Tortured recommendations, incomplete and unsubstantiated findings: an analysis of the report of the Independent Review of Australian Carbon Credit Units

Andrew Macintosh, Don Butler, Megan C. Evans, Marie Waschka and Dean Ansell

15 February 2023

Executive summary

Carbon offsets can play a critical role in climate policy by reducing the economy-wide costs of mitigating greenhouse gas emissions and generating important social and environmental co-benefits. However, the benefits of offsets are contingent on integrity – the offsets must represent real and additional greenhouse gas abatement.

There are serious integrity issues with Australia's carbon offset scheme. Weak governance structures have resulted in deficiencies in the design and administration of the scheme. The problems with the scheme have been detailed in a series of papers published by the Australian National University (ANU) and University of New South Wales, Canberra (UNSW) Emissions Reduction Fund (ERF) research team and other groups.

The Australian Government established the Independent Review of Australian Carbon Credit Units (ACCUs) in July 2022 to advise on:

- the appropriateness of the ERF's governance arrangements; and
- the integrity of the ERF's methods, particularly the human-induced regeneration, landfill gas, avoided deforestation, and carbon capture and storage methods.

The review panel's final report was published in January 2023.

The review panel's governance recommendations

The headline finding from the review panel's report was that 'the ACCU scheme arrangements are essentially sound'. Despite the categorical nature of this finding, the review panel recommended substantial changes to improve the governance of the scheme.

These governance reforms are welcome and should lead to significant improvements in the operation of the scheme if they are properly implemented. However, the governance reforms do not go far enough in several key areas, including transparency and access to justice.

The Australian Government should ensure there is complete transparency in the operation of the scheme by enshrining comprehensive disclosure obligations in the *Carbon Credits (Carbon Farming Initiative) Act 2011* (CFI Act). The Act should also be amended to provide public interest groups and others with standing to seek injunctions to restrain contraventions of the Act and judicial review of administrative decisions made under the Act.

The review panel's findings on the methods and the integrity of ACCUs

The review panel dismissed the concerns raised by the ANU-UNSW ERF research team and others on the scheme's main methods, concluding that the level of abatement has not been overstated.

The review panel's findings on the methods are unsubstantiated and incomplete, and its recommendations are tortured, whereby they do not explicitly state there are any problems but implicitly acknowledge the underlying issues and recommend they be fixed.

Landfill gas method

Landfill gas projects receive ACCUs for capturing and combusting the methane component of the biogas emitted from solid waste landfills. The integrity problem with the landfill methods is that many of the larger projects are getting ACCUs for combusting methane that they would have combusted anyway because their 'baselines' are too low. A 'baseline' is a prescribed proportion of the gas captured and combusted at each site, which is deducted from the total amount of methane combusted at the site when calculating the credited abatement.

The panel recommended that: 'Landfill gas methods and crediting period extensions should incorporate upward sloping baselines. … The baseline of new landfill gas projects and crediting period extensions of existing projects should be adjusted during the lifespan of the project. … Arrangements should be made for the early review and voluntary adjustment to the baseline of existing projects'.

Contrary to its terms of reference, the panel did not comment on whether the landfill gas methods meet the offset integrity standards.

Implicit in the panel's recommendation for the early review of the baselines is the acceptance that the existing baselines are problematic; otherwise they would not require early review. The recommendation for upward sloping baselines also implicitly endorses the notion that the baselines of some projects are too low.

The recommendation for revising the baselines is welcome and it should not be controversial because landfill gas operators that account for more than 90% of registered projects have expressly stated that they support the development of an increased baseline setting framework.

However, the notion that the adoption of the revised baselines should be optional for existing projects is an extraordinary suggestion for a financial product where the integrity of the embodied abatement is essential to the product's quality and ensuring consumers are not misled. Voluntary adoption of revised baselines would effectively prioritise the financial interests of existing project proponents over the integrity and cost-effectiveness of Australia's climate policy.

Avoided deforestation method

The avoided deforestation method provides ACCUs to landholders in western New South Wales for not clearing forests that were authorised to be cleared under a specific type of clearing permit, known as an invasive native species property vegetation plan (INS PVP). The integrity issue with the method relates to additionality: are landholders being given ACCUs for not clearing forests they were unlikely to clear in the foreseeable future?

The panel found that: 'The length of time that has elapsed since the issue of any remaining unused land clearing permits imply that it would be hard to establish intent to clear land, raising questions about the additionality of any new projects that might be registered under the current method'.

On this basis, the panel recommended 'no new project registrations be allowed under the current avoided deforestation method'. To give effect to this recommendation, the Australian Government will need to revoke the method.

Despite effectively recommending the method be revoked, and again – contrary to the terms of reference – the panel did not comment on whether the avoided deforestation method meets the offsets integrity standards.

In its findings and recommendation, the panel implicitly accepts that the integrity of the method hinges on the assumption that the forests would be cleared within the term of the INS PVPs. If this was not the case, there would be no need to recommend that no new project registrations be allowed under the method. The fact the remaining INS PVPs are due to expire would be irrelevant, particularly given that, in most cases, landholders no longer need government approvals to legally carry out the type of clearing authorised under INS PVPs.

The panel's implicit acceptance that the integrity of the method hinges on the assumption that the forests would be cleared within the term of the INS PVPs makes it difficult to avoid the conclusion that the ACCUs issued under the method are 'high risk' credits; that is, there is a significant risk they do not represent additional abatement.

Human-induced regeneration (HIR)

Human-induced regeneration projects ('HIR projects') are supposed to involve the regeneration of permanent even-aged native forests through changes in land management practices, particularly the cessation of clearing and reducing grazing pressure by livestock and feral animals. The integrity issue with the HIR method is that it has not been applied in accordance with its original intent: to incentivise the regeneration of native forests by allowing juvenile trees and shrubs to regrow in areas that were previously cleared.

The panel recommended that the method be administered to 'ensure that all HIR projects conform to its current intent: that it is reasonable to expect that the project area will become native forest, attain forest cover, and permanently store carbon as a direct result of project management actions'. To give effect to this, the panel recommended that ACCU issuances to existing projects cease until they demonstrate compliance with key eligibility requirements.

Notably, despite claiming the method is 'administered by a robust regulatory framework', the panel did not review any projects to assess compliance. It openly admits this in its report, stating that 'the Panel did not review individual projects'.

The full and proper implementation of the panel's recommendations would have profound implications for existing projects and the ACCUs they are able to generate – eligible HIR areas could be reduced by more than 90%. Where carbon estimation areas are found to include ineligible land, no further ACCUs should be issued in relation to these areas. Moreover, proponents could be required to surrender an equivalent number of ACCUs as have been issued in relation to these ineligible areas.

However, whether the method requirements are properly applied depends on the Clean Energy Regulator. To date, the Clean Energy Regulator has refused to admit there are any problems with the scheme or its administration, including with the interpretation and application of the HIR method.

This behaviour does not inspire confidence that the panel's recommendations will be fully and properly implemented.

The panel's recommendations are also at risk of being bypassed if existing HIR projects are allowed to transfer onto the proposed Integrated Farm Method. This could overcome the legal noncompliance issues associated with existing projects, allowing them to continue to generate ACCUs for abatement that is generally neither real nor additional.

Implications of the Review

If the review panel's recommendations are implemented fully and professionally, the governance reforms, and several of the method recommendations, should substantially improve the integrity of new projects, ensuring that the ACCUs from these projects represent real and additional abatement. This is a positive.

The key flaw in the proposed reforms is that they could largely leave existing projects untouched**.** There are currently more than 1,400 registered projects, 565 of which are registered under the three main methods. The remaining projects are registered under methods that have not been properly evaluated, a number of which have known integrity problems (e.g. plantations and measured soil carbon). To date, no measures have been proposed to evaluate the integrity of these methods or their projects.

Similarly, the panel's recommendations on the three main methods could have no, or very limited, impact on the projects that are currently registered under them. There is the very real prospect that existing projects will be allowed to continue to generate ACCUs in accordance with current practice**.** If this eventuated, it would significantly and adversely affect the Safeguard Mechanism's capacity to drive down Australia's emissions.

Measures are needed to mitigate the risk that low integrity ACCUs pose to the Safeguard Mechanism and to ensure improvements are made to the carbon offset scheme.

1. Carbon offsets and their role in Australia's climate policy

Australia's carbon offset scheme, which forms part of the Emissions Reduction Fund (ERF), is a central piece of the Australian Government's climate policy. Under the carbon offset scheme, landholders, energy users and other facility operators can register projects that avoid emissions or sequester carbon dioxide (CO_2) in trees, soils or geological formations. To be eligible, proponents must meet a set of scheme-wide eligibility rules and satisfy the requirements of one of 37 'methods'. The methods are legislative instruments that set out the rules governing the operation of specific types of offset projects, such as energy efficiency, tree planting and the destruction of methane emitted from landfills and coal mines. Proponents who register and undertake their projects in accordance with the methods and associated rules are granted Australian carbon credit units (ACCUs), a tradable financial instrument.

Each ACCU is supposed to represent one tonne of real and additional abatement of greenhouse gas emissions from registered offset projects. ACCUs can be sold to facilities with emission reduction obligations under the Australian Government's Safeguard Mechanism to offset their emissions. They can also be sold to the Clean Energy Regulator, who purchases ACCUs on behalf of the Australian Government, and to companies and individuals wanting to voluntarily offset their emissions (e.g. to support 'carbon neutrality' or 'net zero' claims).

The primary purpose of the carbon offset scheme under the Albanese Government's climate policy is to reduce the cost of cutting greenhouse gas emissions. The Safeguard Mechanism is intended to be the primary mechanism for reducing Australia's emissions and achieving its climate change mitigation targets (43% reduction by 2030 and net zero by 2050). To do this, the Government is making changes to the Safeguard Mechanism to convert it from a regulatory instrument that was originally designed to constrain emission increases into an emissions trading scheme that drives down emissions. Under the 'new' Safeguard Mechanisms, covered facilities will be subject to emission caps based on the emissions-intensity of their operations that will decline over time. These facilities will be able to meet their emission caps (called baselines) by cutting onsite emissions or buying and surrendering either 'Safeguard Mechanism Credits' (a form of emission permit issued to covered facilities if their emissions are below their caps) or ACCUs.

For many of the covered facilities, it is likely to be difficult and expensive to directly reduce their onsite emissions, at least in the short- to medium-term. Offsets provide a way for these facilities to meet their mitigation obligations by effectively paying someone else to reduce their emissions, where the abatement costs are lower. In theory, allowing facilities with high abatement costs to access offsets should lower the economy-wide cost of reducing greenhouse gases, without sacrificing environmental outcomes. When administered effectively, offsets can also provide biodiversity and social co-benefits.

While theoretically elegant, the cost-effectiveness of the scheme hinges on the integrity of the offsets. For the system to work, and for the offsets (ACCUs) to have integrity, they must represent **real** and **additional** greenhouse gas abatement. In this context, the term 'real' means that the credits must reflect an actual reduction in emissions, or increase in sequestration, that is directly attributable to the relevant offset project. Additionality means the credits must reflect a reduction in emissions or increase in sequestration that would not occur without the ACCUs.

Ensuring 'realness' requires robust rules governing the measurement of emissions and removals that are associated with the offset projects. Ensuring additionality requires rules that prevent credits being issued for reductions that would have happened anyway. For example, credits should not be issued for reductions that are attributable to factors beyond management control (e.g. regeneration that is attributable to rainfall rather than land management changes) or that follow the adoption of already profitable practices.

There are three main implications if ACCUs have low integrity because they do not represent real and additional abatement.

- If the low integrity ACCUs are used by facilities covered by the Safeguard Mechanism, it will result in an increase in greenhouse gas emissions – the ACCUs allow covered facilities to increase their emissions above their baselines. Consequently, if the ACCUs do not represent real and additional abatement, they will enable an increase in emissions but there will not be an offsetting reduction elsewhere.
- If the low integrity ACCUs are purchased by the Clean Energy Regulator and retired, it is a waste of taxpayer funds – the proponents are being paid for carbon abatement services they have not provided.
- If the low integrity ACCUs are used by private individuals and entities to meet voluntary carbon neutrality goals, it is a waste of the buyers' money and emissions will be higher than they otherwise would be if the credits had integrity.

Under the legislation that governs the ERF's carbon offset scheme—the *Carbon Credits (Carbon Farming Initiative) Act 2011* (CFI Act)—all offset methods are supposed to meet six offsets integrity standards that are intended to ensure the credited abatement is real and additional. These include a requirement that all estimates, projections and assumptions in the methods must be conservative.

2. Integrity Problems with the ACCU Market

Independent analysis by The Australian National University (ANU) and University of New South Wales, Canberra (UNSW) Emissions Reduction Fund (ERF) research team suggests there are major problems with the ERF's three main methods: human-induced regeneration, landfill gas, and avoided deforestation. **Appendix A** contains a summary of the integrity problems raised by the ANU-UNSW ERF research team about these methods.[1]

These three methods account for approximately 75% of the ACCUs issued to date.[2] The data suggest that at least 90% of the ACCUs issued to human-induced regeneration projects, 33% of ACCUs issued to generation-based landfill gas projects, and 90% of the ACCUs issued to avoided deforestation

[1] The ANU-UNSW ERF research team has also identified significant integrity problems with the 2022 plantations method. See: Macintosh, A., Butler, D., Ansell, D., Waschka, M. (2022) Integrity Problems with the ERF's 2022 Plantation Forestry Method. The Australian National University, Canberra. Available at: https://law.anu.edu.au/sites/all/files/short_-_integrity_problems_with_the_plantations_method_120822_final.pdf (20 January 2023).

[2] Clean Energy Regulator (2023) 'Emissions Reduction Fund project register'. Commonwealth of Australia, Canberra. Available at: https://www.cleanenergyregulator.gov.au/ERF/project-and-contracts-registers/project-register (18 January 2023).

projects are 'high risk'(low integrity) credits, in the sense that they are unlikely to represent abatement that is real and/or additional. In total, this equates to approximately 70% of ACCUs issued under the scheme to the end of December 2022.

The main integrity problems with the human-induced regeneration and landfill gas methods identified by the ANU-UNSW ERF research team have also been identified as integrity risks by numerous independent scientists and scientific organisations, including the Australian Academy of Science,[3] CSIRO[4] and the Wentworth Group of Concerned Scientists.[5] Carbon market players responsible for the issuance of around 50% of the credits under the scheme have publicly agreed there are significant problems with both of these methods and that changes should be made to improve integrity.[6]

3. Independent Review of ACCUs

On 1 July 2022, the Albanese Government announced the establishment of the Independent Review of ACCUs, chaired by former Chief Scientist Professor Ian Chubb.[7] The review panel was tasked with advising on the appropriateness of the ERF's governance arrangements and the integrity of the ERF's methods, particularly the human-induced regeneration, landfill gas, avoided deforestation, and carbon capture and storage methods.

[3] Australian Academy of Science (2022) Review of Four Methods of Generating Australian Carbon Credit Units. Report for the Department of Climate Change, Energy, the Environment and Water, Canberra. Available at: https://www.science.org.au/supporting-science/science-policy-and-analysis/reports-and-publications/review-of-four-methods-for-generating-australian-carbon-credits-units (30 January 2023)

[4] Paul, K., Roxburgh, S. (2021) Baseline AGB: TYF calibration for natural regeneration in land managed for grazing. CSIRO, Canberra. Available in: Butler, D. et al. (2022) Australian National University (ANU)-University of New South Wales (UNSW) ERF research team submission to the Chubb Review. Available at: https://consult.dcceew.gov.au/independent-review-of-accu/submission/list (24 January 2023).

[5] Wentworth Group of Concerned Scientists (2022) Submission to the Independent Review of Australian Carbon Credit Units. Available at: https://consult.dcceew.gov.au/independent-review-of-accu/submission/list (24 January 2023).

[6] GreenCollar (2022) Submission to the Independent Review of Australian Carbon Credit Units. Available at: https://consult.dcceew.gov.au/independent-review-of-accu/submission/list (24 January 2023); GreenCollar and ANU-UNSW ERF Research Team (2022) Joint Submission to the Independent Review of Australian Carbon Credit Units. Available at: https://consult.dcceew.gov.au/independent-review-of-accu/submission/list (24 January 2023); LMS Energy, Cleanaway Waste Management, Veolia and EDL Ltd (2022) The Emissions Reduction Fund Landfill Gas Method – Joint Letter to Senator David Pocock, 1 September 2022; [Landfill Gas Operator 1 – name withheld] and Macintosh, A. (2022) Independent Review of Australian Carbon Credit Units. Joint Letter to Professor Ian Chubb. 29 July 2022; and [Landfill Gas Operator 2 – name withheld] and Macintosh, A. (2022) Independent Review of Australian Carbon Credit Units. Joint Letter to Professor Ian Chubb. 4 August 2022.

[7] Bowen, C. (2022) Independent Review of ACCUs. Media Release. Commonwealth of Australia. Available at: https://minister.dcceew.gov.au/bowen/media-releases/independent-review-accus (24 January 2023).

3.1 The review panel's governance recommendations

The review panel's report was published on 9 January 2023 and its headline finding was that 'the ACCU scheme arrangements are essentially sound'.[8] Despite the categorical nature of this finding, the review panel recommended substantial changes to improve the governance of the carbon offset scheme. These changes include:

- replacing the existing integrity committee that evaluates methods (the Emissions Reduction Assurance Committee (ERAC)) with a new Carbon Abatement Integrity Committee, which would have a fulltime chair and independent secretariat (something the ERAC does not have);
- removing the Clean Energy Regulator's method development and purchasing powers so it is returned to performing exclusively regulatory functions (i.e. ensuring compliance with and enforcement of scheme rules);
- amending the CFI Act to ensure there is greater transparency; and
- amending the CFI Act to ensure that methods can only be made (or varied) if they satisfy the offsets integrity standards.[9]

These governance reforms are welcome and should lead to significant improvements in the operation of the scheme if they are properly implemented. However, the governance reforms do not go far enough in several key areas, including transparency, the involvement of financially disinterested third parties, and access to justice. Most notably:

a. the panel does not explicitly recommend the release of key information needed to assess the integrity of individual projects, including crediting period details, offset reports, audit reports and the location of the areas that are credited under land sector projects (known as carbon estimation areas (CEAs)); and

b. the panel also does not recommend the amendment of the legislation to promote access to justice through the inclusion of 'open standing' provisions.

At present, the regulation of the market is the exclusive domain of the Clean Energy Regulator. This increases administrative risks and the threat of regulatory capture. It has long been recognised that allowing third parties to initiate enforcement proceedings to uphold the law, and to seek judicial review of administrative decisions, can help improve the effectiveness of regulatory systems.[10]

[8] Chubb, I., Bennett, A., Gorring, A., Hatfield-Dodds, S. (2022) Independent Review of ACCUs. Department of Climate Change, Energy, the Environment and Water, Canberra, at 2.

[9] This involves three steps: methods must be endorsed by the Carbon Abatement Integrity Committee; the Carbon Abatement Integrity Committee can only endorse methods where they meet the offsets integrity standards; and the minister can only make a method where they are satisfied it satisfies the offsets integrity standards. See Chubb, I. et al. (2022) Independent Review of ACCUs. Department of Climate Change, Energy, the Environment and Water, Canberra, at 10.

[10] Sax, J. (1971) Defending the Environment: A Strategy for Citizen Action. Alfred A. Knopf Inc., New York; Mossop, D. (1995) Citizen Suits — Tools for Improving Compliance with Environmental Laws. In: Gunningham, N., Norberry, J., McKillop, S. (eds), Environmental Crime: Proceedings of a Conference Held 1–3 September 1993, Hobart. Australian Institute of Criminology, Canberra; Australian Law Reform Commission (1985) Standing in Public Interest Litigation. ALRC Report No 27. Commonwealth of Australia, Canberra; Australian

Reflecting this, section 232 of the Australian Consumer Law (Schedule 2 of the *Competition and Consumer Act 2010*) allows Courts to grant injunctions to prevent or restrain breaches of the law 'on application by the regulator or any other person'. This is what is known as an open standing provision – it allows third parties to seek relief in courts without needing to satisfy the normal 'standing' requirements, which require applicants to be a person directly affected, a person aggrieved or a person with a special interest. The main federal environmental statute, the *Environment Protection and Biodiversity Conservation Act 1999* (Cth), contains similar provisions, which provide environmentalists and environmental organisations with standing to seek injunctions to restrain contraventions of the Act and judicial review of administrative decisions made under the Act.[11]

The CFI Act does not contain open standing provisions. This is a significant oversight. Carbon offset markets are inherently complex and are almost defined by asymmetries of information, where sellers and regulators have substantially more information on the characteristics of what is being purchased than potential buyers. Regulators also commonly have strong incentives to prioritise credit supply over integrity, both to demonstrate program effectiveness and to put downward pressure on offset prices. These asymmetries of information and conflicting regulatory incentives leave carbon markets vulnerable to fraud, manipulation and maladministration. While not a complete cure for these issues, open standing provisions can lessen the scope for regulatory failure and market manipulation by allowing third parties to play a role in upholding the law.

3.2 The review panel's findings and recommendations on the methods and the integrity of ACCUs

The review panel dismissed the concerns raised by the ANU-UNSW ERF research team and others on the scheme's main methods, concluding that the level of abatement has not been overstated.[12] In his public comments, Professor Chubb expanded on this conclusion, stating that 'we have no reason to believe that there are substantial numbers of ACCUs not credible at the moment',[13] a 'high proportion' of the projects are on track to achieve the intended outcomes,[14] and a 'substantial number of [projects] … are doing what the scheme intended them to do'.[15]

Law Reform Commission (1996) Beyond the Doorkeeper: Standing to Sue for Public Remedies. ALRC Report No 78. Commonwealth of Australia, Canberra.

[11] *Environment Protection and Biodiversity Conservation Act 1999* (Cth), ss 475 and 487.

[12] Chubb, I. et al. (2022) Independent Review of ACCUs. Department of Climate Change, Energy, the Environment and Water, Canberra, at 2.

[13] Chubb, I (2023) Transcript – Doorstop Interview, Taronga Zoo, Sydney, Monday 9 January 2023. Independent Review of ACCUs.

[14] Chubb, I (2023) 'Carbon credit scheme review dismisses claims it lacks integrity'. Radio National (RN) Breakfast. Australian Broadcasting Corporation. 10 January 2023. Available at: https://www.abc.net.au/radionational/programs/breakfast/carbon-credit-scheme-review-dismisses-claims-it-lacks-integrity/101839390 (23 January 2023).

[15] Chubb, I (2023) 'Carbon credit scheme review dismisses claims it lacks integrity'. Radio National (RN) Breakfast. Australian Broadcasting Corporation. 10 January 2023. Available at: https://www.abc.net.au/radionational/programs/breakfast/carbon-credit-scheme-review-dismisses-claims-it-lacks-integrity/101839390 (23 January 2023).

The review panel's findings on the methods are unsubstantiated and incomplete, and its recommendations are tortured, whereby they do not explicitly state there are any problems but implicitly acknowledge the underlying issues and recommend they be fixed.

3.2.1 Unsubstantiated findings on the methods

In its report, the panel's discussion of the three main methods (human-induced regeneration, landfill gas and avoided deforestation) is limited to five pages. The report does not ask or try to answer any of the eight questions the ANU-UNSW research team recommended be assessed to reach a judgment on the integrity of these methods.[16] It does not describe, or even mention, the approach the panel used to evaluate the methods and reach their conclusions. It does not present analysis or evidence related to the methods or their operation. It does not even refer to the Australian Academy of Science report that it commissioned on the methods, which identified several concerns and limitations with the human-induced regeneration and landfill gas methods.[17]

The executive summary to the panel's report states:

> In recent times, the integrity of the scheme has been called into question – it has been argued that the level of abatement has been overstated, that ACCUs are therefore not what they are meant to be, so that the policy is not effective. The Panel does not share this view. While the Panel was provided with some evidence supporting that position, it was also provided with evidence to the contrary.[18]

A summary of the integrity issues with the three main methods and the evidence presented to the review panel on these issues is provided in **Appendix A**. While the panel says it was provided with contrary evidence, it does not disclose this evidence or describe its general nature or sources.

3.2.2 Incomplete findings on the methods

The terms of reference required the panel to 'evaluate and advise on … [w]hether the methods by which ACCUs are generated meet the Offsets Integrity Standards, including consideration of recent claims raised about the Human Induced Regeneration, Carbon Capture and Storage, Avoided Deforestation, and Landfill Waste Gas methods' [Emphasis added].

In Professor Chubb's public comments about the scheme, where he claimed a 'high proportion' of the projects are on track to achieve the intended outcomes[19] and a 'substantial number of [projects] … are doing what the scheme intended them to do',[20] he suggested that the evidence to support

---

[16] These are detailed in: Butler, D. et al. (2022) Australian National University (ANU)-University of New South Wales (UNSW) ERF research team submission to the Chubb Review. Available at: https://consult.dcceew.gov.au/independent-review-of-accu/submission/list (24 January 2023).

[17] Australian Academy of Science (2022) Review of Four Methods of Generating Australian Carbon Credit Units. Report for the Department of Climate Change, Energy, the Environment and Water. Canberra.

[18] Chubb, I. et al. (2022) Independent Review of ACCUs. Department of Climate Change, Energy, the Environment and Water, Canberra, at III.

[19] Chubb, I (2023) 'Carbon credit scheme review dismisses claims it lacks integrity'. Radio National (RN) Breakfast. Australian Broadcasting Corporation. 10 January 2023. Available at: https://www.abc.net.au/radionational/programs/breakfast/carbon-credit-scheme-review-dismisses-claims-it-lacks-integrity/101839390 (23 January 2023).

[20] Chubb, I (2023) 'Carbon credit scheme review dismisses claims it lacks integrity'. Radio National (RN) Breakfast. Australian Broadcasting Corporation. 10 January 2023. Available at:

these statements consisted of 'advice from the Clean Energy Regulator', previous reviews of the methods and scheme, and the public submissions to the review, particularly those from people participating in the scheme.[21] From what is on the public record, it appears the panel did not conduct independent analysis of the administration of the methods and instead relied on the assurances provided by the Clean Energy Regulator and some scheme participants that everything was largely functioning as intended, even though the largest scheme participants have openly acknowledged there are problems (see footnote 6).

Not only did the review panel fail to substantiate its findings on the methods, contrary to the terms of reference it did not comment on whether the landfill gas, avoided deforestation and carbon capture and storage methods meet the offset integrity standards.

- On the landfill gas method, the panel recommended that the '[l]andfill gas methods and crediting period extensions should incorporate upward sloping baselines'[22] – as the ANU-UNSW ERF research team and the main landfill gas operators have consistently argued.[23] Despite recommending this change, the panel did not comment on whether the method meets the offsets integrity standards.
- For the avoided deforestation method, the panel recommended 'no new project registrations be allowed under the current avoided deforestation method'[24] – again, as the ANU-UNSW ERF research team and others have argued.[25] To give effect to this recommendation, the Australian Government will need to revoke the method. Despite effectively recommending the method be revoked, the panel did not explicitly comment on whether the avoided deforestation method currently meets the offsets integrity standards.

https://www.abc.net.au/radionational/programs/breakfast/carbon-credit-scheme-review-dismisses-claims-it-lacks-integrity/101839390 (23 January 2023).

[21] Chubb, I (2023) 'Carbon credit scheme review dismisses claims it lacks integrity'. Radio National (RN) Breakfast. Australian Broadcasting Corporation. 10 January 2023. Available at: https://www.abc.net.au/radionational/programs/breakfast/carbon-credit-scheme-review-dismisses-claims-it-lacks-integrity/101839390 (23 January 2023).

[22] Chubb, I. et al. (2022) Independent Review of ACCUs. Department of Climate Change, Energy, the Environment and Water, Canberra, at 24.

[23] Macintosh, A. (2022) The Emissions Reduction Fund's Landfill Gas Method: An Assessment of its Integrity. The Australian National University, Canberra. Available at: https://law.anu.edu.au/research/publications (24 January 2023); LMS Energy, Cleanaway Waste Management, Veolia and EDL Ltd (2022) The Emissions Reduction Fund Landfill Gas Method – Joint Letter to Senator David Pocock, 1 September 2022; [Landfill Gas Operator 1 – name withheld] and Macintosh, A. (2022) Independent Review of Australian Carbon Credit Units. Joint Letter to Professor Ian Chubb. 29 July 2022; and [Landfill Gas Operator 2 – name withheld] and Macintosh, A. (2022) Independent Review of Australian Carbon Credit Units. Joint Letter to Professor Ian Chubb. 4 August 2022.

[24] Chubb, I. et al. (2022) Independent Review of ACCUs. Department of Climate Change, Energy, the Environment and Water, Canberra, at 23.

[25] Butler, D. et al. (2022) Australian National University (ANU)-University of New South Wales (UNSW) ERF research team submission to the Chubb Review. Available at: https://consult.dcceew.gov.au/independent-review-of-accu/submission/list (24 January 2023); Merzian, R., Hemming, P., Schoo, A. (2021) Non-additionality in the Emissions Reduction Fund's Avoided Deforestation Method. Australian Conservation Foundation and The Australia Institute, Melbourne.

- On the carbon capture and storage method, the panel merely found that, '[while there has been relatively limited deployment of carbon capture and storage (CCS) nationally or globally, it is considered to have an important potential contribution to limiting the pace and extent of climate change'.[26] No recommendations, findings or opinions of any kind were offered on the method or its integrity.

3.2.3 Tortured recommendations

Possibly the most confusing aspect of the review panel's report is that it simultaneously rejects the notion there are problems with the methods, while implicitly acknowledging the problems and recommending they be fixed. This tortured approach was adopted on each of the three main methods.

3.2.3.1 Landfill gas

Under the landfill gas methods, landfill gas projects receive ACCUs for capturing and combusting the methane (CH_4) component of the biogas emitted from solid waste landfills. Burning CH_4 converts it to carbon dioxide (CO_2) and water (H_2O), neutralising its warming effects. Projects combust the CH_4 using either a flare or an electricity generator.

The integrity problem with the landfill methods relates almost exclusively to the larger projects that use electricity generators to combust CH_4. Many of these larger projects are receiving a substantial number of ACCUs for combusting CH_4 that they would have combusted anyway, without the incentive provided by the scheme (i.e. there is an additionality problem). The reason these sites would capture and combust CH_4 without ACCUs are that:

a. landfill operators are legally required to capture and treat a proportion of the biogas emitted from their sites under state and territory environmental laws to address odour and safety risks; and

b. larger landfill gas projects can be run at a profit solely from the sale of electricity and renewable energy certificates (large-scale generation certificates, LGCs).[27]

The landfill gas methods use project-specific baselines to address the additionality risks associated with the projects. The baseline is a prescribed proportion of the gas captured and combusted at each site. ACCUs are not issued for this baseline proportion – it is deducted from the total amount of CH_4 combusted at the site when calculating the credited abatement. For example, if a project has a 30% baseline and combusts 100 tonnes of greenhouse gases in a reporting year, it will be credited for burning 70 tonnes.

There are two problems with the baselines in the methods.

- In principle, they are only intended to reflect the regulatory obligations imposed on landfill operators to manage biogas emissions for odour and safety reasons. Due to this, they do not

[26] Chubb, I. et al. (2022) Independent Review of ACCUs. Department of Climate Change, Energy, the Environment and Water, Canberra, at 25.
[27] Macintosh, A. (2022) The Emissions Reduction Fund's Landfill Gas Method: An Assessment of its Integrity. The Australian National University, Canberra. Available at: https://law.anu.edu.au/research/publications (24 January 2023).

account for the non-ACCU related financial incentives for capturing and combusting biogas (i.e. revenues from the sale of electricity and large-scale generation certificates (LGCs)).

- Older projects (which account for the majority of credits) have been allowed to grandfather over baselines from schemes that operated in the 2000s that do not even appropriately account for the legal obligations that landfill operators have to manage biogas emissions. When the original method was first created, the industry accepted that the default minimum baseline should be 30%, based solely on state and territory regulatory requirements.[28] Most of the larger generation projects have been allowed to grandfather over baselines that are below 30%. The grandfathering of these historic baselines has now occurred three times (in 2011-12, 2014-15 and 2021-22), despite the Emissions Reduction Assurance Committee recommending in 2018 that these projects should receive no further crediting period extensions.[29]

The review panel's recommendation on the landfill gas method was that:

> [l]andfill gas methods and crediting period extensions should incorporate upward sloping baselines. … The baseline of new landfill gas projects and crediting period extensions of existing projects should be adjusted during the lifespan of the project. … Arrangements should be made for the early review and voluntary adjustment to the baseline of existing projects.[30]

Implicit in the recommendation for the early review of the baselines is the acceptance that the existing baselines are problematic; otherwise they would not require early review. The recommendation for upward sloping baselines also implicitly endorses the notion that the baselines of some projects are too low.

This should not be controversial because landfill gas operators that account for more than 90% of registered projects have expressly stated that they support the development of an increased baseline setting framework for landfill gas projects, acknowledging the current problem and the importance of integrity to the market.[31] The panel's report even explicitly acknowledges that '[i]ndustry expressed strong support for adjusting baselines through a transparent and predictable approach'.[32]

---

[28] Macintosh, A. (2022) The Emissions Reduction Fund's Landfill Gas Method: An Assessment of its Integrity. The Australian National University, Canberra. Available at: https://law.anu.edu.au/research/publications (24 January 2023).

[29] Emissions Reduction Assurance Committee (2018) Landfill Gas Method Crediting Period Review Report. Commonwealth of Australia, Canberra.

[30] Chubb, I. et al. (2022) Independent Review of ACCUs. Department of Climate Change, Energy, the Environment and Water, Canberra, at 24.

[31] LMS Energy, Cleanaway Waste Management, Veolia and EDL Ltd (2022) The Emissions Reduction Fund Landfill Gas Method – Joint Letter to Senator David Pocock, 1 September 2022; [Landfill Gas Operator 1 – name withheld] and Macintosh, A. (2022) Independent Review of Australian Carbon Credit Units. Joint Letter to Professor Ian Chubb. 29 July 2022; and [Landfill Gas Operator 2 – name withheld] and Macintosh, A. (2022) Independent Review of Australian Carbon Credit Units. Joint Letter to Professor Ian Chubb. 4 August 2022.

[32] Chubb, I. et al. (2022) Independent Review of ACCUs. Department of Climate Change, Energy, the Environment and Water, Canberra, at 24. There are number of peculiar aspects of the panel's 1-page discussion of the landfill gas methods, including: (a) its failure to mention the need for the baselines to account

The review panel's discussion of the issues with the landfill methods do not explicitly acknowledge the problematic nature of the existing baselines, whilst simultaneously implicitly accepting they are too low and need to be raised. The panel's recommendation is made more confusing by the fact it proposes that the adoption of the new baselines be optional for existing projects – an extraordinary suggestion for a financial product where the integrity of the embodied abatement is essential to the product's quality and ensuring consumers are not misled. Voluntary adoption of revised baselines would effectively prioritise the financial interests of existing project proponents over the integrity and cost-effectiveness of Australia's climate policy.

3.2.3.2 Avoided deforestation

The avoided deforestation method provides ACCUs to landholders in western New South Wales for not clearing forests that were authorised to be cleared under a specific type of clearing permit, known as an invasive native species property vegetation plan (INS PVP). The integrity issue with the method relates to additionality: are landholders being given ACCUs for not clearing forests they were unlikely to clear in the foreseeable future?

The requirement for areas that are credited under the method to be covered by an INS PVP was intended to address this additionality risk. The logic was that landholders who applied for and obtained an INS PVP were likely to use it. The problem was that landholders had incentives, and were encouraged, to obtain INS PVPs to gain an *option* to clear, even when they had no plans to clear the land in the foreseeable future. This resulted in permits being significantly over-allocated, authorising the treatment of a substantially greater area than was likely to be cleared within the 15-year term of the permits.[33] This is the essence of the problem; the fact that an area of land was covered by an INS PVP does not mean it was likely to be cleared.

Based on the official documents concerning the method, the ANU-UNSW ERF research team, Australian Conservation Foundation and The Australia Institute have argued the method is based on the assumption that landholders with INS PVPs would clear the forests within 15 years, corresponding with the term of the permits.[34] The Clean Energy Regulator and others, in response to criticisms of the method, have denied it is based on the 15-year clearing assumption, claiming

---

for the other financial incentives for capturing and combusting biogas (financial additionality provides the main rationale for upward sloping baselines because of the economies of scale associated with landfill gas projects); (b) its suggestion it has become 'common practice to extend the crediting period for landfill gas projects without adjustment of the baseline' (at 24) (even though the Emissions Reduction Assurance Committee explicitly recommended otherwise in 2018); and (c) its suggestion that the panel heard that the concessional baselines used by older sites 'do not … create a financial incentive for project operators to go beyond the regulatory minimum' (at 24).

[33] Butler, D. et al. (2022) Australian National University (ANU)-University of New South Wales (UNSW) ERF research team submission to the Chubb Review. Available at: https://consult.dcceew.gov.au/independent-review-of-accu/submission/list (24 January 2023); Merzian, R., Hemming, P., Schoo, A. (2021) Non-additionality in the Emissions Reduction Fund's Avoided Deforestation Method. Australian Conservation Foundation and The Australia Institute, Melbourne.

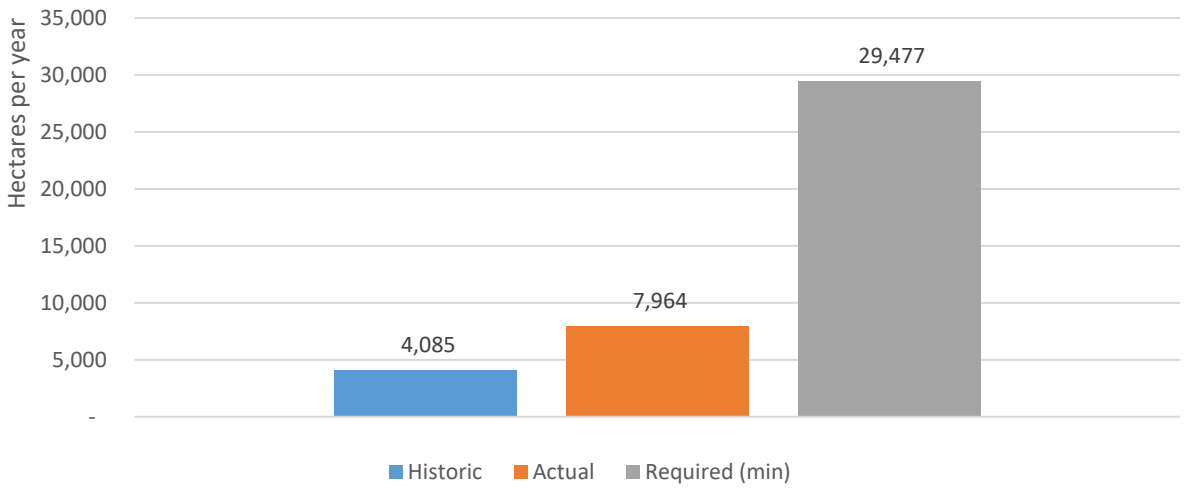
[34] Butler, D. et al. (2022) Australian National University (ANU)-University of New South Wales (UNSW) ERF research team submission to the Chubb Review. Available at: https://consult.dcceew.gov.au/independent-review-of-accu/submission/list (24 January 2023); Merzian, R., Hemming, P., Schoo, A. (2021) Non-additionality in the Emissions Reduction Fund's Avoided Deforestation Method. Australian Conservation Foundation and The Australia Institute, Melbourne.

instead that the method assumes the forests were likely to be cleared at some undefined time over the next 100 years.

The period over which the forests are assumed to be cleared is important because it provides the benchmark against which the conservativism of the method's key assumption regarding the likelihood of clearing in the absence of the projects is assessed. Most relevantly, for the assumption that the eligible forests would have been cleared within 15 years without the projects to be valid, the rate of agricultural-related clearing in the Western Local Land Services region of New South Wales—which contains 94% of the eligible approved INS PVP treatment area and approximately 92% of the combined area of avoided deforestation projects—would need to have jumped from the 1988-2010 average of 4,085 hectares per year to a minimum of 29,477 hectares per year, and stay there for 15 consecutive years (**Figure 1**).[35]

Over the entire time series of the NSW Statewide Landcover and Tree Study (SLATS), which runs from 1988 to 2020, agriculture-related clearing across the whole of the state has only ever exceeded 29,477 hectares per year on two occasions: 1988 and 1989.[36] An increase of this magnitude for 15 consecutive years is not plausible and far from conservative, as the CFI Act requires.[37]

Figure 1. Western Local Land Services region, average historic agriculture-related clearing rate (1988-2010), average actual agriculture-related clearing rate (2017-2020), and minimum region-wide required clearing rates for the 15-year clearing assumption to hold



Source: NSW Department of Planning and Environment (2022) Results Woody Vegetation Change, Statewide Landcover and Tree Study (SLATS) 2020. NSW Government, Sydney.

[35] Butler, D. et al. (2022) Australian National University (ANU)-University of New South Wales (UNSW) ERF research team submission to the Chubb Review. Available at: https://consult.dcceew.gov.au/independent-review-of-accu/submission/list (24 January 2023).

[36] The 1988 and 1989 estimates are averages from the two-year period. It is possible one of these years was less than 29,477 hectares per year. Department of Planning and Environment (2022) Woody vegetation change Statewide Landcover and Tree Study. NSW Government, Sydney. Available at: https://www.environment.nsw.gov.au/topics/animals-and-plants/native-vegetation/landcover-science/2020-landcover-change-reporting (24 January 2023).

[37] CFI Act, s 133(1)(g).

In justifying its recommendation for no new project registrations to be allowed under the current avoided deforestation method, the review panel stated that:

> [t]he length of time that has elapsed since the issue of any remaining unused land clearing permits imply that it would be hard to establish intent to clear land, raising questions about the additionality of any new projects that might be registered under the current method.[38]

While not explicitly acknowledging it, the panel's rationale implicitly accepts that the integrity of the method hinges on the assumption that the forests would be cleared within the term of the INS PVPs. If this was not the case, there would be no need to recommend that no new project registrations to be allowed under the method (which requires that the method be revoked). The fact the remaining INS PVPs are due to expire would be irrelevant, particularly given that, in most cases, landholders no longer need government approvals to legally carrying out the type of clearing authorised under INS PVPs.[39]

The panel's implicit acceptance that the integrity of the method hinges on the 15-year clearing assumption makes it difficult to avoid the conclusion that the ACCUs issued under the method are 'high risk' credits; that is, there is a significant risk they do not represent additional abatement. By any measure, it is not conservative to assume that, in the absence of the ability to earn ACCUs, the deforestation rate in western New South Wales would have increased to more than 700% of the historic average, at a minimum, for 15 consecutive years.

3.2.3.3 Human-induced regeneration (HIR)

Human-induced regeneration projects ('HIR projects') are supposed to involve the regeneration of permanent even-aged native forests through changes in land management practices, particularly the cessation of clearing and reducing grazing pressure by livestock and feral animals. The projects do not involve planting seedlings or seeds – proponents are expressly prohibited from planting trees. The forests are supposed to grow through natural regeneration from soil seed stock, in situ seedlings, rootstock and lignotubers as a consequence of changes in land management.[40]

Integrity problems with HIR projects

The ANU-UNSW ERF research team's primary concern has been that the method has not been applied in accordance with its original intent: to incentivise the regeneration of native forests by allowing juvenile trees and shrubs to regrow in areas that were previously cleared.[41] This has not

---

[38] Chubb, I. et al. (2022) Independent Review of ACCUs. Department of Climate Change, Energy, the Environment and Water, Canberra, at 23.

[39] *Local Land Services Act 2013* (NSW); and *Land management (Native Vegetation) Code 2018* (NSW).

[40] *Carbon Credits (Carbon Farming Initiative) (Human-Induced Regeneration of a Permanent Even-Aged Native Forest—1.1) Methodology Determination 2013*, s 3.

[41] Macintosh, A., Butler, D., Evans, M. C., Larraondo, P., Ansell, D., Gibbons, P. (2022) The ERF's Human-induced Regeneration (HIR): What the Beare and Chambers Report Really Found and a Critique of its Method. The Australian National University, Canberra; Macintosh, A., Butler, D., Ansell, D. (2022) Measurement Error in the Emissions Reduction Fund's Human-induced Regeneration (HIR) Method. The Australian National University, Canberra; Macintosh, A., Butler, D., Evans, M. C., Larraondo, P., Ansell, D., Waschka, M. (2022) Integrity and the ERF's Human-Induced Regeneration Method: The Additionality Problem Explained. The Australian National University, Canberra; Macintosh, A., Butler, D., Evans, M. C., Larraondo, P., Ansell, D., Waschka, M. (2022) Integrity and the ERF's Human-Induced Regeneration Method: The Measurement Problem Explained. The Australian National University, Canberra; Macintosh, A., Larraondo, P., Butler, D., Ansell, D., Waschka, M.,

been happening. The Clean Energy Regulator has misinterpreted and misapplied the method, which has resulted in almost all of the current projects (97% of the combined project area) being located in semi-arid and arid areas (less than 350 mm average annual rainfall) that have never been comprehensively cleared.

For the establishment of HIR projects in these areas to make any sense, grazing would need to be responsible for dramatically reducing the prevalence of trees and shrubs in Australia's rangelands and it would have to be possible to regenerate these 'lost forests' by reducing grazing pressure. Neither of these are true.

For more than 30 years, there has been a heated debate in ecological and natural resource management circles about the causes of 'woody thickening' (or increasing density of native trees and shrubs) in grazing areas.[42] The two dominant and competing hypothesis are that: (1) woody thickening is caused by grazing and an accompanying reduction in burning in grazed rangelands; or (2) it is cyclical phenomena caused by periods of above and below average rainfall in water constrained ecological systems, so that woody vegetation slowly accumulates through time, especially following regeneration events triggered by runs of wet years, until its density is sufficient for a drought to 'reset' woody plant populations to a lower density. The animosity between the

Evans, M. C. (2022) Trends in forest and sparse woody cover inside ERF HIR project areas relative to those in surrounding areas. The Australian National University, Canberra. Copies of these papers are available at: https://law.anu.edu.au/research/publications (24 January 2023). See also Butler, D. et al. (2022) Australian National University (ANU)-University of New South Wales (UNSW) ERF research team submission to the Chubb Review. Available at: https://consult.dcceew.gov.au/independent-review-of-accu/submission/list (24 January 2023).

[42] Fensham, R., Fairfax, R., Dwyer, J. (2012) Potential aboveground biomass in drought-prone forest used for rangeland pastoralism. Ecological Applications 22(3), 894–908; Fensham, R., Laffineur, B., Allen, C. (2018) To what extent is drought-induced tree mortality a natural phenomenon? Global Ecology and Biogeography 28, 365–373; Silcock, J., Fensham, R. (2019) Degraded or Just Dusty? Examining Ecological Change in Arid Lands. BioScience 69(7), 508-522; Witt, G., Harrington, R., Page, M. (2009) Is "vegetation thickening" occurring in Queensland's Mulga Lands? A 50-year aerial photographic analysis. Australian Journal of Botany 57, 572–582; Silcock, J., Piddocke, T., Fensham, R. (2013) Illuminating the dawn of pastoralism: evaluating the record of European explorers to inform landscape change. Biological Conservation 159, 321–331; Silcock, J., Drimer, J., Fraser, J., Fensham, R. (2017) Inability of fire to control vegetation dynamics in low-productivity mulga (Acacia aneura)-dominated communities of eastern Australia. International Journal of Wildland Fire 26, 896–905; Beale, I. (2004) Tree and shrub thickening in the Murweh Shire. Report to the Productivity Commission. Productivity Commission, Canberra. Available at: https://www.pc.gov.au/inquiries/completed/native-vegetation/murweh3/murweh3.pdf (24 January 2023); Science and Information Board (2004) Clearing/thinning of native vegetation known as invasive native scrub under the Native Vegetation Act 2003: Discussion Paper. NSW Department of Infrastructure, Planning and Natural Resources, Sydney; Science and Information Board (2005) Clearing/thinning of native vegetation known as invasive native scrub under the Native Vegetation Act 2003: Collation of Discussion Paper submissions and responses from the Invasive Native Scrub Team. NSW Department of Natural Resources, Sydney; Noble, J. (1997) 'The delicate and noxious scrub'. CSIRO studies on native tree and shrub proliferation in the semi-arid woodlands of eastern Australia. CSIRO Publishing, Collingwood; Central West Catchment Management Authority and Western Catchment Management Authority (2010) Managing invasive native scrub to rehabilitate native pastures and open woodlands. A Best Management Practice Guide for the Central West and Western Catchments. NSW Government, Sydney; Western Local Land Services (2014) Managing invasive native scrub to rehabilitate native pastures and open woodlands. A Best Management Practice Guide for the Central West and Western Catchments. NSW Government, Sydney.

supporters of these competing hypotheses has been magnified by the fact that woody thickening has been used to explain and justify clearing for grazing purposes.[43]

Never in the 30 years of this debate has there been any material evidence or support for the notion that grazing alone (in the absence of clearing) has significantly reduced tree and shrub cover over vast areas of the rangelands; as would be necessary to justify the misapplication of the HIR method.

In certain circumstances, grazing pressure can materially reduce tree and shrub cover, including in regenerating vegetation following from clearing. However, cases where grazing transforms woody vegetation without prior clearing are exceptions, not the rule. Generally, negative impacts of grazing on tree and shrub cover are at the margins in native vegetation – grazing is not comparable to clearing. Even in previously cleared areas, grazing is often unable to stop regrowth without mechanical or chemical interventions to kill trees. This is why approximately 300,000-400,000 hectares of regrowth forest is cleared annually in Australia in areas that were previously cleared for grazing; if grazing was an effective suppressor, expensive mechanical and chemical clearing would not be necessary.[44]

The relatively limited impact of grazing, and the complex nature of the relationship between grazing, rainfall and changes in tree and shrub cover, is why the method was designed for cleared areas. This is reflected in numerous aspects of the method, including the following.

(1) The full legal title of the method, *Human-Induced Regeneration of a Permanent Even-Aged Native Forest*. It is only possible to get even-aged regeneration if the area has been comprehensively cleared or experienced a similar disturbance event that has removed all of its tree cover.

(2) The model that is used to estimate tree growth, or more formally, the sequestration associated with regeneration (Full Carbon Accounting Model, FullCAM), is an area-based model. It estimates biomass on a per hectare basis, and its use in HIR is calibrated on the assumption the areas being modelled do not contain pre-existing mature trees and shrubs (defined as more than 5% of the estimated maximum biomass carrying capacity of the site). Consistent with the original intent of the method, FullCAM is calibrated on the assumption that modelled areas were previously comprehensively cleared and that the project activities

[43] Beale, I. (2004) Tree and shrub thickening in the Murweh Shire. Report to the Productivity Commission. Productivity Commission, Canberra. Available at: https://www.pc.gov.au/inquiries/completed/native-vegetation/murweh3/murweh3.pdf (24 January 2023); Science and Information Board (2004) Clearing/thinning of native vegetation known as invasive native scrub under the Native Vegetation Act 2003: Discussion Paper. NSW Department of Infrastructure, Planning and Natural Resources, Sydney; Central West Catchment Management Authority and Western Catchment Management Authority (2010) Managing invasive native scrub to rehabilitate native pastures and open woodlands. A Best Management Practice Guide for the Central West and Western Catchments. NSW Government, Sydney; Western Local Land Services (2014) Managing invasive native scrub to rehabilitate native pastures and open woodlands. A Best Management Practice Guide for the Central West and Western Catchments. NSW Government, Sydney.

[44] Department of Climate Change, Energy, the Environment and Water (2022) 'Australia's National Greenhouse Accounts: Activity tables', available at: https://ageis.climatechange.gov.au/ (25 January 2023); Department of Environment and Science (2022) '2019–20 SLATS Report', available at: https://www.qld.gov.au/environment/land/management/mapping/statewide-monitoring/slats/slats-reports/2019-20-slats-report (25 January 2023).

are resulting in uniform, even-age regeneration of native forests across every hectare in the project's carbon estimation areas.

(3) The method does not control for the impacts of rainfall when estimating the abatement that is attributable to the project activities. It assumes all regeneration in eligible areas is attributable to the project activities, regardless of their nature and the location of the project. If the method was designed for areas that had not been comprehensively cleared, it would need to contain processes for ensuring that only regeneration that is attributable to the project activities is credited, and for excluding changes in tree and shrub cover that would have happened anyway because they are attributable to fluctuations in rainfall.

(4) The method contains provisions that were intended to largely exclude areas that had not been previously deforested through clearing. Most notably, under the method, land can only be included in an HIR project if:

- during the 10-years prior to the registration of the project, the development of forest cover on the land was suppressed by relevant activities (clearing, invasive plants or grazing by livestock or feral animals); and
- it is 'reasonable to expect that it would be necessary to undertake' the relevant project activities (e.g. stopping clearing and management of grazing pressure) in order for it to regenerate and attain forest cover.[45]

This is why the method does not control for the impacts of rainfall when estimating abatement – these eligibility requirements were intended to largely confine the eligible lands to areas that had previously been comprehensively cleared, where there is a high likelihood that any regeneration will be attributable to the project activities, particularly the cessation of cyclical reclearing to keep the land as pasture.

The primary problem is that the Clean Energy Regulator has failed to apply the requirements in (4) above in any meaningful way. The Regulator has not required projects to demonstrate that forest regeneration has been meaningfully suppressed by grazing (or anything else) in the 10-years prior to project registration, or that the proposed grazing control and other land management measures are likely to be necessary for the areas to achieve forest cover. The mere presence of grazing has been treated as sufficient to demonstrate suppression. Because of the way FullCAM is calibrated, and the fact the method does not control for the impacts of rainfall when estimating abatement, an inevitable consequence of allowing projects to include ineligible uncleared areas is that ACCUs will be issued for tree growth that is solely or predominantly due to rainfall rather than the project activities (i.e. tree and shrub growth that would have occurred anyway).

The implications of the Clean Energy Regulator's failure to properly apply the requirements in (4) above have been magnified by two additional errors.

- **ACCUs for growing trees that are already there**. Contrary to the rules, the Regulator has allowed proponents to include substantial amounts of pre-existing mature trees and shrubs in the areas that are credited (known as 'carbon estimation areas', CEAs) and where the

[45] *Carbon Credits (Carbon Farming Initiative) (Human-Induced Regeneration of a Permanent Even-Aged Native Forest—1.1) Methodology Determination 2013*, s 4(1)(c).

forests are supposed to be regenerating. This results in over-crediting because, as noted above, FullCAM is calibrated on the basis that credited areas do not contain pre-existing mature woody vegetation. FullCAM models the even-aged regeneration of a forest, even if the CEAs already contained mature trees and shrubs when the project started.

- **ACCUs for tree growth that has not occurred**. Contrary to the rules governing the application of FullCAM,[46] the Regulator does not appear to be requiring proponents to properly model natural disturbance events like droughts when they stop regeneration or cause significant tree mortality. In many cases, projects appear to have been credited as if there is uniform, even-age regeneration, even where there is evidence of a loss of tree cover.[47]

Review panel findings and recommendations on the HIR method

In contrast to its approach to the other methods, the panel made an explicit finding on whether the HIR method meets the offsets integrity standards, saying the 'HIR method is sound - it meets the OIS [offsets integrity standards] and is administered by a robust regulatory framework'.[48] It then made two key recommendations.

- 'Project administration for the human-induced regeneration (HIR) method should ensure that all HIR projects conform to its current intent: that it is reasonable to expect that the project area will become native forest, attain forest cover, and permanently store carbon as a direct result of project management actions'. [Emphasis added]
- 'The method should be interpreted as requiring: (a) evidence of a causal relationship between the nominated eligible HIR activity or activities and the dominant suppression mechanism(s) that occurred through the entirety of the baseline period; (b) demonstration that these suppressors are directly addressed by the HIR activity or activities throughout the life of the project; and (c) demonstration that the application of FullCAM is consistent with the guidelines. **Each project must meet these criteria before future ACCUs may be issued**'. [Emphasis added]

---

[46] *Carbon Credits (Carbon Farming Initiative) (Human-Induced Regeneration of a Permanent Even-Aged Native Forest—1.1) Methodology Determination 2013*, s 30(b); Department of Industry, Science, Energy and Resources (2020) FullCAM Guidelines. Requirements for using the Full Carbon Accounting Model (FullCAM) in the Emissions Reduction Fund (ERF) methodology determination: Carbon Credits (Carbon Farming Initiative) (Human Induced Regeneration of a Permanent Even Aged Native Forest—1.1) Methodology Determination 2013. Commonwealth of Australia, at 16-17.

[47] Macintosh, A., Butler, D., Evans, M. C., Larraondo, P., Ansell, D., Gibbons, P. (2022) The ERF's Human-induced Regeneration (HIR): What the Beare and Chambers Report Really Found and a Critique of its Method. The Australian National University, Canberra; Macintosh, A., Larraondo, P., Butler, D., Ansell, D., Waschka, M., Evans, M. C. (2022) Trends in forest and sparse woody cover inside ERF HIR project areas relative to those in surrounding areas. The Australian National University, Canberra. Copies of these papers are available at: https://law.anu.edu.au/research/publications (24 January 2023). See also Butler, D. et al. (2022) Australian National University (ANU)-University of New South Wales (UNSW) ERF research team submission to the Chubb Review. Available at: https://consult.dcceew.gov.au/independent-review-of-accu/submission/list (24 January 2023).

[48] Chubb, I. et al. (2022) Independent Review of ACCUs. Department of Climate Change, Energy, the Environment and Water, Canberra, at 21.

In its rationale for these recommendations, the panel states:

> [Human-induced regeneration] projects must, in an area of eligible land, undertake one or more HIR activities in a way that can reasonably be expected to result in (a) the area becoming native forest, and attaining forest cover through regeneration, and (b) eligible carbon abatement […]. **In practice this requires evidence that an area has in the past sustained native forest, as defined, but that this forest cover has been lost, and that regeneration has been prevented for a period (referred to as the baseline) by one or more defined HIR activities**. The ability of an area to regenerate – such as through rainfall following a drought – is thus not the primary focus. Instead, the focus is on establishing the activity or activities (referred to as suppressors) that prevent this regrowth attaining forest cover and providing permanent carbon sequestration.[49] [Emphasis added]

The panel's recommendations and findings establish four key eligibility tests for land to be included in HIR carbon estimation areas (**Table 1**).

The ANU-UNSW ERF research team largely agrees with the panel's recommendations and its proposed interpretation of the HIR method[50], and strongly supports the Panel's recommendation that crediting be halted until HIR projects can demonstrate they satisfy the method requirements.[51] By and large, the panel's commentary on the intent and interpretation of the method are consistent with the ANU-UNSW ERF research team's position regarding the proper application of the method. What the panel failed to do is acknowledge that this is not how the method is being interpreted and applied by the Clean Energy Regulator.

[49] Chubb, I. et al. (2022) Independent Review of ACCUs. Department of Climate Change, Energy, the Environment and Water, Canberra, at 21.

[50] The main thing missing from the panel's recommendations was an explicit statement that the areas that are credited must not contain pre-existing mature trees and shrubs (or at least that the pre-existing trees must not exceed 5% of the maximum carrying capacity of the land). However, this should be covered by the recommended interpretation of the eligibility requirements (8.1, p. 20). That is, mature trees will not be suppressed by grazing during the baseline period and their continued growth is unlikely to be contingent on controlling grazing pressure. Compliance with the stratification requirements in the guidelines should also ensure the exclusion of pre-existing mature trees and shrubs for older projects on the Reforestation Modelling Tool (RMT) version of the method: *Carbon Credits (Carbon Farming Initiative) (Human-Induced Regeneration of a Permanent Even-Aged Native Forest—1.1) Methodology Determination 2013* (https://www.legislation.gov.au/Details/F2015C00576). See Macintosh, A., Butler, D., Ansell, D. (2022) Measurement Error in the Emissions Reduction Fund's Human-induced Regeneration (HIR) Method. The Australian National University, Canberra, at 9-11.

[51] Chubb, I. et al. (2022) Independent Review of ACCUs. Department of Climate Change, Energy, the Environment and Water, Canberra, at 30.

Table 1. Eligibility requirements for land included in HIR carbon estimation areas

No.	Title	Requirement	Panel report reference
1.	Past forest cover	The land area must have sustained forest in the past and the forest must have been lost at some point from clearing or another event.	"In practice this requires evidence that an area has in the past sustained native forest, as defined, but that this forest cover has been lost." Chubb, I. et al. (2022) Independent Review of ACCUs, at 21.
2.	Suppression in baseline period	Regeneration must have been suppressed – stopped from regenerating – by grazing pressure or other relevant suppressor during the 10 years prior to the registration of the project (the 'baseline period').	"The method should be interpreted as requiring: (a) evidence of a causal relationship between the nominated eligible HIR activity or activities and the dominant suppression mechanism(s) that occurred through the entirety of the baseline period." "In practice this requires evidence that […] regeneration has been prevented for a period (referred to as the baseline) by one or more defined HIR activities. […] [T]he focus is on establishing the activity or activities (referred to as suppressors) that prevent this regrowth attaining forest cover and providing permanent carbon sequestration." Chubb, I. et al. (2022) Independent Review of ACCUs, at 20-21.
3.	Removal of suppressors necessary to achieve forest cover	It must be reasonable to expect the proposed reduction in grazing pressure, or other activities to address relevant suppressors, is necessary to regenerate the area.	"Project administration for the human-induced regeneration (HIR) method should ensure that all HIR projects conform to its current intent: that it is reasonable to expect that the project area will become native forest, attain forest cover, and permanently store carbon as a direct result of project management actions." "The method should be interpreted as requiring: (a) evidence of a causal relationship between the nominated eligible HIR activity or activities and the dominant suppression mechanism(s) that occurred through the entirety of the baseline period; (b) demonstration that these suppressors are directly addressed by the HIR activity or activities throughout the life of the project." Chubb, I. et al. (2022) Independent Review of ACCUs, at 20-21.
4.	Exclusion of mature trees from carbon estimation areas	The carbon estimation areas must not contain significant numbers of mature trees and shrubs at project commencement.	Above references and statement that, "The method should be interpreted as requiring: […] (c) demonstration that the application of FullCAM is consistent with the guidelines." Chubb, I. et al. (2022) Independent Review of ACCUs, at 20-21.

Administrative failings with HIR method

In contrast to the panel's suggestion that the HIR method is 'administered by a robust regulatory framework', it is clear that the Clean Energy Regulator has not been applying these four key eligibility requirements in any meaningful way. Projects are not required to demonstrate that the areas included in projects have previously sustained native forest. As discussed, the Clean Energy Regulator does not require proponents to demonstrate in any reasonable way that regeneration has been suppressed by grazing during the baseline period or that the measures that are proposed to be taken to reduce grazing pressure are necessary for the land to achieve forest cover. The test seems simply to have been that the land has not been forest and it has been grazed. Publicly available data also clearly show the Clean Energy Regulator has allowed proponents to include vast numbers of mature trees and shrubs in their carbon estimation areas.[52]

Despite evidence of administrative failings being brought to the panel's attention, it did not review any projects to assess compliance. It openly admits this, stating in its report that 'the Panel did not review individual projects'.[53] This raises the obvious question of how the panel reached its conclusion that the method is 'administered by a robust regulatory framework', and the evidentiary basis for the suggestions that a 'high proportion' of the projects are on track to achieve the intended outcomes[54] and a 'substantial number of [projects] … are doing what the scheme intended them to do'.[55] Had the panel evaluated any individual projects, it is highly likely that it would have found evidence of material problems.

Implications of proper application of the method

If the panel's recommendations on the HIR method are fully and properly implemented, it is likely to have profound implications for existing projects and the ACCUs they are able to generate. Due to a lack of transparency, it is difficult to determine the quantum of the impacts with certainty.[56] However, given the location of the projects—most notably the fact that 97% of the combined project area is located in areas that have never been comprehensively cleared—the full implementation of the panel's recommendations could reduce the eligible HIR areas by more than 90%. Where carbon estimation areas are found to include ineligible land, no further ACCUs should

[52] See Beare, S., Chambers, R. (2021) Human induced regeneration: A spatiotemporal study. AnalytEcon Pty Ltd, Berry, NSW. The data are discussed in Macintosh, A., Butler, D., Evans, M. C., Larraondo, P., Ansell, D., Gibbons, P. (2022) The ERF's Human-induced Regeneration (HIR): What the Beare and Chambers Report Really Found and a Critique of its Method. The Australian National University, Canberra.

[53] Chubb, I. et al. (2022) Independent Review of ACCUs. Department of Climate Change, Energy, the Environment and Water, Canberra, at 21.

[54] Chubb, I (2023) 'Carbon credit scheme review dismisses claims it lacks integrity'. Radio National (RN) Breakfast. Australian Broadcasting Corporation. 10 January 2023. Available at: https://www.abc.net.au/radionational/programs/breakfast/carbon-credit-scheme-review-dismisses-claims-it-lacks-integrity/101839390 (23 January 2023).

[55] Chubb, I (2023) 'Carbon credit scheme review dismisses claims it lacks integrity'. Radio National (RN) Breakfast. Australian Broadcasting Corporation. 10 January 2023. Available at: https://www.abc.net.au/radionational/programs/breakfast/carbon-credit-scheme-review-dismisses-claims-it-lacks-integrity/101839390 (23 January 2023).

[56] The key issue here is that the precise locations of the carbon estimation areas are not in the public domain, largely due to the 'protected information' provisions of the CFI Act and the refusal of proponents to release the data. See CFI Act, Part 27.

be issued in relation to these areas. Moreover, proponents could be required to surrender an equivalent number of ACCUs as have been issued in relation to these ineligible areas.[57]

Whether the method requirements are properly applied depends on the Clean Energy Regulator. To date, the Clean Energy Regulator has refused to admit there are any problems with the scheme or its administration, including with the interpretation and application of the HIR method. This behaviour does not inspire confidence that the panel's recommendations will be fully and properly implemented.

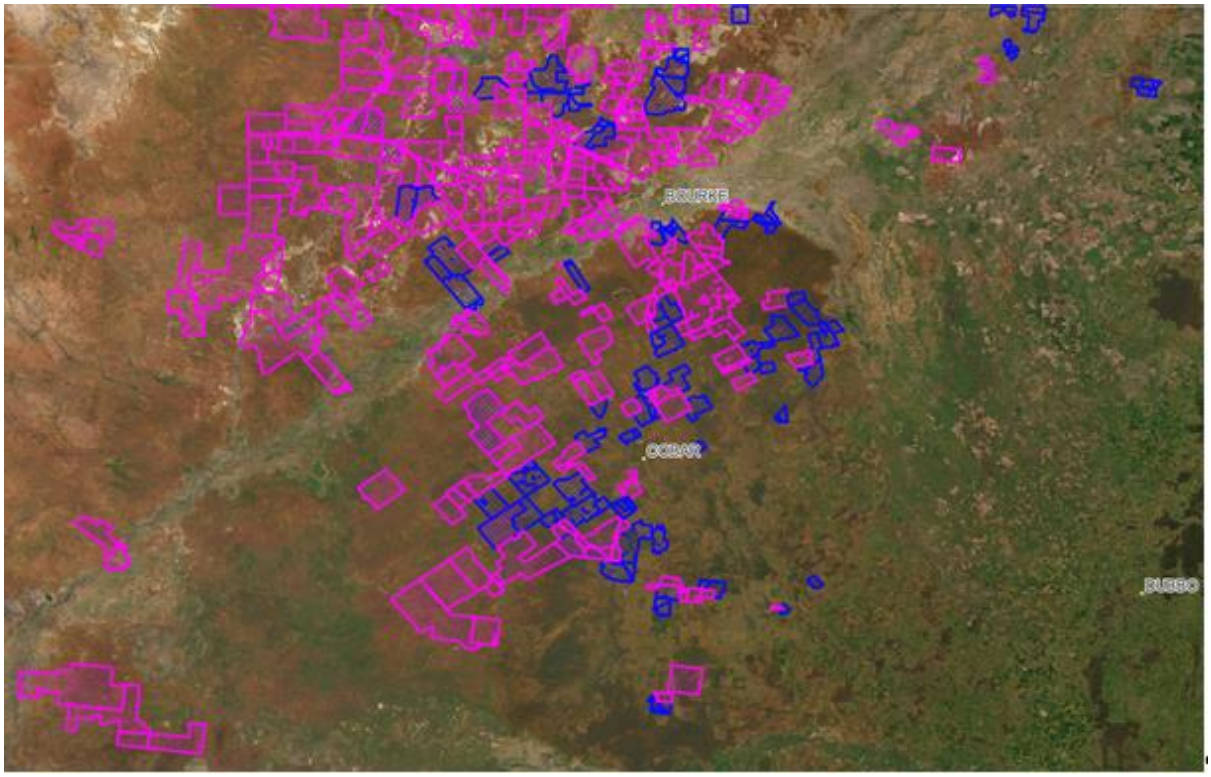
The panel's recommendations are also at risk of being bypassed if existing HIR projects are allowed to transfer onto the proposed Integrated Farm Method. This could overcome the legal noncompliance issues associated with existing projects, allowing them to continue to generate ACCUs for abatement that is generally neither real nor additional.

Until there are material changes in administration, the untenable situation will persist where two of the offset scheme's largest project types co-exist, side-by-side in western New South Wales on adjacent lands (Figure 2), each based on diametrically opposing views about the impacts of grazing on tree and shrub growth in uncleared rangeland areas:

- HIR projects receiving ACCUs based on the notion that grazing has caused widespread suppression of tree and shrub growth; and
- avoided deforestation projects receiving ACCUs based on the notion they would have been cleared because grazing (and associated changes the frequency and intensity of fires) has caused widespread woody thickening and the clearing is necessary to address land degradation.

[57] CFI Act, s 88.

Figure 2. Distribution of the active HIR (pink) and Avoided Deforestation (blue) projects, January 2023



Source: Clean Energy Regulator (2023) 'Emissions Reduction Fund project register'. Commonwealth of Australia, Canberra. Available at: https://www.cleanenergyregulator.gov.au/ERF/project-and-contracts-registers/project-register (18 January 2023).

4. Implications of the review

The Albanese Government agreed in principle to all of the review's recommendations and it indicated it would consult with interested stakeholders on the implementation of the recommendations and associated legislative amendments.[58]

If they are implemented fully and professionally, the governance reforms, and several of the method recommendations, **should substantially improve the integrity of new projects**, ensuring that the ACCUs from these projects represent real and additional abatement. This is a positive.

The key flaw in the proposed reforms is that they could largely leave existing projects untouched. There are currently more than 1,400 registered projects, 565 of which are registered under the three main methods.[59] The remaining projects are registered under methods that have not been properly evaluated, a number of which have known integrity problems (e.g. plantations and the measured soil carbon methods). To date, no measures have been proposed to evaluate the integrity of these methods or their projects.

[58] Bowen, C. (2023) Government welcomes Independent Review of ACCUs. Media Release. Commonwealth of Australia, Canberra. Available at: https://minister.dcceew.gov.au/bowen/media-releases/government-welcomes-independent-review-accus (24 January 2023).

[59] There are approximately 110 discrete landfill gas projects but there are 133 on the project register due to upgrades and other transitional issues. The total number is used here to match the data in the project register.

Similarly, the panel's recommendations on the three main methods could have no, or very limited, impact on the projects that are currently registered under them. The review was supposed to restore confidence and certainty in the carbon offset market. It has so far failed to do this, largely because of the review panel's tortured recommendations that do not explicitly acknowledge the integrity issues with existing projects, and the consequential inability to chart a clear path forward to deal with them. Due to this, **there is the very real prospect that existing projects will be allowed to continue to generate ACCUs in accordance with current practice**. If this eventuated, it would significantly and adversely affect the Safeguard Mechanism's capacity to drive down Australia's emissions.

Measures are needed to mitigate the risk that low integrity ACCUs pose to the Safeguard Mechanism and to ensure improvements are made to the carbon offset scheme. These measures are discussed in an accompanying paper[60].

[60] Macintosh A., Butler, D., Evans, M.C., Waschka, M., Ansell, D. (2023). Implications of the Independent Review of Australian Carbon Credit Units (ACCUs) and low integrity ACCUs for Australia's Safeguard Mechanism. The Australian National University, Canberra.

Appendix A Description of main methods, integrity issues and key evidence received by review panel concerning integrity problems

Method	Method description, integrity issues and evidence of problems
Human-induced regeneration (HIR)	**Method description:** HIR provides landholders with ACCUs for regenerating native forests by changing land management practices. Most projects are relying on reducing grazing pressure from livestock and feral animals to regenerate forests that have never been comprehensively cleared in arid and semi-arid rangeland areas. **Integrity issue 1 (Additionality)**: Proponents are getting ACCUs for tree growth that is solely or predominantly due to rainfall rather than the project activities (i.e. reducing grazing pressure). This is due to the fact that the Regulator has misapplied the method by allowing projects to be established in areas that have never been comprehensively cleared, where it is not reasonable to expect the control of grazing pressure is necessary for forests to regenerate. The other contributing factor is that, in uncleared rangeland areas, rainfall is the primary driver of changes in tree and shrub cover, and therefore carbon storage, yet the method does not control for the impacts of rainfall when estimating the abatement that is attributable to the project activities. ANU-UNSW ERF research team references: Macintosh, A., Butler, D., Evans, M. C., Larraondo, P., Ansell, D., Gibbons, P. (2022) The ERF's Human-induced Regeneration (HIR): What the Beare and Chambers Report Really Found and a Critique of its Method. The Australian National University, Canberra; Macintosh, A., Butler, D., Evans, M. C., Larraondo, P., Ansell, D., Waschka, M. (2022) Integrity and the ERF's Human-Induced Regeneration Method: The Additionality Problem Explained. The Australian National University, Canberra; Macintosh, A., Larraondo, P., Butler, D., Ansell, D., Waschka, M., Evans, M. C. (2022) Trends in forest and sparse woody cover inside ERF HIR project areas relative to those in surrounding areas; Butler, D. et al. (2022) Australian National University (ANU)-University of New South Wales (UNSW) ERF research team submission to the Chubb Review. Available at: https://consult.dcceew.gov.au/independent-review-of-accu/submission/list (24 January 2023). Other evidence received by the Panel: • The Academy of Science report stated that rainfall is the dominant driver of changes in tree and shrub cover in rangeland areas and found that the HIR method does not contain appropriate processes for separating out the impacts of the project activities from the impacts of rainfall when estimating abatement. The report states: *Variable patterns in rainfall are the dominant drivers of fluctuations in woody biomass in these systems, with the proportion attributable to human activity small and variable. This triggers the 'evidence based' offset integrity standard, as it is not clear how changes in carbon sequestration in HIR projects can be convincingly differentiated between human and climatic changes.* Later, in a section on how the method could be improved, the report states:

Separating the impact of management actions from natural variability or climate change remains challenging. It may be possible to address this issue of attribution by restricting new HIR projects to areas with higher rainfall and showing clearer signals of human activity.

Source: Australian Academy of Science (2022) Review of Four Methods of Generating Australian Carbon Credit Units. Report for the Department of Climate Change, Energy, the Environment and Water, Canberra, at 11 and 12.

- In its joint submission with the ANU/UNSW ERF research team, GreenCollar acknowledges that the HIR method should control 'for the impacts of rainfall over wet and dry cycles'. In its own separate submission, GreenCollar stated:

  GreenCollar recognises that the HIR method does not control for the impacts of rainfall on regeneration. That is, it has no processes for separating out the impacts of management from the impacts of rainfall in any observed changes in woody biomass. Due to this, there is a risk HIR projects in uncleared rangeland areas are being credited for non-additional abatement.

  Source: GreenCollar and ANU-UNSW ERF Research Team (2022) Joint Submission to the Independent Review of Australian Carbon Credit Units, at 5. Available at: https://consult.dcceew.gov.au/independent-review-of-accu/submission/list (24 January 2023).

- In its submission, the Wentworth Group of Concerned Scientists stated that rainfall is the key driver of vegetation change in arid and semi-arid regions, where most HIR projects are located. They also emphasised the method does not control for the impacts of rainfall in projects located in areas that have not been comprehensively cleared, and observed there is a risk of overcrediting carbon abatement for these HIR projects:

  The [HIR] method was intended to encourage regeneration of native forests by allowing vegetation to regrow in cleared areas where it would otherwise not regrow. Regeneration of vegetation is closely linked to environmental factors like rainfall, however the HIR method does not separate these impacts i.e. any increase in carbon stock is attributed entirely to the project activity. This assumption is credible in cleared forest landscapes because regrowth is more evidently linked to project activities. In these landscapes, rain-triggered regeneration would not have occurred unless there was a cessation of re-clearing practices (i.e. regrowth is unlikely to occur in ordinary course of events). Most HIR projects have, however, been directed to arid and semi-arid regions where vegetation has never been cleared […]. In these boom or bust systems, rainfall is the key driver of vegetation change, and drives both increases and decreases in biomass. While reducing grazing pressure can result in increased tree and shrub cover in these landscapes, from a carbon sequestration perspective this effect is small relative to cyclical climatic drivers. It is difficult to disentangle the influence of the project activity on carbon stocks from other drivers including rainfall. If causation cannot be confirmed (i.e. that the project activity directly results in increased carbon stocks) and additionality can't be guaranteed (ie. reliable estimation of the amount of increased carbon due to project activity alone), then it is not possible to establish credibility of the method. For HIR projects in these ecosystems, under the current method there is a risk they are overestimating the carbon that is attributable to the management change.

	Source: Wentworth Group of Concerned Scientists (2022) Submission to the Independent Review of Australian Carbon Credit Units, at 2-3. Available at: https://consult.dcceew.gov.au/independent-review-of-accu/submission/list (24 January 2023). **Integrity issue 2 (Additionality)**: Proponents are getting ACCUs even when there is not any tree growth. This is due to the Regulator's failure to require proponents to pause crediting when there is no regeneration. This ties to problem 1, magnifying the severity of the associated integrity problems. Because of the nature of the areas included in the projects, there is unlikely to be much, if any, true regeneration of native forests. There will be ups and downs in tree and shrub cover associated with dry and wet periods, but little more. However, projects are being credited as if there is uniform, even-age regeneration of native forests across the vast majority of the areas included in the projects. ANU-UNSW ERF research team references: Macintosh, A., Butler, D., Evans, M. C., Larraondo, P., Ansell, D., Gibbons, P. (2022) The ERF's Human-induced Regeneration (HIR): What the Beare and Chambers Report Really Found and a Critique of its Method. The Australian National University, Canberra; Macintosh, A., Butler, D., Evans, M. C., Larraondo, P., Ansell, D., Waschka, M. (2022) Integrity and the ERF's Human-Induced Regeneration Method: The Additionality Problem Explained. The Australian National University, Canberra; Macintosh, A., Larraondo, P., Butler, D., Ansell, D., Waschka, M., Evans, M. C. (2022) Trends in forest and sparse woody cover inside ERF HIR project areas relative to those in surrounding areas; Butler, D. et al. (2022) Australian National University (ANU)-University of New South Wales (UNSW) ERF research team submission to the Chubb Review. Available at: https://consult.dcceew.gov.au/independent-review-of-accu/submission/list (24 January 2023). **Integrity issue 3 (Measurement):** Proponents are getting ACCUs to grow trees that were already there when the projects started. This is due to the Regulator's failure to ensure credited areas do not contain pre-existing mature woody vegetation. The over-crediting arises because the model that is used to estimate regeneration is calibrated on the basis that credited areas do not contain significant amounts of pre-existing mature woody vegetation (defined as more than 5% of the estimated maximum biomass carrying capacity of the site). The Regulator's and ERAC's response has been to argue that the model is calibrated for use in areas that contain significant amounts of pre-existing mature woody vegetation. ANU-UNSW ERF research team references: Macintosh, A., Butler, D., Ansell, D. (2022) Measurement Error in the Emissions Reduction Fund's Human-induced Regeneration (HIR) Method. The Australian National University, Canberra; Macintosh, A., Butler, D., Evans, M. C., Larraondo, P., Ansell, D., Waschka, M. (2022) Integrity and the ERF's Human-Induced Regeneration Method: The Measurement Problem Explained. The Australian National University, Canberra; Butler, D. et al. (2022) Australian National University (ANU)-University of New South Wales (UNSW) ERF research team submission to the Chubb Review. Available at: https://consult.dcceew.gov.au/independent-review-of-accu/submission/list (24 January 2023). Other evidence received by the Panel: • The Panel was provided with correspondence and a paper from the CSIRO scientists that calibrated the model that confirms it was not calibrated for sites that contain significant amounts of pre-existing mature woody vegetation.

	Source: Butler, D. et al. (2022) Australian National University (ANU)-University of New South Wales (UNSW) ERF research team submission to the Chubb Review, at 31-49. Available at: https://consult.dcceew.gov.au/independent-review-of-accu/submission/list (24 January 2023); Paul, K., Roxburgh, S. (2021) Baseline AGB: TYF calibration for natural regeneration in land managed for grazing. CSIRO, Canberra. • GreenCollar, the largest developer of vegetation projects in the carbon market, made a joint submission to the Review with the ANU/UNSW ERF research team that states: *GreenCollar shares the ANU/UNSW ERF research team's concerns about measurement and agrees that FullCAM is not currently calibrated for use on sites where native vegetation exceeds 5% of the estimated maximum biomass at the modelling commencement date. … Both GreenCollar and the ANU/UNSW ERF research team believe that land areas with demonstrably more than 5% of their maximum biomass carrying capacity (assessed at an appropriate scale) at the time of modelling commencement date, should be removed from the CEAs of HIR projects.* Source: GreenCollar and ANU-UNSW ERF Research Team (2022) Joint Submission to the Independent Review of Australian Carbon Credit Units, at 5. Available at: https://consult.dcceew.gov.au/independent-review-of-accu/submission/list (24 January 2023).
Landfill gas	**Method description:** Landfill gas projects receive ACCUs for capturing and combusting the methane (CH4) component of the biogas emitted from solid waste landfills. Burning CH4 converts it to carbon dioxide (CO2) and water (H2O), neutralising its warming effects. Projects combust the CH4 using either a flare or an electricity generator. **Integrity issue (Additionality)**: Many large- to medium-sized landfill gas projects that generate electricity are receiving ACCUs for combusting CH_4 that they would have combusted anyway, without the incentive provided by the ERF (i.e. the credited abatement is not additional). This is due to the fact the method uses inappropriate baselines to address additionality risks that do not account for the non-ERF related financial incentives for capturing and combusting biogas (i.e. revenues from the sale of electricity and large-scale generation certificates (LGCs)). Older projects, which account for the majority of issued credits, have also been allowed to grandfather over baselines from schemes that operated in the 2000s that do not even account for state legal requirements for landfills to manage biogas emissions for public safety and odour reasons. ANU-UNSW ERF research team references: Macintosh, A. (2022) The Emissions Reduction Fund's Landfill Gas Method: An Assessment of its Integrity. The Australian National University, Canberra; [Landfill Gas Operator 1 – name withheld] and Macintosh, A. (2022) Independent Review of Australian Carbon Credit Units. Joint Letter to Professor Ian Chubb. 29 July 2022; [Landfill Gas Operator 2 – name withheld] and Macintosh, A. (2022) Independent Review of Australian Carbon Credit Units. Joint Letter to Professor Ian Chubb. 4 August 2022; Butler, D. et al. (2022) Australian National University (ANU)-University of New South Wales (UNSW) ERF research team submission to the Chubb Review. Available at: https://consult.dcceew.gov.au/independent-review-of-accu/submission/list (24 January 2023). Evidence received by the Panel: • The Panel has received joint submissions from landfill gas operators and Professor Andrew Macintosh from the ANU that acknowledge the baselines under the method are inappropriate. These operators are responsible for approximately 65% of

registered landfill gas projects and the ACCUs issued under the landfill gas methods to date. The joint submission with one such operator states:

The baselines set for a number of projects under the generation-only method are too low, in that they do not appropriately reflect the non-ERF regulatory and financial incentives for capturing and destroying landfill gas at some sites. This adversely affects the integrity of the method and the perceptions of the real contribution that landfill gas projects make to Australia's greenhouse gas reduction efforts.

Source: [Landfill Gas Operator 1 – name withheld] and Macintosh, A. (2022) Independent Review of Australian Carbon Credit Units. Joint Letter to Professor Ian Chubb. 29 July 2022.

The submission with another operator is similar, only more forthcoming:

The baselines set for a number of projects under the generation-only method do not appear to appropriately reflect the regulatory requirements for capturing and destroying landfill gas or the financial incentives to utilise gas for electricity generation and the creation of LGCs. For example, a large landfill located near an urban centre would be required to actively manage its gas given the associated risks of odour and safety for adjacent communities. New landfill gas projects registered under the ERF are subjected to a minimum 30% baseline, reflecting the view that all landfills should be doing 'at least' this level of gas recovery. Enabling some of the country's largest sites to continue applying baselines below 30% (i.e. 0% and 24%) has understandably raised questions about the integrity of the method and negatively affected perceptions of the contribution that landfill gas projects make to Australia's emission reduction efforts.

Source: [Landfill Gas Operator 2 – name withheld] and Macintosh, A. (2022) Independent Review of Australian Carbon Credit Units. Joint Letter to Professor Ian Chubb. 4 August 2022.

- The Academy of Science report concludes that the grandfathering of historical sub-30% baselines is inappropriate, stating:

Some landfill operators have a baseline under 30%, carried over from previous government schemes as part of the newness provision that allows project transitions. This runs counter to principles of regulatory additionality. … A more transparent review of the in lieu requirements is a critical first step to improve the integrity of this method. Criticism of the baseline requirements for landfill gas projects stem from these alternative requirements, which do not appear to be fit for purpose.

Later, in a section on ways to improve the method, the report states:

Projects from previous schemes may transition into the ERF, but this transition should be subject to review and should not allow previous baselines to be carried over. Robust review and verification are not possible if review is only undertaken at project registration. … Methane destruction already required under other regulation will be non-additional and not receive ACCUs. This will be enforced via the methods' baselines, which will not allow carryover from previous schemes.

	Source: Australian Academy of Science (2022) Review of Four Methods of Generating Australian Carbon Credit Units. Report for the Department of Climate Change, Energy, the Environment and Water, Canberra, at 17 and 18. • The four largest landfill gas operators, responsible for 80% of registered projects, signed a joint letter to Senate David Pocock in which they committed to 'progress the development of an increased baseline setting framework to ensure the integrity of the Landfill Gas (Electricity Generation) Methodology Determination with a periodic review to ensure the framework continues to meet its objectives in a changing landscape'. The Panel was provided with a copy of this letter. Source: LMS Energy, Cleanaway Waste Management, Veolia and EDL Ltd (2022) The Emissions Reduction Fund Landfill Gas Method – Joint Letter to Senator David Pocock, 1 September 2022.
Avoided deforestation	**Method description:** Provides ACCUs to landholders in western New South Wales for not clearing forests that were authorised to be cleared under a specific type of clearing permit, known as an invasive native species property vegetation plan (INS PVP). **Integrity issue (Additionality)**: Proponents are getting ACCUs for not clearing forests that were not likely to be cleared within the foreseeable future. This is because the method is based on the flawed assumption that landholders who went to the trouble of getting INS PVPs were likely to use them and clear the forests they were permitted to clear within 15 years. This assumption is flawed because: (a) it ignores the fact that landholders had incentives, and were encouraged, to obtain INS PVPs to gain an option to clear, even when they had no firm plans to clear the land in the foreseeable future; (b) a large proportion of the INS PVPs were issued in regions where land clearing is relatively uncommon; and (c) reflecting (a) and (b), the amount of eligible land under the method far exceeded the amount of land that was likely to be cleared within 15 years based on historical clearing rates. The Regulator's response has been to argue that the method is not based on the assumption the areas would be cleared within 15 years. ANU-UNSW ERF research team references: Butler, D. et al. (2022) Australian National University (ANU)-University of New South Wales (UNSW) ERF research team submission to the Chubb Review. Available at: https://consult.dcceew.gov.au/independent-review-of-accu/submission/list (24 January 2023). Evidence received by the Panel: • The Panel has been directed to four key official documents that confirm it is based on the assumption eligible forests would be cleared within 15 years. Relevant extracts from these documents are provided below. o Explanatory Statement to the method*: Section 6 provides that projects covered by this Determination have a 15 year crediting period. This represents a revision in the crediting period from 20 years, as provided for with the original Avoided Deforestation method, to better reflect when abatement occurs.*

- Departmental briefing to the ERAC in 2015, when the method was first made: *The crediting period has been defined as 15 years, a reduction from the current 20 years. This is to reflect the lifetime of the clearing permits most commonly applicable for projects using the method. The change allows crediting to better match the time over which clearing would occur.*
- Clean Energy Regulator's guidance on the method: *The crediting period in the original version was 20 years. In version 1.1, it is 15 years. This change reflects the lifetime of the clearing permits most commonly applicable for these projects.*
- Section 25 of the method requires proponents to prepare a baseline deforestation plan that describes what would have occurred in the project area if it was not included in the project. The Explanatory Statement to the method states that, '[t]he deforestation plan corresponds to the activities permitted and/or prohibited by the clearing consent'. As a matter of logic, clearing consents can only permit activities during the period over which they remain valid. INS PVPs were valid for 15 years.

- The Panel has been provided with a statutory declaration, signed by Professor Andrew Macintosh, who was the Chair of the ERAC when the ERF method was made, that confirms the method is based on the assumption the eligible forests would be cleared within 15 years.

  Source: Butler, D. et al. (2022) Australian National University (ANU)-University of New South Wales (UNSW) ERF research team submission to the Chubb Review, at 30. Available at: https://consult.dcceew.gov.au/independent-review-of-accu/submission/list (24 January 2023).

- The Academy of Science report acknowledges there is scope for improvements in the way the method addresses additionality risks, stating:

  It may be possible to reform the way in which the counterfactual 'baseline' is calculated to create a more realistic and robust model of intention. The 'baseline' emissions could be calculated using data from rates of clearing on similar properties on recent time scales to help ensure that ACCUs credited are genuinely additional relative to the counterfactual. This would contrast with the current method for modelling a baseline scenario based on rights held by landowners, or by extrapolating historical figures.

  Source: Australian Academy of Science (2022) Review of Four Methods of Generating Australian Carbon Credit Units. Report for the Department of Climate Change, Energy, the Environment and Water, Canberra, at 15.