Australian National University

Submission to the Independent Review of Australian Carbon Credit Units

ANU Institute for Climate, Energy & Disaster Solutions

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Introduction

We thank the Panel for the opportunity to provide input into the Independent Review of Australian Carbon Credit Units.

This submission is presented on behalf of The Australian National University's Institute for Climate, Energy & Disaster Solutions (ICEDS). It has been collaboratively prepared by scholars from across the University with recognised expertise in climate science and environmental policy.

In 2021, ANU adopted an interim net zero greenhouse gas emissions target by 2025 in addition to an ambitious 'below zero target', which seeks to achieve a net negative carbon footprint by 2030. To accomplish this, we will be required to both purchase carbon credits from external providers as well as develop our own projects to meet our carbon removal goals via insetting.

To guide our carbon credit purchases and carbon removal activities, we consulted widely among experts within the University to develop the ANU Principles for Carbon Removal (the Principles). With these Principles, it was our intention to develop a robust set of governing standards to steer the University's ongoing decarbonisation efforts, consistent with international best practice.

Specifically, the Principles provide guidelines for co-benefits, safeguards, measurement, reporting and verification, additionally, and permanence. Furthermore, the Principles require that all carbon removal activities retired against the University's greenhouse gas inventory must occur within Australian territory. For reference, these Principles have been included as an appendix to this submission (see abridged version in Appendix 1, pp.10 – full version uploaded in "supporting files").

It was the University's intention to meet our unique offsetting and carbon project development needs with the purchase of ACCUs in the short-term, and through the administration of carbon sequestration projects following Emission Reduction Fund (ERF) methods under the Clean Energy Regulator in the long term. It is unfortunate however that through a combination of market research and internal feedback provided by ANU staff, we find ourselves unable to engage with the ERF neither as a credit purchaser nor as a project developer at this stage. Principally, our hesitation to participate within the existing Australian carbon market is due to our current lack of confidence that ACCUs generated by the existing suite of methods align with the principles governing our carbon reduction strategy.

This submission outlines what we believe are the key deficiencies within the current Australian carbon market. It discusses weaknesses in the governance, transparency and integrity of existing methods used to enrol projects into the ERF. We further provide a series of recommendations which, if implemented, would better align the Australian carbon market with the University's robust carbon removal Principles. Were these recommendations adopted, the University would be able to participate more fully in the market as both a purchaser of ACCUs and as a project developer within the ERF.

While an economy free of greenhouse gas emissions remains infeasible, carbon offsetting will play a necessary role in both decarbonising the global economy and reaching Australia's net zero targets, including those agreed under the Paris Agreement. ACCUs generated and traded within the domestic carbon market must maintain a strong and credible reputation and engender the trust of participants, purchasers and the broader community. Likewise, it is critically important that regulators of the Australian carbon market remain responsive and that the governance of carbon-based securities, including ACCUs, continues to adapt in response to shifts within the domestic economy as well as the rapidly changing climate.

Further to our submission, we would warmly welcome any opportunity to meet the Panel to provide further input into the Independent Review.

Submission

Governance of the ERF

Currently, the Clean Energy Regulator serves three significant functions: (1) establishing the rules governing the carbon market; (2) acting as the primary regulatory authority for the market; and (3) providing the main source of demand for ACCUs (via Australian Government purchase of credits via the ERF). It also plays a significant role in staffing the Emissions Reduction Assurance Committee (ERAC), the body responsible for determining ERF methods. The lack of separation of governance and decision-making powers reduces both supplier and consumer confidence in the integrity of the ERF.

There is significant uncertainty regarding the ERF and the governance of the Australian carbon market. This both deters would-be buyers from purchasing ACCUs as well as developers from entering to their full potential. Greater checks and balances are needed before sweeping changes to the market rules can be made. An illustrative example was the intervention by former Minister for Energy and Emissions Reduction, Angus Taylor, in the market in March 2022, to release credit suppliers from their Commonwealth contracts. This resulted in many project developers exiting their contracts with the ERF, and selling their ACCUs onto the voluntary market, which at the time, was willing to pay a significant premium relative to historical price averages of ERF reverse auctions. Inevitably, this sudden increase in supply led to a rapid decline in the value of ACCUs, from approximately $50 to $30 per ACCU. It is of great concern that such a reform was undertaken without public consultation, particularly given the significant influence it had on the pricing of ACCUs on the public market.

Sudden ACCU price fluxes undermine the ability of project developers to undertake appropriate financial analysis for planned ERF projects, particularly given the significant timeframes on which many ERF projects are required to operate. They further undermine the ability of ACCU purchasers to effectively evaluate the future costs associated with offsetting emissions. This discourages the adoption of voluntary emissions reduction commitments as such commitments may cause exposure to significant financial risk.

Recommendations

- Separate the organisations responsible for rulemaking, rule assessment, regulation and purchasing of ACCUs to restore confidence in the integrity of the scheme.
- Establish and enforce the requirement that appointees to ERAC and other governance bodies remain independent and do not stand to benefit from any commercial interests within the Australian carbon market, or from firms that provide advisory or other services to market participants.
- Require that proposed market reforms or policy changes that have the potential to impact ACCU pricing undergo a mandatory public consultation process and are appropriately gazetted before implementation.
- Increase certainty in the regulatory environment by increasing the checks and balances to rule changes made within the scheme. At a minimum, changes to market rules with the potential to influence the prices of ACCUs in the voluntary market should be developed only with public consultation and gazetted for an appropriate period before implementation.

Rigour and integrity of ERF methods and projects

The integrity of multiple methods within the ERF have been questioned on their additionality and potential for over-crediting. For the ERF to drive down Australia's emissions, all ACCUs issued under the scheme must represent abatement that is real and additional to what would otherwise have occurred in the absence of the financial incentive ACCUs offer project developers. Should credits be over-allocated to developers by certain methods, these excess ACCUs merely serve as financial securities acquired by some projects at no cost to the proponent.

Prominent methods which warrant scrutiny in this respect include human induced regeneration (HIR), avoided deforestation and landfill gas. As these three methods collectively account for nearly three-quarters of all ACCUs issued to date, potential integrity issues with any of these methods would significantly undermine the integrity of ACCUs as a legitimate representation of abated carbon and consequently, risk eroding confidence in the Australian carbon market generally.

Human induced regeneration

The HIR method credits proponents with ACCUs on the basis that they commit to activities which promote the regrowth of native vegetation on previously cleared, or partially cleared land or land on which native vegetation growth has historically been 'suppressed'. These activities include managing and excluding livestock, ceasing the mechanical or chemical suppression of native regrowth and in some circumstances, minimising harm posed by invasive flora and fauna.

For HIR projects, the balance of carbon abatement is calculated using a modelling package developed by the Australian Government's FullCAM (or the Full Carbon Accounting Model). The heavy reliance on modelling within the HIR method, as opposed to direct measurement, is intended to reduce the transaction and compliance costs to project developers and to encourage participant uptake. To maintain integrity, model calculations must accurately reflect actual carbon abatement rates on project sites. Should the model be poorly calibrated, or inappropriately applied to sites, the amount of ACCUs awarded to HIR projects risk misrepresenting the actual amount of carbon abatement.

The carbon stored in HIR projects is calculated according to a specified tree yield function (TYF). The TYF is calibrated on the assumption that project sites contain little to no mature woody vegetation at project commencement, critical as the rates of carbon accumulation vary depending on the age of the vegetation. The presence of mature trees in projects registered in the ERF under the HIR method means that the modelled rates of carbon abatement are likely over-estimating the actual amount of carbon sequestered at these sites. This is because (1) already mature trees sequester carbon at a slower rate than growing trees, and (2) mature trees will compete with juvenile trees in their vicinity, leading to slower growth rates for new regrowth, and consequently a slower accumulation of above ground biomass than what is suggested by the tree yield function used by FullCAM.

For the HIR method to satisfy the ERF's requirement for additionality, the carbon abatement provided by a particular project must be abatement that would not occur in the ordinary course of events (i.e., in the absence of management interventions by a proponent). Although project proponents are credited for their management of livestock grazing, it is highly likely that it is changes in rainfall, not livestock grazing that has the largest influence on carbon accumulation. Should this be the case, increases in woody vegetation cover in registered HIR projects are unlikely to be driven by the management actions of proponents and therefore should not be considered truly additional. This implies the HIR method, which accounts for over 50 per cent of all ACCUs issued to date, is likely generously over-allocating ACCUs to developers for carbon sequestration on project sites which would have likely happened irrespective of the incentives

provided by the ERF. Insofar as a significant proportion of the carbon sequestered by growing native vegetation is dependent on factors beyond a developer's control, it is perverse that such projects be issued with ACCUs.

Adaptive approaches for baselining and measurement that meaningfully account for climate variability and longer-term climate change impacts need to be included in credit assessments to ensure that landholders are rewarded for their additional management actions, not on the basis of seasonal variation around whether it rains (or not). To maintain credibility, these adaptive adjustments need to be location-specific with high spatial and temporal resolutions.

Avoided deforestation

Avoided deforestation rewards projects with ACCUs for not converting native forests for intensive agricultural use or development. Due to the liberal issuance of vegetation clearing permits by multiple State governments, proponents in some circumstances have been credited for preserving forests that were at marginal actual risk of being cleared. In these instances, there is no additional carbon benefit provided. Crucially, this method relies on the questionable assumption that, in all instances where a landowner is granted a clearing permit, all native forest covered by that permit will inevitably be removed.

Additionally, given the irreplaceable biodiversity value of established native forests, their long-term protection should be secured by strong legislative safeguards, the enforcement of which must remain an ongoing priority for state and federal environmental regulators. It is our view that market mechanisms alone are insufficient to secure the future of native vegetation communities and remaining habitat for endangered fauna.

Landfill gas

Landfill gas projects allow waste facility operators to earn ACCUs from capturing methane biogas generated from landfills. The captured gas may be either flared or diverted and combusted to generate electricity (referred to as generation projects). The project abatement is calculated as the difference between the amount of methane diverted by the project and the amount of methane that would have oxidised at the surface in the absence of the project. Additionally, for some projects, a baseline abatement is calculated against the amount of methane that state and territory regulation requires the project to capture as part of its environmental compliance requirements.

The core issue relating to landfill gas remains the questionable additionality provided by many projects, namely, to what extent the diversion of methane has been driven by the financial incentives provided by ACCUs, or would the activity have taken place regardless. There is an issue of financial additionality - if methane diversion is already justified under existing financial incentives available to waste facility operators, it is reasonable to expect that methane would be diverted wholly aside from the financial incentives provided by selling credits to the ERF. Generation projects can earn revenue through the sale of electricity and large-scale generation certificates (LGCs). As the prices of electricity and LGCs are sufficient in many instances to make methane capture profitable for waste operators, it is unclear what additional carbon abatement (if any) is represented by ACCUs being issued in this sector. Financial additionality analysis relies on confidential commercial data which makes transparency especially difficult, reducing trust in the integrity of ACCUs.

A further point of concern relates to how older landfill gas projects have been incorporated into the ERF. In instances where landfill projects were registered under the NSW Greenhouse Gas Abatement Scheme (NSW GGAS) and the Federal Government's Climate Active (formerly Greenhouse Friendly), transitional arrangements permitted the use of historical baselines granted under previous measurement methods used by the former Carbon Farming Initiative. In many cases, these projects were grandfathered into the ERF with lax regulatory proportions

(the amount of methane the operator is required to capture under state regulations and which is excluded when calculating actual methane abatement). Large discrepancies between the default proportion of 30 per cent for new projects compared with 24 per cent (for projects under the NSW GGAS) and even zero per cent (under Greenhouse Friendly) advantage proponents who registered their projects before the most recent version of the ERF landfill gas method (implemented in January 2022) and raise further doubts regarding additionality of the older methods.

Transparency

Much of the scepticism with the previously discussed methods stems from the limited transparency within the scheme. While some information on registered (and revoked) projects is publicly available on the Clean Energy Regulator website, there is generally insufficient disclosure for a purchaser on the voluntary market to make informed decisions about project quality. Should doubts about popular methods such as HIR remain, it will be impossible for persons and organisations who wish to offset their emissions through voluntary ACCU purchases to know whether the credits they are buying represent genuine additional abatement. This limits the ability of purchasers, particularly purchasers who wish to prioritise social and environmental co-benefits, to confidently participate in the public market.

Recommendations

- Account for non-management impacts (especially rainfall variability) within methods that generate ACCUs through vegetation management and soil carbon methods. Such climate variability adjustments must consider the likely impacts of anthropogenic climate change over the lifetime of ACCU generating projects registered with the ERF.
- Support the development and deployment of novel precision measurement, monitoring and modelling methods, including remote sensing, in the verification of projects.
- Require ‘control’ plots for vegetation and soil carbon methods to be separated for a comparison of the project's counterfactual to allow for an evaluation of the success of carbon removal projects.
- Ensure that projects registered under the HIR method do not include mature woody vegetation.
- Revoke the avoided deforestation method on additionally grounds;
- Require greater transparency of project developers and aggregators, beginning with making credited areas (offset reports), audit reports and abatement estimation assumptions publicly available.
- Require projects credited ACCUs under methods with multiple iterations to transition to the most recent version of their applicable method and establish clear and transparent transition arrangements when updating or revising different methods.
- Implement clear "sunset" requirements where credits that were produced before a certain date must be forcibly retired.

Co-benefits and other impacts

There are many individuals, organisations and communities for whom the co-benefits associated with carbon sequestration projects will provide more benefit than the market price of ACCUs with which it is associated. Although the details of the proposed national biodiversity crediting scheme remain to be announced, it is anticipated that the scheme will, to some degree, provide recognition of biodiversity co-benefits associated with carbon projects (in the instances where biodiversity and carbon credits can be credibly bundled), following from the success of the Carbon + Biodiversity pilot. Nevertheless, many important co-benefits are likely

to go unrecognised. These include: support for First Nations' connections to Country and traditional knowledge; economic benefits to local communities; improved water quality and supply for drinking water provision; improved ecosystem health; increasing soil stability against erosion; and enhancing regional resilience in the face of climate change.

The ACCU market is stratifying, with price differentiation being observed for projects with perceived co-benefits (notably savanna burning projects run by First Nations peoples). Despite this recent shift, it is difficult for consumers to understand the presence (or extent) of co-benefits associated with particular projects (see transparency concerns listed in 'rigour and integrity of ERF methods and projects', p.6). Consequently, project developers that deliver projects with important co-benefits continue to struggle to differentiate and appropriately price their ACCUs on the public market. To address this, a standardised co-benefit assessment and certification framework could be developed as a matter of priority to assist credit purchases in their project quality assessments and to ensure that project developers with demonstrated co-benefits are being appropriately compensated. Although a co-benefit framework may not explicitly safeguard against negative externalities, it would ultimately provide all developers with financial incentives to integrate co-benefits into projects.

Future climate change will have widespread impacts on carbon credit projects throughout the land sector. While current climate change projections suggest that northern Australia will experience increased precipitation, potentially benefitting carbon stocks, increases in temperatures and decreases in rainfall in other parts of the country are likely to have adverse impacts on soil carbon and vegetation (reducing both carbon stocks and rates of sequestration). This, combined with an increased risk of destructive fire-regimes, prolonged heatwaves, drought and intense tropical storms could result in a significant reversal of carbon stocks from ACCU projects located in vulnerable regions. As the frequency and severity of extreme weather events are expected to increase, even under moderate warming scenarios, the risks associated with such natural disasters must be considered given the long-term duration of ERF projects, particularly those contracted over a 100-year period. The potential risks to the ERF from climate change have been raised by the Climate Change Authority in their 2017 and 2020 legislative reviews of the ERF, but little has currently been done to investigate how ACCUs might be safeguarded from future climate change risks. The risk-of-reversal buffer, the scheme's key insurance mechanism against carbon losses, should be both reassessed from its arbitrary 5 per cent threshold and extended to all projects under the scheme, not just sequestration projects.

Recommendations

- Prioritise the development of a robust and consistent co-benefit evaluation and certification framework.
- Reassess the risk-of-reversal buffer in the context of physical climate risk and require climate adaptation planning as a part of project certification to safeguard against carbon losses from future climate change.
- Develop and introduce additional methods with greater permanence and resilience to climate change.

Future

The ERF was established as a counterfactual carbon pricing mechanism to the carbon tax which was abolished in 2014. Paying the polluter (ERF), as opposed to making the polluter pay (carbon tax), is not only an economically inefficient carbon pricing mechanism, but ineffective at reducing emissions at the scale required to meet Australia's emissions reduction target of 43 per cent from 2005 levels by 2030, and net zero emissions by 2050. A carbon tax, in addition to the existing carbon market, would bring Australia into line with the international community. If

Australia fails to meaningfully price carbon, exporting industries risk being disadvantaged by carbon related tariffs introduced by major trading partners, such as the European Union's Carbon Border Adjustment Mechanism (CBAM), due for full implementation in 2026.

As the ACCU market expands and stratifies based on co-benefits, it is reasonable to assume that stratification will also occur based on other quality characteristics, including carbon permanence. Sequestration methods that consider geological carbon in addition to biological carbon will be required to minimise reversal risk of sequestration projects across the scheme. For example, biochar production converts labile plant carbon into stable geological carbon. Producing inert biochar from otherwise decomposable (and thus emissions-laden) biomass ensures carbon stability. There is also an opportunity to use feed stocks from emission producing areas of the economy, such as sewerage or food waste, to combine both an emissions reduction and carbon sequestration opportunity into one method. Such feed stocks should be carefully defined to avoid negative externalities such as deforestation.

Recommendations

- Reconsider the need to implement an economy-wide carbon tax in addition to the current carbon credit market.
- Consider methods with high durability for development in 2023, including biochar and enhanced weathering.

Conclusions

To assist in meeting the targets of the Paris Agreement, the expansion of the Australian carbon credit market must be built on integrity, transparency and regulatory predictability. As voluntary demand for carbon credits rises over the coming decades, it will become increasingly important to ensure that Australia’s carbon market remains internationally competitive and compatible. This is a more and more pressing imperative as the deadline for many organisational net and below zero commitments approaches. The outcome of this review will likely decide whether ACCUs can play a meaningful role in our 2030 target and beyond.

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Appendix 1 - ANU Principals for Carbon Removal (abridged version)

1. Overall ANU approach to carbon removal

(a) Reducing greenhouse gas emissions at their source is preferable to drawing them down.
(b) Only carbon credits and removal projects on Australian land can be counted towards ANU Below Zero targets.
(c) The cost of carbon credits that offset carbon emitted during business practices will be covered by the relevant business unit where the emissions originated (polluter pays).
(d) The University will integrate research and teaching into all ANU carbon removal projects and partnerships.
(e) ANU will seek to build capacity in carbon removal research in Australia and overseas.
(f) ANU will inform and strengthen standards within carbon removal markets.

2. Co-benefits and safeguards

(a) ANU will assess rigorously carbon removal projects across all stages to ensure they advance the United Nations Sustainable Development Goals, do not cause harm, and are consistent with the other Principles.
(b) ANU will develop long-term partnerships and work in collaboration with Traditional Owners, other landholders and local communities across all project phases.
(c) ANU will prioritise projects that generate co-benefits in priority areas: (i) supporting First Nations' connections to Country and traditional knowledge; (ii) economic benefits to local communities; (iii) biodiversity conservation and landscape regeneration; (iv) improved water quality and supply for drinking water provision and ecosystem health; (v) sustainable agricultural and renewable energy production; (vi) improved public health and well-being outcomes under extreme weather events and disasters; (vii) increasing soil stability against erosion; and (viii) enhancing adaptation to climate change.
(d) ANU will diversify its portfolio of carbon removal projects across sectors and geographies to demonstrate best-practice methods and support knowledge sharing across different contexts.

3. Additionality

(a) ANU carbon removal projects must demonstrate additionality.
(b) ANU will collect baseline data that are robust, conservative and site-specific to assist in demonstrating additionality.

4. Permanence

(a) The biophysical permanence of removed carbon should be ~100 years or longer.
(b) ANU aims to prioritise long-term partnerships for carbon removal.

5. Measurement, reporting and verification

(a) ANU will meet and exceed current best practices and requirements in measurement, reporting and verification of carbon removal activities.
(b) Modelling frameworks, measured results and management methods will be made publicly available (and compared with other approaches) to accelerate responsible and equitable adoption across the carbon removal sector.
(c) ANU will regularly report on carbon removal activities.