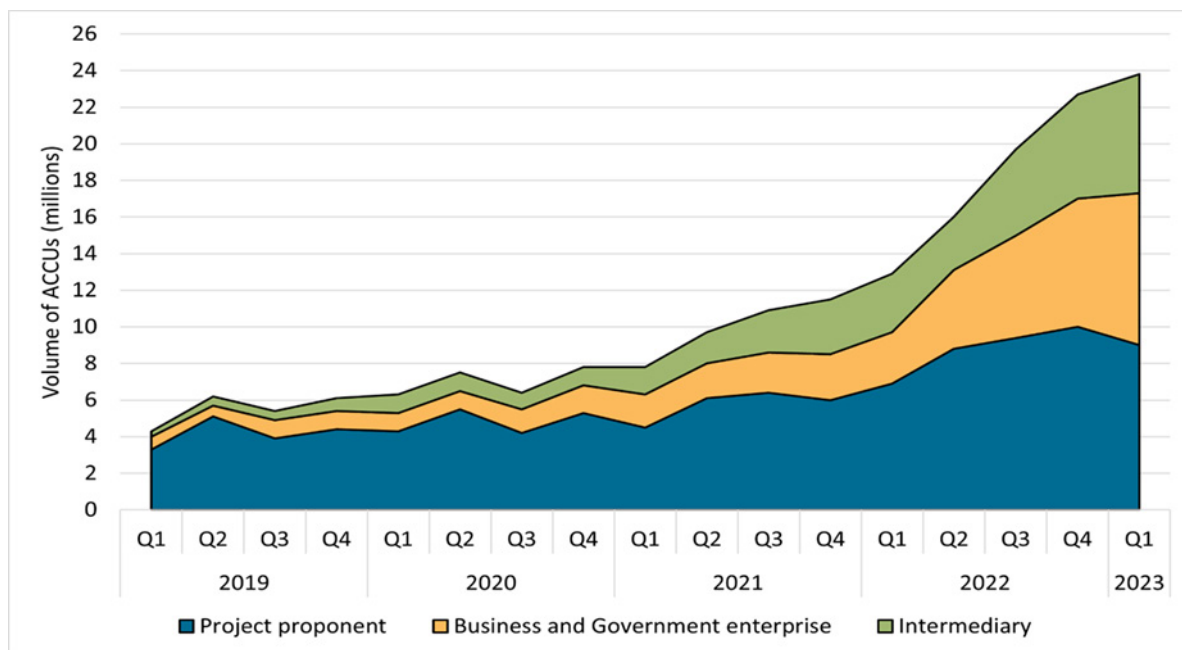
Attachment A – Clean Energy Regulator data⁵⁰

Table 1 – New registered projects per method type, Q1 2019 to Q1 2023



Source: Clean Energy Regulator. *2019–23 data as at 13 June 2023

Table 2 – ACCU holdings by market participation, Q1 2019 to Q1 2023

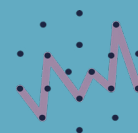


Source: Clean Energy Regulator. *2019–22 data as at 13 June

Project proponent = Account holder connected to one or multiple ERF projects

Business and Government enterprise = Account holders that do not have direct link to ERF projects

Intermediary = Account holder's primary operation is to facilitate trading of units between the supply and demand sides of the market. Also includes accounts who have accumulated ACCUs through the secondary market without known scheme obligations, offset use, or carbon trading/offset services.



Attachment B - Glossary of terms

ACCU - Australian Carbon Credit Unit. Each ACCU is intended to represent the abatement of a tonne of carbon dioxide equivalent.

CFI Act - *Carbon Credits (Carbon Farming Initiative) Act 2011 (Cth)*

Chubb Review - The Australian government appointed an independent panel chaired by Professor Ian Chubb AC (Chair) to review the integrity of ACCUs under Australia's carbon crediting scheme - public consultation occurred from 29 August - 26 September 2022. The Panel examined governance arrangements and legislative requirements of the carbon crediting scheme, as well as the integrity of the key methods used, and other scheme settings affecting the integrity of ACCUs. It considered the broader impacts of carbon projects, including for agriculture, biodiversity, participation of First Nations people, and regional communities. The Panel concluded that the ACCU scheme arrangements are essentially sound, incorporating mechanisms for regular review and improvement, and recommends a number of changes to clarify governance, improve transparency, facilitate positive project outcomes and co-benefits, and enhance confidence in the integrity and effectiveness of the scheme. The Australian Government has responded to the independent Review of ACCUs, accepting all 16 recommendations in principle.

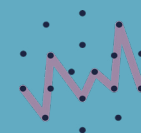
Carbon Pricing Mechanism (CPM) - The CPM preceded the Emissions Reduction Fund (ERF) - it was the overarching framework for Australia's carbon markets prior to 2015. The CPM was an emissions trading scheme that put a price on Australia's carbon pollution. It was introduced by the *Clean Energy Act 2011* and related legislation and applied to Australia's biggest carbon emitters (called liable entities). Under the mechanism, liable entities had to pay a price for the carbon emissions they produced in the 2012-13 and 2013-14 financial years. This covered approximately 60 per cent of Australia's carbon emissions including from electricity generation, stationary energy, landfills, wastewater, industrial processes and fugitive emissions. The carbon pricing mechanism covered a range of large business and industrial facilities. The carbon pricing mechanism was repealed, with effect from 1 July 2014.

CER - Clean Energy Regulator

Carbon Abatement Contract (CAC) - A CAC is an agreement between the government (purchaser) and a seller of ACCUs. Most CACs are entered into with agreed prices and have been in place since 2015. There are two kinds of CACs:

- Optional Delivery - provides the right, but not the obligation, to sell carbon abatement to the Government at an agreed price within a set time; and
- Fixed Delivery - requires a contractor to provide a set number of ACCUs at a set price for the duration of the contract and can be exited if damages are paid

Emissions Reduction Fund (ERF) - Refers to both to the \$1.55 billion government fund established by Prime Minister Tony Abbott 2014 as the principal emission reduction policy mechanism after the dissolution of the CPM. It was topped up by an additional \$1.9 billion commitment by Prime Minister Morrison in 2019. It operated as a reverse voluntary auction. The ERF was supplemented by the Safeguard Mechanism so named to protect those public taxpayer



funds. The ERF also became the shorthand for the ACCU legislative and crediting framework generating and assuring ACCU methods and supply. The ERF credited abatement delivered through projects undertaken in accordance with approved abatement calculation methods.

Fixed CAC exit arrangements – an optional pathway to satisfy contractual obligations for fixed delivery contracts where the seller makes an exit payment instead of delivering ACCUs for the contracted price.

Free prior informed consent (FPIC) – Included in The Declaration on the Rights of Indigenous Peoples, it is a consent given based on accurate, clearly communicated information, and provided before a project or a decision has gone ahead on a project.

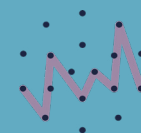
Land-based projects – Are ACCU projects that are registered with vegetation, agriculture and savannah burning types of methods.

Method – Methods under the CFI Act set out how a particular activity or project type must be undertaken in order to create ACCUs. Approved methods fall under the following project types: vegetation, landfill and waste; agriculture; savanna burning; energy efficiency; industrial fugitives; transport; and facilities.

Safeguard Baseline – A fixed Safeguard Mechanism baseline is calculated by the sum of ‘production’ multiplied by the ‘emissions-intensity of production’ for each relevant production variable nominated by the facility. It can be calculated using either prescribed production variables and default emissions intensities or facility-specific production variables and estimated emissions intensity values, or a combination.

Safeguard Mechanism reforms – Were implemented with the assent of the Safeguard Mechanism (Crediting) Amendment Bill 2023 on 30 March 2023. The Safeguard Mechanism, which was initially established to ensure that emissions reductions achieved by the ERF’s crediting and purchasing incentives were not displaced by rising emissions elsewhere in the economy. The Safeguard Mechanism covers the industrial sector, which is comprised of large businesses with annual emissions exceeding 100,000 tCO₂-e. These facilities must now keep their emissions below a calculated baseline set by the CER. Facilities which exceed their baseline can remain compliant under the mechanism by purchasing and cancelling ACCUs.

SMCs or Safeguard Mechanism Credits – The CER issues SMCs to facilities with emissions below their Safeguard Mechanism baseline. SMCs can be sold to other Safeguard Mechanism facilities and surrendered to meet compliance obligations within the Safeguard Mechanism scheme. For more information on SMCs, view our [SMCs vs. ACCUs factsheet](#).



Footnotes

¹ Noting the Government's modelling on the supply of ACCUs for the purposes of the enhanced Safeguard reforms is not publicly available, we have canvassed some third-party estimates of supply and demand, and looked at the assumptions underpinning them.

² Clean Energy Regulator (2023), Quarterly carbon market report: March quarter 2023, Figure 1.6:

https://www.cleanenergyregulator.gov.au/Infocenter/Markets/quarterly-carbon-market-reports/quarterly-carbon-market-report-march-2023?utm_source=Clean+Energy+Regulator+-+Update&utm_campaign=ec60d04393-PJ2301_March-2023-QC-MR_subscribers&utm_medium=email&utm_term=0_-b926758c81-%5BLIST_EMAIL_ID%5D#DataWorkbook

³ There are three main sources of supply for ACCUs:

- existing registered Emissions Reduction Fund (ERF) projects
- new and expanded ACCU registered projects, and
- ACCUs held in the Australian National Register of Emissions Units (ANREU)

The number of ACCUs held in the ANREU indicates the maximum supply potentially available to the market at a point in time. New supply through issuances of ACCUs occur throughout the year as participants submit claims for units for projects, while demand occurs through ACCU deliveries, cancellations and relinquishments.

⁴ Clean Energy Regulator (2023), Emissions reduction fund project register, <https://www.cleanenergyregulator.gov.au/ERF/project-and-contracts-registers/project-register>.

⁵ Clean Energy Regulator (2022), Quarterly carbon market report: December 2022, <https://www.cleanenergyregulator.gov.au/Infocenter/Markets/quarterly-carbon-market-reports/quarterly-carbon-market-report-%E2%80%93-december-quarter-2022>.

⁶ Market Advisory Group (2023), Carbon monthly: January 2023, p.15.

⁷ Ibid - Figure 11 in Carbon Monthly, January 2023 shows monthly ACCU surplus over two years (2021-2022) rising steeply.

⁸ These measures were introduced under the Safeguard Mechanism (Crediting) Amendment Bill, which passed in March 2023. See: Australian Government (2023), Revised explanatory memorandum for the safeguard mechanism (crediting) amendment bill 2023, https://parlinfo.aph.gov.au/parlInfo/download/legislation/ems/r6957_ems_435f34d8-a0b8-4668-958f-4df146ac81fa/upload_pdf/Revised%20Explanatory%20Memorandum_22136.pdf;fileType=application%2Fpdf, p. 6.

⁹ CMI suggested vintage restrictions as a potential way to reduce SGM entity reliance on ACCUs (instead of at-source decarbonisation) to meet declining baselines. The Government is not considering limitations at this stage. See: Carbon Market Institute (2022), Safeguard mechanism rules consultation submission, https://carbonmarketinstitute.org/app/uploads/2023/02/FINAL_Carbon-Market-Institute-submission_Draft-Safeguard-Rules-1.pdf.

¹⁰ SMCs are forecast to be widely unavailable on commencement of the enhanced SGM scheme. See: Reputex (2023), Briefing: Regulatory options to address on-site action under the safeguard mechanism, <https://www.reputex.com/research-insights/briefing-regulatory-options-to-address-on-site-emissions-reduction-action-under-the-safeguard-mechanism/>.

¹¹ Reputex (2021), State and trends in the Australian carbon market FY2021, https://www.reputex.com/wp-content/uploads/2021/08/REPUTEX_The-Stateof-the-Australian-Carbon-Market-FY21_0821.pdf.

¹² See Attachment A to this paper.

¹³ This number does not include revoked projects - number of revoked projects was 257. See: Clean Energy Regulator (2023), Emissions reduction fund project register, <https://www.cleanenergyregulator.gov.au/ERF/project-and-contracts-registers/project-register>.

¹⁴ Clean Energy Regulator (2022), Quarterly carbon market report: September quarter 2022, <https://www.cleanenergyregulator.gov.au/Infocenter/Markets/Pages/qcmr/september-quarter-2022/Quarterly-Carbon-Market-Report-September-Quarter-2022.aspx>.

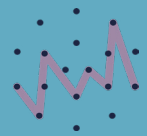
¹⁵ Fitch et al. (2022), Australia's carbon sequestration potential, CSIRO, <https://www.csiro.au/en/research/environmental-impacts/emissions/carbon-sequestration-potential>.

¹⁶ Ibid, p. 9.

¹⁷ Ibid, p. 33.

¹⁸ Ibid, p. 39.

¹⁹ Ibid, p. 52.



²⁰ Ibid, p. 63.

²¹ Ibid, p. 76.

²² Ibid, Table 2-1, p. 2.

²³ Ibid. However we note these figures appear to be different to CER reporting for the same period.

²⁴ Ibid, p. 63.

²⁵ Bryan et al. (2015), Potential for Australian land-sector carbon sequestration and implications for land use, food, water and biodiversity, CSIRO, https://www.csiro.au/-/media/Major-initiatives/Australian-National-Outlook/Tech-reports/REPORT_ANO_Land_sector_sequestration_2015.pdf, pp. 3; 17; 29; 31.

²⁶ Ibid, p.3.

²⁷ Baynes et al. (2022), Offsets for life cycle: Australian greenhouse gas emissions of onshore shale gas in the Northern Territory, CSIRO, https://gisera.csiro.au/wp-content/uploads/2023/02/GISERA_G7_Final_report_final-20230207.pdf.

²⁸ Total lifetime emissions (including upstream gas extraction activities, downstream transformation of gas to LNG or other gas products, and domestic consumption, but not emissions from the consumption of exported LNG) are estimated at 164-338 Mt CO₂-e (low production scenario) - 826 Mt CO₂-e (high production scenario).

²⁹ Ibid, p. 82.

³⁰ Baynes et al. (2022), p. 54.

³¹ Ibid, pp. 55-6.

³² Dick & Breen (2023), Offsetting Beetaloo Basin emissions would require unproven CCS technology, off-limits international credits, CSIRO finds, ABC News, https://www.abc.net.au/news/2023-02-11/nt-csiro-gisera-report-offsets-beetaloo-basin-emissions/101948768?utm_campaign=abc_news_web&utm_content=mail&utm_medium=content_shared&utm_source=abc_news_web.

³³ Wood, Reeve & Ha (2021), Towards net zero: Practical policies to offset carbon emissions, Grattan Institute, <https://grattan.edu.au/wp-content/uploads/2021/10/Towards-net-zero-Practical-policies-to-offset-carbon-emissions.pdf>, p. 39.

³⁴ Wood, Reeve & Ha (2021), p. 46.

³⁵ Ibid.

³⁶ ClimateWorks Australia (2020), Solutions, actions and benchmarks for a net zero emissions Australia, <https://www.climate-workscentre.org/resource/decarbonisation-futures-solutions-actions-and-benchmarks-for-a-net-zero-emissions-australia/>, pp. 115-6.

³⁷ Clean Energy Regulator (2022), Quarterly carbon market report: December quarter 2022, [https://www.cleanenergyregulator.gov.au/Infohub/Markets/Pages/qcmr/december-quarter-2022/Australian-carbon-credit-units-\(ACCUs\).aspx](https://www.cleanenergyregulator.gov.au/Infohub/Markets/Pages/qcmr/december-quarter-2022/Australian-carbon-credit-units-(ACCUs).aspx).

³⁸ Chubb et al. (2022), Independent review of ACCUs: final report, <https://www.dcceew.gov.au/climate-change/emissions-reduction/independent-review-accus>.

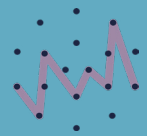
³⁹ It has been recommended that more project details should be made public, to allow market participants have greater confidence in ACCUs issued, such as the size of the carbon estimation areas (CEA). For HIR projects, it has also been recommended to include the suppression mechanisms, the eligible HIR activities and the outcomes of the 5 year regeneration checks.

⁴⁰ Some relevant Chubb recommendations are:

- Maintain the CER's role as scheme administrator, however remove responsibilities for method development and purchasing abatement;
- Implement a new proponent-led method development process, in addition to the Minister nominating methods supported by Department of Climate Change, Energy, the Environment and Water (DCCEEW); and
- Changing HIR and landfill gas methods to enhance integrity and additionality - with a freeze on the issuing of any ACCUs for existing or new projects under those methods until the rules are revised.

⁴¹ ANU research team, headed by Don Butler and Andrew Macintosh.

⁴² Wentworth Group of Concerned Scientists (2022), Response to the independent review of Australian carbon credit units, <https://wentworthgroup.org/wp-content/uploads/2023/01/Response-to-Review-of-Australian-Carbon-Credit-Units-18Jan2023.pdf>.



⁴³ Market Advisory Group (2023), Carbon monthly: January 2023, pp. 19–20.

⁴³ Reputex (2021), State and trends in the Australian carbon market FY2021, https://www.reputex.com/wp-content/uploads/2021/08/REPUTEX_The-State-of-the-Australian-Carbon-Market-FY21_0821.pdf.

⁴⁴ See Attachment A to this paper.

⁴⁵ Department of Climate Change, Energy, the Environment and Water (2023), Safeguard mechanism reforms: About the safeguard mechanism and the reforms, https://storage.googleapis.com/files-au-climate/climate-au/p/prj23cd662ff4387d8c254ae/public_assets/Safeguard%20Mechanism%20Reforms%20Position%20Paper.pdf.

⁴⁶ Ibid.

⁴⁷ NSW Government (2021), NSW electricity infrastructure investment regulation 2021, <https://legislation.nsw.gov.au/view/whole/html/inforce/current/sl-2021-0102#pt.12-div.2>.

⁴⁸ Clean Energy Regulator (2022), Quarterly carbon market report: December quarter 2022, [https://www.cleanenergyregulator.gov.au/Infohub/Markets/Pages/qcmr/december-quarter-2022/Australian-carbon-credit-units-\(ACCUs\).aspx](https://www.cleanenergyregulator.gov.au/Infohub/Markets/Pages/qcmr/december-quarter-2022/Australian-carbon-credit-units-(ACCUs).aspx).

⁴⁹ Annual ACCU supply has increased by a total of 5.6 million since 2017 – an average increase of 1.1 million per annum. However, over the last 2 years that annual rate of increase has fallen to 0.85 million ACCUs. The increase in 2023 looks like being much less than that. The reason for this apparent deceleration is not clear and could reflect uncertainty in the market in the face of dynamic policy settings. See: Clean Energy Regulator (2022), Quarterly carbon market report: December quarter 2022, [https://www.cleanenergyregulator.gov.au/Infohub/Markets/Pages/qcmr/december-quarter-2022/Australian-carbon-credit-units-\(ACCUs\).aspx](https://www.cleanenergyregulator.gov.au/Infohub/Markets/Pages/qcmr/december-quarter-2022/Australian-carbon-credit-units-(ACCUs).aspx).

⁵⁰ Clean Energy Regulator (2023), Australian carbon credit units (ACCUs), [https://www.cleanenergyregulator.gov.au/Infohub/Markets/Pages/qcmr/march-quarter-2022/Australian-carbon-credit-units-\(ACCUs\).aspx](https://www.cleanenergyregulator.gov.au/Infohub/Markets/Pages/qcmr/march-quarter-2022/Australian-carbon-credit-units-(ACCUs).aspx).



for more information please contact

info@carbonmarketinstitute.org

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