

# Safeguarding the Fossil Fuel Industry?

## How Carbon Offsetting Undermines the Safeguard Mechanism

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*The Safeguard Mechanism is failing to drive real emissions reductions across Australian industry because it enables polluters to rely on unlimited amounts of so-called “offsets”. Ahead of the Government’s review of the scheme, this report explains why the permission to substitute real emissions abatement with offsets undermines the integrity of Australia’s flagship climate policy, and how it benefits the fossil fuel companies that are the biggest emitters covered by the scheme.*

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# Summary

**Australia's flagship climate policy is failing.** While renewable energy is reducing household and electricity-sector emissions quite rapidly, Australia's biggest emitters in the mining and heavy industrial sectors are virtually getting a free pass. The Labor Government's Safeguard Mechanism is supposed to be cutting greenhouse gas emissions from these industries. But it is failing to do so because it enables our biggest industrial polluters to rely on unlimited amounts of so-called "offsets" to meet their obligations. Ahead of the Government's review of the Safeguard Mechanism, this report explains why the permission to substitute real emissions abatement with offsets undermines the integrity of Australia's flagship climate policy, and how it benefits the fossil fuel companies that are the biggest emitters covered by the scheme.

## KEY TAKEAWAYS

- According to the Climate Change Authority, the Safeguard Mechanism did not drive aggregate reduction in gross emissions across facilities regulated under the scheme.
- The Government highlights the reductions in 'net emissions' driven by the scheme. Net emissions calculations factor in companies' reliance on so-called carbon offsets. But offsets have been scientifically discredited. They are not a substitute for genuine emissions reduction. Extensive reliance on carbon offsetting by many of Australia's largest emitters to meet their obligations under the Safeguard Mechanism has thus likely resulted in substantially more greenhouse gases entering the atmosphere than is reflected in the Government's accounting of the scheme's outcomes.
- Despite the inherent lack of equivalence between fossil fuel emissions and both 'avoidance' and land-based 'removal' credits, the Safeguard Mechanism—unusually, compared with other jurisdictions—allows polluters to use both kinds of credits to meet 100% of their emissions obligations.
- Carbon *avoidance* credits are untenable for use as offsets because at best they exchange new emissions for avoided new emissions, so no actual carbon dioxide is removed from the atmosphere; at worst, new emissions are not in fact offset at all because the 'avoided' action would have occurred anyway.
- Carbon *removal* projects in the land sector at best only temporarily store carbon, so credits based on such projects can never truly offset carbon dioxide emissions from burning fossil fuels, a large fraction of which lasts for thousands of years.

- High-integrity carbon removals—based on projects that permanently geologically store carbon—might have a limited role to play in counterbalancing residual emissions from activities that are genuinely both ‘hard to abate’ and ‘hard to avoid’ (e.g., cement-making), but the high cost and low scalability of such projects means their role will likely be small; they cannot substitute for deep and permanent decarbonisation in sectors where emissions can be avoided or abated.
- The so-called “hard cap”, introduced into the scheme in 2023 as a result of the Government’s negotiations with the Greens, doesn’t stop individual polluters from relying wholly on offsetting and lacks effective enforcement mechanisms (the Minister need only be subjectively satisfied that the relevant objective will be achieved). It has failed to stop new coal and gas projects from being approved, which add to the emissions covered by the scheme.
- Australian Carbon Credit Units with deep and well-documented flaws and low integrity continue to be used by polluters to meet their obligations under the Safeguard Mechanism.
- Opening the Safeguard Mechanism to international offsets—something the Government has said it will consider—would make it easier for big polluters to purchase offsets that have even less integrity, over which Australian authorities have even less oversight. This would make the scheme even less effective than it is now.
- Safeguard Mechanism Credits can provide a windfall gain to polluters, even when polluters *increase* their emissions, highlighting the flaws of the avoidance credits and emissions-intensity baselines that are fundamental to the scheme’s design.
- The Safeguard Mechanism has safeguarded the fossil fuel industry’s expansion plans and been a boon for carbon market players. It is not fit for the purpose of decarbonising Australia’s industries.
- These policy settings arguably place Australia in breach of international law, as authoritatively interpreted by the International Court of Justice in its 2025 Advisory Opinion on climate change. They also contradict the Belem Declaration on the Transition Away from Fossil Fuels, which the Albanese Government recently endorsed.

# Introduction

**Australia’s main climate policy is failing.** The Safeguard Mechanism (see Box 1) applies to around 200 of Australia’s most emissions-intensive industrial facilities, covering about 30% of Australia’s greenhouse gas (GHG) emissions. But according to the Climate Change Authority—the federal Government’s independent climate change advisory body—emissions are “steady” in most of the facilities regulated by the scheme, with emissions reductions at some facilities mainly due not to decarbonisation efforts, but to unrelated closures, temporary shutdowns and production changes.<sup>1</sup>

The federal Climate Change Minister has claimed that “emissions have fallen across heavy industry. Net emissions across facilities covered by the Government’s Safeguard Mechanism fell 5.5% year on year ... This is a clear sign that the Albanese Government’s Safeguard Mechanism is working and on track to meet targets.”<sup>2</sup> But the key word there is “net”. The annual emissions limits that the Safeguard Mechanism imposes on facilities regulated by the scheme allows polluters who exceed their limits to avoid penalties by relying on unlimited amounts of so-called ‘offsets’. *Net* emissions are the actual emissions from regulated facilities, *minus the offsets that companies use to meet their obligations*. According to the regulator, net emissions did indeed fall by 5.5% relative to the previous year.<sup>3</sup> However, the credits used as offsets under the scheme do not reliably represent additional and permanent abatement equivalent to the actual industrial emissions that they purportedly offset. Consequently, the ‘net’ emissions numbers do not reflect reality.<sup>4</sup>

**This report explains why the permission to substitute real emissions abatement with purchased offsets undermines the integrity of Australia’s flagship climate policy, and how it benefits the fossil fuel companies that are the biggest emitters covered by the scheme.**

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<sup>1</sup> Climate Change Authority, *2025 Annual Progress Report* (2025) 99. The Authority notes that “early analysis indicating some facilities have adopted decarbonisation technologies” (at 99).

<sup>2</sup> The Hon Chris Bowen MP, Minister for Climate Change, ‘Australian emissions falling as industry upgrades and electrifies’, Media Release (15 April 2026) <https://minister.dcceew.gov.au/bowen/media-releases/australian-emissions-falling-industry-upgrades-and-electrifies>.

<sup>3</sup> Clean Energy Regulator, *2024–25 Safeguard Mechanism data insights* (2026) 3.

<sup>4</sup> As one commentator has put it, commenting on the 2024–25 Safeguard data: “The delivery of these offset units does not reliably indicate that real world emissions reductions are occurring. Any public statements based on net emissions reductions under the scheme as determined by the aggregate of baselines are quite simply false. A spreadsheet is not necessarily a reliable indicator of reality”: Tim Baxter, ‘Reflections on the operation of the Safeguard Mechanism after two years of public data’, Naru Research (26 April 2026) <https://naruresearch.com.au/2025-safeguard-data/>.

### Box 1: What is the Safeguard Mechanism?

The Safeguard Mechanism is Australia’s main federal climate change policy addressing emissions from large industrial sources. It applies to industrial facilities (such as coal mines, gas processing plants, and aluminium smelters)<sup>5</sup> that emit more than 100,000 tonnes of carbon dioxide-equivalent (**tCO<sub>2</sub>e**) per year. Each facility liable under the scheme (a ‘**covered facility**’ or ‘**Safeguard facility**’) is given an annual emissions **baseline**—a nominal ‘limit’ of sorts. Baselines are generally determined by a combination of the facility’s production and an emissions-intensity factor (emissions per unit of output), and subject to a default decline rate of 4.9%,<sup>6</sup> which is meant to provide a gradually-strengthening incentive for companies to reduce emissions from their covered facilities. However, a facility is allowed to emit more than its baseline, so long as its operator acquires and surrenders eligible **carbon offsets** to reduce the facility’s ‘net’ emissions to within the baseline.

To illustrate how the scheme ‘works’, consider the example of Woodside Energy’s North-West Shelf (**NWS**) gas processing facility near Karratha, Western Australia. According to Woodside, the facility is “one of the largest liquefied natural gas (**LNG**) projects in the world”.<sup>7</sup> It takes “natural gas”—a potent fossil fuel—extracted from nearby offshore fields and, using a highly energy- and emissions-intensive process called liquefaction, turns that fossil gas into liquid form, suitable for export overseas by tanker ship.

The NWS facility is one of Australia’s largest GHG emitters. In the 2024–25 financial year, it emitted more than 5.7 million tCO<sub>2</sub>e.<sup>8</sup> Under Australia’s current climate policy settings, neither Woodside nor any other emitter has to pay a carbon price for its emissions (e.g., pay a tax on its emissions, or acquire scarce carbon permits). Rather, for the NWS facility, it simply needed to meet the facility’s allocated baseline under the Safeguard Mechanism.<sup>9</sup> Its actual *emissions* for the year, however, were more than 900,000 tCO<sub>2</sub>e higher than its mandated baseline.<sup>10</sup> To “offset” the excess emissions, Woodside acquired both types of

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<sup>5</sup> Electricity generators supplying into any of Australia’s major public electricity grids are effectively excluded from the scheme (they are covered by a collective baseline set at the highest historical point Australia’s electricity sector emissions have ever been).

<sup>6</sup> For a more detailed explanation of how baselines are set, see Tim Baxter, *The Safeguard Mechanism: The ultimate guide*, Naru Research (14 April 2026) 5–6, <https://naruresearch.com.au/sgm-guide/>.

<sup>7</sup> Woodside Energy, ‘North West Shelf Project’, <https://www.woodside.com/what-we-do/operations/north-west-shelf>. The facility has four operational LNG processing trains. It also produces some gas for the Western Australian market via two domestic gas trains, and produces condensate (via four condensate stabilisation units) and and LPG (via three LPG fractionation units).

<sup>8</sup> The exact figure is 5,750,304 tCO<sub>2</sub>e: Clean Energy Regulator, 2024–25 baselines and emissions data (2026), Baselines and emissions table, <https://cer.gov.au/markets/reports-and-data/safeguard-data/2024-25-baselines-and-emissions-data>.

<sup>9</sup> In 2024–25, the NWS project’s baseline was 4,829,212 tCO<sub>2</sub>e: Clean Energy Regulator (above n 8).

<sup>10</sup> See above, notes 8 and 9. The facility’s 2024–25 gross emissions are lower than its 2023–24 gross emissions (6,097,509 tCO<sub>2</sub>e), however this appears to be driven by a reduction in production: one of the facility’s five LNG trains, representing ~15% of the facility’s nameplate production capacity, was taken offline in late 2024

carbon credits that the Safeguard Mechanism allows polluters to use: Safeguard Mechanism Credits (**SMCs**) and Australian Carbon Credit Units (**ACCUs**).<sup>11</sup> Each of these credit-types has a *nominal* value of 1 tCO<sub>2</sub>e, but, as we shall explain, the emissions abatement these credits represent is not, in fact, reliably equivalent to a ton of carbon dioxide generated from burning fossil fuels.

SMCs are credits generated within the Safeguard Mechanism by companies whose covered facilities emit *less* than their baselines for a given year. For example, if a coal mine emits 1,000 tonnes of CO<sub>2</sub>e below its annual baseline, it will generate 1,000 SMCs that year, which it can sell to the operators of other covered facilities that are in excess of *their* facility baselines, like Woodside’s NWS facility. However, because of problems with the way baselines are calculated, many facilities have ended up with emissions below their baselines without having to make any additional effort to cut their emissions, meaning they are able to generate valuable SMCs for nothing. This is one reason why an SMC does not necessarily represent abatement equivalent to a tonne of CO<sub>2</sub>e that is actually emitted into the atmosphere. In 2024–25, Woodside surrendered 239,200 SMCs to reduce its net emissions from the NWS facility.<sup>12</sup>

ACCUs are issued by the regulator to proponents of eligible projects outside the Safeguard Mechanism for activities such as refraining from cutting down trees, allowing trees to grow, and capturing methane from landfill. Proponents who generate ACCUs from such projects can sell them to companies like Woodside to reduce the net emissions from their Safeguard facilities. However, project-based carbon credits suffer from deep and inherent flaws, meaning many do not represent additional abatement at all, few represent the abatement that they are claimed to represent, and—in the case of land-sector projects, which account for the highest proportion of ACCUs—no project can store carbon in trees and soils for long enough to offset the carbon dioxide released into the atmosphere from burning fossil fuels, so such projects are inherently non-equivalent to fossil fuel emissions.<sup>13</sup> In 2024–25, Woodside surrendered 681,895 ACCUs in respect of the NWS facility—more than any other facility in the scheme.<sup>14</sup> More than 80% of these<sup>15</sup> were generated from project methods

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due to insufficient feedstock gas, and was permanently retired in Q2, 2025: ‘Australian Woodside’s output up but LNG declines in 2Q’, *Argus* (23 July 2025) <https://www.argusmedia.com/en/news-and-insights/latest-market-news/2713034-australian-woodside-s-output-up-but-lng-declines-in-2q>.

<sup>11</sup> Clean Energy Regulator (above n 8).

<sup>12</sup> *Ibid.* The Regulator does not publish the data to allow the public to trace the SMCs surrendered in respect of a facility to their source, so it is not possible to make specific claims about the particular SMCs surrendered in respect of the NWS facility.

<sup>13</sup> See Parts 1 and 3, below.

<sup>14</sup> Clean Energy Regulator (above n 8).

<sup>15</sup> Calculated based on Clean Energy Regulator, 2024–25 baselines and emissions data (2026), ACCU methods table, <https://cer.gov.au/markets/reports-and-data/safeguard-data/2024-25-baselines-and-emissions-data>. The numerator in the cited fraction is the sum of the “Quantity surrendered” for the three Human Induced Regeneration, three landfill gas, and Avoided Deforestation 1.1 ACCU method types surrendered by Woodside

that have been highly criticised by experts on the ground that they are unlikely to represent additional and/or permanent abatement: Human-Induced Regeneration, Avoided Deforestation, and Landfill Gas.<sup>16</sup>

Let us be clear: what Woodside has done is perfectly legal. Indeed, that is precisely our point. The fact that one of Australia’s biggest polluters can lawfully use carbon credits of dubious integrity to purportedly “offset” its excess emissions under Australia’s flagship climate policy illustrates that the scheme is not fit for purpose.

Yet, of even greater consequence for the climate is that the Albanese Government in 2025 approved Woodside’s proposed expansion of the NWS facility until 2070—two decades after Australia is supposed to have achieved its target of net zero emissions.<sup>17</sup> This approval was not precluded by the Safeguard Mechanism because the scheme has no direct legal bearing on the approval of new or expanded climate polluting projects under national environmental laws.<sup>18</sup>

The NWS extension approval shows that the so-called “hard cap” on aggregate gross emissions from Safeguard facilities—inserted into the Scheme as part of the 2023 amendments after negotiations with the Greens<sup>19</sup>—is failing to prevent enormous new projects that threaten not only the credibility of Australia’s scheme,<sup>20</sup> but also internationally agreed climate goals.<sup>21</sup> In fact, the NWS approval is one of 36 approvals of new, expanded, or extended fossil fuel projects granted since the Albanese Government assumed power in May 2022.<sup>22</sup> It is not surprising that the “hard cap” is having little impact, as the determination of whether it has been met each year rests with the Climate Change

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in respect of the NWS facility that year. The denominator is the total number of ACCUs surrendered by Woodside in respect of the NWS facility that year.

<sup>16</sup> For expert criticism of these methods, see Part 3, below.

<sup>17</sup> BBC News, ‘Major Australian gas project extended until 2070’ (12 September 2025) <https://www.bbc.co.uk/news/articles/cpw1d2wdj84o>.

<sup>18</sup> Nor does it affect state approval processes: NSW Environment Protection Authority, *Guiding principles for alignment with the National Greenhouse and Energy Reporting Scheme and the Safeguard Mechanism* (2025) <https://www.epa.nsw.gov.au/sites/default/files/2025-07/25p4605-guiding-principles-ngers-safeguard.pdf>.

<sup>19</sup> The amendments inserted a new objective into the scheme, for gross emissions to continually fall (measured across rolling 5-year averages): *National Greenhouse and Energy Reporting Act 2007* (Cth) s 3(2)(d). ACCUs and SMCs surrendered are ignored in calculating gross emissions.

<sup>20</sup> Only the NWS project’s direct (‘scope 1’) emissions count for the purposes of the Safeguard Mechanism. The 4 billion tonnes of emissions from combusting the gas processed by the extended NWS facility (its ‘scope 3’ emissions)—which are an order of magnitude larger than the project’s direct emissions—will not be included in the extended NWS facility’s covered emissions under the Safeguard Mechanism. See Mark Ogge et al., ‘4.3 billion tonnes of emissions is not OK: Appeal against Report 1727 of the Environmental Protection Authority on Woodside’s North West Shelf Project Extension Proposal’, The Australia Institute (July 2022).

<sup>21</sup> Fergus Green, ‘Britain’s tough new test for fossil fuel projects’, *Inside Story* (3 July 2025) <https://insidestory.org.au/britains-tough-new-test-for-fossil-fuel-projects/>.

<sup>22</sup> Climate Council, *The Albanese Government’s fossil fuel approvals* (23 March 2026), <https://www.climatecouncil.org.au/resources/albanese-governments-fossil-fuel-approvals/>.

Minister, who need only be satisfied that the Safeguard Mechanism’s rules are consistent with achieving the cap—a subjective test. In other words, the ‘hard cap’ is not really a cap at all.

The continued approval of new coal and gas projects, most of which will enter the Safeguard Mechanism, means there will be more and more upward pressure on emissions covered by the scheme. Indeed, such is the aggregate scale of proposed projects that their combined emissions could well exceed reductions from facility closures, production contractions and on-site emissions reductions at Safeguard facilities over the next decade.<sup>23</sup> The result is likely to be a dramatic increase in reliance on offsets over the coming decade, as the Government’s own modelling predicts (see Part 2, below).

**If the Albanese Government’s flagship climate policy is failing to drive down industrial emissions, relies on an illusory equivalence between actual emissions and so-called offsets, and is failing to prevent massive new coal and gas projects from being approved, then one might well ask: what is the point of it?**

By documenting these failures, this report is intended to provoke debate about the future of the Safeguard Mechanism ahead of the mandated review into the scheme by the Department of Climate Change, Energy, the Environment and Water (**DCCEEW**), which is set to commence its shortly.

The remainder of this report is in three parts. Part 1 outlines key features of carbon credits and offsetting, and the international context in which it is becoming increasingly clear that countries should not rely on them to meet decarbonisation goals. Part 2 assesses how unlimited access to carbon offsets undercuts the functioning of the Safeguard Mechanism, including how the fossil fuel industry has used the scheme to essentially continue business as usual. Part 3 looks in detail at the carbon credits available under the Mechanism—ACCUs and SMCs—concluding that their low integrity and unfettered use undermines the functioning of Australia’s primary emissions reduction policy.

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<sup>23</sup> Baxter (above n 4).

# Part 1: Carbon offsets and the illusion of climate progress under net zero

*Net zero does not mean zero emissions. Net zero is about one thing: offsets.*

- Labor Member for Hunter, Dan Repacholi MP, November 2025.<sup>24</sup>

*Burning fossil fuels creates greenhouse gas emissions that are not prevented or undone by carbon offsets.*

- Settlement statement from EnergyAustralia in relation to allegedly misleading or deceptive conduct regarding offsets and ‘carbon neutral’ products, May 2025.<sup>25</sup>

Net zero relies on the idea that carbon in one place is the same as carbon in another place—for instance, that carbon stored in trees or topsoil has the same value to the climate as carbon stored in a coal, oil or gas deposit. This is also known as ‘carbon fungibility’. This logic of fungibility assumes that emissions from burning fossil fuels can be ‘offset’ by activities that avoid causing emissions, or that remove carbon from the atmosphere. It has permeated almost all discussions about climate mitigation,<sup>26</sup> but Australia is especially reliant on it for achieving its legally-enshrined climate goals.<sup>27</sup> It also underpins the functioning of the Safeguard Mechanism. Yet, the assumptions of fungibility that underpin carbon offsetting have been scientifically discredited.<sup>28</sup>

Even if carbon offsetting worked perfectly, relying on it to ‘net out’ carbon pollution means foregoing structural decarbonisation, and justifying business as usual, in the energy and industrial sectors that generate most of the world’s emissions. It also redirects much needed funds away from decarbonisation to carbon credit-generating projects, and distorts public understanding of a company’s or country’s climate performance.<sup>29</sup>

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<sup>24</sup> Commonwealth, *Parliamentary Debates*, House of Representatives, 3 November 2025.

<sup>25</sup> EnergyAustralia (May 19 2025) <https://www.energyaustralia.com.au/about-us/media/news/go-neutral-litigation-energyaustralia-acknowledges-issues-offsetting-and-moves>.

<sup>26</sup> Sam Fankhauser et al, ‘The Meaning of Net Zero and How to Get It Right’ (2022) 12 *Nature Climate Change* 15.

<sup>27</sup> Rebecca Pearse, *Pricing Carbon in Australia: Contestation, the State and Market Failure* (Routledge, 2018).

<sup>28</sup> The problems with carbon offsets have been extensively documented: see, e.g., Joseph Romm, Stephen Lezak and Amna Alshamsi, ‘Are Carbon Offsets Fixable?’ (2025) 50 *Annual Review Environment and Resources* 649; Andrew Macintosh et al, ‘Carbon credits are failing to help with climate change — here’s why’ (2025) *Nature* 646; Danny Cullenward, Grayson Badgley and Freya Chay, ‘Carbon offsets are incompatible with the Paris Agreement’ (2023) 6(9) *One Earth* 1085.

<sup>29</sup> Romm, Lezak and Alshamsi (above n 28).

**In reality, the consequences of carbon offsetting are much more dire: not only is the incentive to decarbonise drastically reduced,<sup>30</sup> but the endemically poor integrity of carbon offsets means that *more* emissions will enter the atmosphere than otherwise would have.<sup>31</sup>** It is this more dire reality in which Australia is currently stuck: carbon offsetting doesn't work in practice in the way assumed in the design of the Safeguard Mechanism, and reliance on it has inevitably resulted in substantially more GHGs entering the atmosphere than are reflected in the official accounting of the scheme's 'net emission' outcomes.<sup>32</sup>

In the remainder of this section, we explain the fundamentals of carbon credits, offsets and markets. We also summarise the fundamental flaws with both carbon avoidance and land-based carbon removal credit types, and explain why integrity issues are endemic to carbon credit markets, and therefore not fixable. Finally, we explain why expanding fossil fuel emissions under the guise of offsets is contrary to international law and to international commitments Australia has made.

## CARBON CREDITS AND OFFSETS: THE BASICS

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Carbon credits and carbon offsets are related but different concepts. **Carbon credits** are effectively tradeable certificates stating that one tonne of CO<sub>2</sub>e has been avoided or reduced, backed by a set of rules that is supposed to ensure the accuracy, or 'integrity', of that claim. They can be generated through stand-alone projects that avoid or remove GHGs. **Removal credits** are based on projects that *remove* carbon from the atmosphere (e.g., by planting trees or through soil management<sup>33</sup>). **Avoidance credits** are based on projects that *avoid* emissions that (purportedly) would have otherwise occurred (e.g., through switching from high- to low-carbon fuels or installing energy efficiency measures). Carbon credits can also be generated within baseline-and-credit carbon trading schemes, like the Safeguard Mechanism, by companies whose covered facilities emit a lower volume of GHGs than their baselines in a given year (such credits are effectively avoidance credits).

A carbon credit becomes a **carbon offset** when it is purchased by another entity to purportedly counterbalance a tonne of *its* CO<sub>2</sub>e emissions. The latter element is crucial: the

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<sup>30</sup> See, e.g., Raphael Calel et al, 'Do carbon offsets offset carbon?' (2021) Centre for Climate Change Economics and Policy Working Paper No. 398, [https://eprints.lse.ac.uk/112803/1/GRI\\_do\\_carbon\\_offsets\\_offset\\_carbon\\_paper\\_371.pdf](https://eprints.lse.ac.uk/112803/1/GRI_do_carbon_offsets_offset_carbon_paper_371.pdf); Christopher Reinhard and Noah Planavsky, 'The importance of radical transparency for responsible carbon dioxide removal' (2026) 5(7) *npj Climate Action* 1.

<sup>31</sup> Cullenward, Badgley and Chay (above n 28); Peter Erickson, Michael Lazarus and Randall Spalding Fecher, 'Net climate change mitigation of the Clean Development Mechanism' (2014) 72 *Energy Policy* 146; Miko Kirschbaum, 'Temporary Carbon Sequestration Cannot Prevent Climate Change' (2006) 11 *Mitigation and Adaptation Strategies for Global Change* 1151.

<sup>32</sup> See Baxter (above n 4).

<sup>33</sup> Engineering-based techniques for removing carbon from the atmosphere (such as direct air capture and storage) are currently scarce, ineffectual, or unviable at scale.

carbon credit is being used to ‘cancel out’ emissions generated elsewhere, which means its integrity becomes paramount.<sup>34</sup>

As we will explain below, project-based carbon credits suffer from endemic integrity problems. This does not mean that the least problematic projects are not worth funding; after all, *some* abatement is better than no abatement, and projects often have valuable co-benefits, such as biodiversity conservation and supporting indigenous land management practices. If such projects are worth funding, then governments should fund them as public goods. The danger lies in treating each unit of purported project-based carbon abatement as equivalent to an actual unit of fossil fuel emissions and allowing the former to be used as an offset for the latter.

The act of buying and selling carbon credits/offsets is called **carbon trading**. Carbon trading occurs in **carbon markets**. There are compliance markets and voluntary markets for carbon credits. A **compliance market** is a market for carbon credits in which the driver of the demand for such credits is a legal obligation: entities that are liable under the relevant law must either reduce their own emissions or purchase carbon credits in order to comply with their legal obligation. The Safeguard Mechanism legislation (and associated regulations and rules) create a compliance market. As noted above, one type of credit that can be used in this market is SMCs—credits generated by covered facilities that outperform their baseline in a given year.<sup>35</sup> Polluters are able to use unlimited SMCs to acquit their scheme liability.

A **voluntary market** is a market for carbon credits in which the driver of the demand is not a legal obligation, but some other motivation of the buyer, such as reputational benefits associated with claims the buyer may make about its ‘green’ credentials. Credits are created voluntarily by proponents of carbon removal or carbon avoidance projects (discussed below). ACCUs are Australian Government-certified carbon credits that can be issued to such project proponents, which they can then sell to buyers in the voluntary market.

Voluntary markets can be **linked** to compliance markets by rules that permit entities liable under the latter to acquit their carbon liability by purchasing credits generated under the former. The Safeguard Mechanism is linked to the voluntary market for ACCUs in this way: liable entities are permitted to purchase unlimited ACCUs to acquit their scheme liability.

In either case, carbon trading relies on the assumption that one tonne of CO<sub>2</sub>e emitted in one place can be directly counterbalanced by one tonne of CO<sub>2</sub>e removed or avoided elsewhere. This counterbalancing is only logically possible if the traded carbon credit has impeccable environmental integrity.

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<sup>34</sup> Intergovernmental Panel on Climate Change (IPCC), *Climate Change 2022: Mitigation of Climate Change* (Working Group III Contribution to the Sixth Assessment Report, Cambridge University Press, 2022). In some cases it may be the same entity offsetting its own emissions (for example if it owns the crediting project).

<sup>35</sup> Some commentators do not refer to SMCs as offsets on the ground that they emanate from within the scheme. SMCs as such are credits (effectively, they are avoidance credits); when used to offset above-baseline emissions at another facility, they are offsets, so we refer to them as such.

## CARBON CREDIT INTEGRITY?

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*When people write offset rules, they always ignore the fact that there are 1,000 smart people next door that will try to game them.*

— Mark Trexler, a former offsets developer<sup>36</sup>

There are many sets of principles that have been crafted to guide best-practice carbon crediting, and to ensure that carbon credits (and thus offsets) have environmental integrity.<sup>37</sup> They usually include requirements that the underlying carbon saving is:

- **Permanent:** This refers to the expected duration over which carbon dioxide (CO<sub>2</sub>) is removed and stored as carbon (or in which GHGs are avoided, though as we explain below, avoidance credits inherently lack integrity for other reasons). Permanence is an important indicator of credit quality: the integrity of a removal credit depends on the carbon being stored for as long as CO<sub>2</sub> persists in the atmosphere, i.e. centuries to millennia.<sup>38</sup>
- **Additional:** This means the project generating the credit must result in emissions reductions or removals additional to what would have happened in the absence of the incentive for the project. The emissions reductions will only be additional if they *would not have occurred* in the absence of a market for the credits.<sup>39</sup> Non-additional carbon credits, when used as offsets, *increase* net emissions.<sup>40</sup>
- **Accurately accounted for:** This means the project that generated the carbon credit needs to be monitored over the long term, the conversion between different GHGs must be accurate (for example when accounting for the impact of methane, which has a much higher global warming potential than CO<sub>2</sub>), and the emissions reduction claimed needs to be appropriately measured, reported and verified.<sup>41</sup> Many types of projects for removing or avoiding GHGs, especially land-based removals, are inherently difficult to monitor, measure and verify.

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<sup>36</sup> Quoted in Lisa Song and James Temple, 'The climate solution actually adding millions of tons of CO<sub>2</sub> into the atmosphere', *ProPublica / MIT Technology Review* (29 April 2021). On other governance challenges in carbon markets, see, e.g.,: Luca Enriques, Alessandro Romano and Andrew F. Tuch, 'Green Gatekeepers' (2025) 109(2) *Minnesota Law Review* 609; Cynthia Giles and Cary Coglianese, 'Auditors can't save carbon offsets' (2025) 389(6756) *Science* 107.

<sup>37</sup> See, e.g., *Oxford Principles for Net Zero Aligned Carbon Offsetting* (2024) (**Oxford Principles**); Integrity Council for the Voluntary Carbon Market, 'The Core Carbon Principles' (2026) <https://icvcm.org/core-carbon-principles/>; Derik Broekhoff et al, 'Securing Climate Benefit: A Guide to Using Carbon Offsets' (2019) Stockholm Environment Institute and Greenhouse Gas Management Institute.

<sup>38</sup> David Archer et al, 'Atmospheric lifetime of fossil fuel carbon dioxide' (2009) 37 *Annual Review of Earth and Planetary Sciences* 117.

<sup>39</sup> Broekhoff et al (above n 37).

<sup>40</sup> Cullenward, Badgley and Chay (above n 28).

<sup>41</sup> Oxford Principles (above n 37).

It is broadly recognised that deviation from any of these principles renders a carbon credit ineffective.<sup>42</sup> So, if such credits are used to offset a nominal equivalent of an entity's own actual emissions, then the transaction allows more carbon pollution to enter the atmosphere, not less.<sup>43</sup> Yet, these principles are frequently ignored or breached. Carbon crediting programs routinely overestimate their climate impact, in many cases by as much as a factor of five to ten, or more.<sup>44</sup> A recent meta-analysis of carbon offsetting projects around the world estimated that less than 16% of the carbon credits issued to the investigated projects constitute real emission reductions.<sup>45</sup>

Some supporters of offsets argue that integrity issues can be fixed. However, such claims (often self-serving) falsely characterise integrity issues as contingent and resolvable. **While it's true that integrity flaws can be *improved*, they can never be *eliminated*; integrity issues are *endemic* to carbon credit markets.** There are multiple reasons for this inherent lack of integrity.<sup>46</sup> Central among them is that carbon-market participants are incentivised to consume and produce lower-quality credits: buyers want access to the cheapest credits available to comply with their legal obligations (or burnish their 'green' credentials), and the cheapest credits tend to be the lowest quality (because skimping on integrity drives down the cost of credit-generating projects);<sup>47</sup> this focus on price over quality, in turn "drives a 'race to the bottom' where project developers compete on price rather than quality".<sup>48</sup> While carbon market proponents argue that better governance can improve project integrity, integrity issues in carbon credit markets will never be able to be eliminated because, as a group of the world's leading experts in carbon credit markets put it, "[c]arbon credits are a non-physical product whose creation involves high levels of uncertainty and complexity, assessed by a set of actors who generally all benefit from excess crediting".<sup>49</sup>

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<sup>42</sup> E.g., Oxford Principles (above n 37); Integrity Council (above n 37); Broekhoff et al (above n 37). Another issue that undermines the effectiveness of carbon credits is "leakage"—i.e. "when emissions that are reduced, avoided, or removed within a project boundary are shifted, wholly or partially, outside of the boundary instead" (Romm, Lezak, and Alshamsi, above n 28, 657). While leakage issues to some extent affect all national climate policies, the risk of leakage from project-based carbon credit markets is particularly high (ibid 657–658).

<sup>43</sup> Cullenward, Badgley and Chay (above n 28).

<sup>44</sup> Romm, Lezak, and Alshamsi (above n 28), see also Benedict S. Probst et al., 'Systematic assessment of the achieved emission reductions of carbon crediting projects' (2024) 15(1) *Nature Communications* 9562.

<sup>45</sup> Probst et al (above n 44).

<sup>46</sup> See generally Romm, Lezak, and Alshamsi (above n 28) 655–660.

<sup>47</sup> Gregory Trencher et al, 'Demand for low-quality offsets by major companies undermines climate integrity of the voluntary carbon market' (2024) 15(1) *Nature Communications* 6863.

<sup>48</sup> Romm, Lezak, and Alshamsi (above n 28) 655.

<sup>49</sup> Barbara Haya et al, 'Commentary on SBTi's discussion paper: aligning corporate value chains to global climate goals', Berkeley Carbon Trading Project, University of California, Berkeley (3 October 2024) 2. See also Macintosh et al (above n 28) 544.

These features mean carbon credit market governance is rife for gaming by the strategic actors who dominate such markets.<sup>50</sup>

We next illustrate some of the integrity problems by examining the two broad categories of carbon credits: **emissions removal** credits and **emissions avoidance** credits.

## FUNDAMENTAL PROBLEMS WITH ‘AVOIDANCE’ CREDITS

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Emissions avoidance credits rely on a counterfactual. A credit will be generated when emissions were supposedly *going to be* produced, for example through deforestation or the burning of fossil fuels, but the activity does not take place, or is modified to reduce the volume of emissions it produces (e.g., through fuel switching or energy efficiency measures), thereby ‘saving’ emissions.<sup>51</sup> Avoidance offsets reward projects for preventing emissions that were expected to happen under a hypothetical business-as-usual scenario, rather than removing carbon already in the atmosphere.<sup>52</sup> The project is awarded a carbon credit for emissions that never happened, which can then be used as an offset to justify emissions elsewhere.

Even on the assumption that the nominally avoided emissions would indeed have occurred but for the credited project, the use of avoidance credits as offsets cannot be justified as their counterfactual nature means they do not contribute to halting the accumulation of GHGs in the atmosphere.<sup>53</sup> The atmosphere doesn’t care if a company *would have* emitted GHGs; what matters is how much pollution *is* going into the atmosphere overall. Using avoidance credits as offsets means some GHG emissions will definitely be emitted into the atmosphere while (at best) emissions from the credited project are less than they might have been.

Worse, the counterfactual nature of avoidance projects means they are especially vulnerable to the problem of non-additionality. International studies of major avoidance project-types across multiple schemes have found they are persistently over-credited.<sup>54</sup>

The Safeguard Mechanism imports this fundamental problem with avoidance offsets because SMCs, which are generated and traded by facilities within the Safeguard Mechanism, are avoidance credits (the ‘baseline’ allocated to each facility stands in for the

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<sup>50</sup> Song and Temple (above n 36). On other governance challenges in carbon markets, see, e.g.,: Luca Enriques, Alessandro Romano and Andrew F. Tuch, ‘Green Gatekeepers’ (2025) 109(2) *Minnesota Law Review* 609; Cynthia Giles and Cary Coglianese, ‘Auditors can’t save carbon offsets’ (2025) 389(6756) *Science* 107.

<sup>51</sup> Oxford Principles (above n 37).

<sup>52</sup> Macintosh et al (above n 28).

<sup>53</sup> Fankhauser et al (above n 26) 18; Oxford Principles (above n 37); *CSSN Position Paper 2022:1 Net Zero, Carbon Removal and the Limitations of Carbon Offsetting* (2022).

<sup>54</sup> Romm, Lezak, and Alshamsi (above n 28) 656–657.

business-as-usual scenario). They rely on the idea that a facility *could* produce extra CO<sub>2</sub>e up to its applicable limit, but doesn't, and is therefore rewarded in the form of tradable credits. Operators of other facilities can then buy those SMCs when they breach their own pollution limit, purportedly 'cancelling out' their excess emissions.<sup>55</sup> Specific problems with SMCs that illustrate the flaws in this logic of equivalence are discussed in part 3.

## THE LIMITED ROLE FOR CARBON REMOVAL

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### Fundamental problems with land-based 'removal' credits

Most carbon removal credits are generated through projects that purport to store carbon in trees or soils, often referred to as 'land-based carbon sinks'.

A key problem with these credits is the inherent impermanence of any carbon so stored. Land-based carbon storage is inherently temporary, meaning that the carbon so stored will be released back into the atmosphere, typically within decades.<sup>56</sup> This is due to biophysical properties of land-based sinks—for example, the natural lifespan of plants and trees.

Moreover, even during the period in which carbon *is* naturally stored, climate change itself poses significant risks to the integrity of forests, vegetation and soils through drought, bushfires and increased pest outbreaks. These risks create what is known as the 'risk of reversal', where a carbon sink can be reversed and become a carbon source before the end of the crediting period, releasing previously stored carbon back into the atmosphere.<sup>57</sup> The risks are not hypothetical: researchers estimated that the summer 2019–20 bushfires in southeastern Australia surpassed Australia's normal annual fire and fossil-fuel emissions by 80%, and argued that not all of those emissions would likely be sequestered by regrowing vegetation.<sup>58</sup> While 'buffers' can be established that set aside a portion of credits as a kind of insurance mechanism in case trees are destroyed by fire and other hazards, such as drought and disease, the scale of these risks is becoming so great that they threaten to overwhelm these mechanisms.<sup>59</sup> For instance, California's offsets program had set aside 6 million tonnes worth of credits as an insurance buffer to compensate for the effects of

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<sup>55</sup> Alternatively, the operator of the same facility may 'bank' the SMCs for later use if they anticipate that they may need them to avoid breaching their baseline in a future year.

<sup>56</sup> IPCC, *Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change* (Cambridge University Press, 2021) Ch 5; Brendan Mackey et al, 'Untangling the confusion around land carbon science and climate change mitigation policy' (2013) 3(6) *Nature Climate Change* 552.

<sup>57</sup> Romm, Lezak, and Alshamsi (above n 28).

<sup>58</sup> Ivar R. van der Velde et al., 'Vast CO<sub>2</sub> release from Australian fires in 2019–2020 constrained by satellite' (2021) 597 *Nature* 366.

<sup>59</sup> Grayson Badgley et al, 'California's forest carbon offsets buffer pool is severely undercapitalized' (2022) 5 *Frontiers in Forests and Global Change* 930426.

fires over the next 100 years. But Californian wildfires over just one decade have destroyed forests in the program responsible for 11 million tonnes of CO<sub>2</sub>e worth of credits.<sup>60</sup>

These characteristics create significant problems when such credits are used for offsetting. Offsets based on land-sector removal credits rely on the dubious equivalence between, for example, a tonne of CO<sub>2</sub> emitted from the burning of fossil fuels—a large fraction of which remains in the atmosphere for hundreds to thousands of years, and a smaller fraction of which lasts beyond ten thousand years<sup>61</sup>—and the temporary removal of a tonne of CO<sub>2</sub> and the storage of the associated carbon in vegetation, which may only last decades or, at most, around 100 years.<sup>62</sup> Land-based offsets therefore cannot guarantee carbon storage for a period anywhere near comparable to the long atmospheric lifetime of the CO<sub>2</sub> generated from burning fossil fuels.<sup>63</sup> As a result, using temporary carbon storage to offset effectively permanent emissions will ultimately lead to higher net emissions, and higher temperatures, over time.<sup>64</sup>

Put simply, one tonne of CO<sub>2</sub> emitted by a fossil fuel company is not the same as one tonne of CO<sub>2</sub> absorbed by a tree—which naturally won't last anywhere near long enough to cancel out the fossil fuel emissions, and might burn down in the next climate-fuelled extreme bushfire anyway.<sup>65</sup>

## Hard-to-abate sectors

Ultimately, carbon offsets are a dangerous distraction. Whether or not they have integrity, reliance on them to justify business-as-usual will undoubtedly slow the global decarbonisation effort needed to address climate change. However, it is broadly acknowledged that carbon removal may have a role in counterbalancing 'residual emissions'. These are emissions that are unavoidable or unlikely to be eliminated completely, in hard-to-abate sectors.<sup>66</sup> Some industries are claiming that their emissions are

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<sup>60</sup> Grayson Badgley, 'Fire threatens the integrity of California's forest offset program', CarbonPlan (8 February 2024) <https://carbonplan.org/research/buffer-pool-burning>.

<sup>61</sup> Archer et al (above n 38).

<sup>62</sup> IPCC (above n 56); Mackey et al (above n 56); Ryan Wilson et al, 'Why offsets are not a viable alternative to cutting emissions' (2023) Climate Analytics, [https://ca1-clm.edcdn.com/assets/why\\_offsets\\_are\\_not\\_a\\_viable\\_alternative\\_to\\_cutting\\_emissions.pdf?v=1697123932](https://ca1-clm.edcdn.com/assets/why_offsets_are_not_a_viable_alternative_to_cutting_emissions.pdf?v=1697123932).

<sup>63</sup> Wilson et al (above n 62); Kate Dooley, 'Net-Zero Climate Goals and the Role of Land-Use', in D. J. Fiorino, T. A. Eisenstadt and M. Kaur Ahluwalia (Eds.), *Elgar Encyclopedia of Climate Policy* (Edward Elgar Publishing, 2024) 302–305.

<sup>64</sup> Cyril Brunner, Zeke Hausfather and Reto Knutti, 'Durability of carbon dioxide removal is critical for Paris climate goals' (2024) 5 *Nature Communications Earth & Environment* 645.

<sup>65</sup> Part 3 of this report digs deeper into how these integrity problems are present in ACCUs generated in Australia, including the contested accounting of the carbon saved through certain ACCU methods.

<sup>66</sup> Note the contentious nature of the term 'residual': see, Jens Friis Lund et al, 'Net Zero and the Unexplored Politics of Residual Emissions' (2023) 98 *Energy Research & Social Science* 103035; Holly Jean Buck et al, 'Why Residual Emissions Matter Right Now' (2023) 13 *Nature Climate Change* 351.

“hard to abate”—applying a self-servingly loose definition of the concept—to justify excessive offset use instead of investing in technically-feasible emissions abatement.<sup>67</sup> Nonetheless, for sectors with genuinely hard-to-avoid and hard-to-abate emissions, it will be necessary to remove and permanently (for at least 1000 years) geologically store their residual emissions.<sup>68</sup>

The problem is, as noted above, carbon removal offsets currently overwhelmingly rely on the land sector: emissions uptake through forests, soil and vegetation. The inherent impermanence of those removals means that they cannot be relied upon to play this offsetting role, particularly as the climate continues to change. In addition, a vast amount of land would be required in order to offset continued emissions, which may not be feasible (or just) if that land is already being used or occupied by local communities.<sup>69</sup> As acknowledged by the IPCC, sequestration potential in the land sector should not be perceived as an opportunity for inaction by other polluting sectors: it simply cannot compensate for mitigation shortfalls elsewhere.<sup>70</sup>

The underperformance of engineered carbon capture and storage (**CCS**) to date appears highly unlikely to make up the shortfall.<sup>71</sup> To date, most large, commercial CCS projects have either failed or underperformed materially,<sup>72</sup> while costs have continued to rise.<sup>73</sup> For example, Chevron’s Gorgon CCS project has largely failed to capture as much carbon as predicted, and what it has captured has been dwarfed by the enormous emissions the attached LNG facility does generate.<sup>74</sup> Based on performance to date, CCS cannot be relied upon to abate continuing (and growing) emissions from fossil fuels.

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<sup>67</sup> Bill Hare, Hannah Grant and James Bowen, *Hard to abate: a justification for delay?* Climate Analytics (September 2025) <https://climateanalytics.org/publications/hard-to-abate-a-justification-for-delay>.

<sup>68</sup> Macintosh et al (above n 28); IPCC (above n 34); Brunner, Hausfather and Knutti (above n 64); Myles Allen, et al, ‘Geological Net Zero and the Need for Disaggregated Accounting for Carbon Sinks’ (2025) 638 *Nature* 343.

<sup>69</sup> See, e.g., Kate Dooley and Aarti Gupta, ‘Governing by expertise: the contested politics of (accounting for) land-based mitigation in a new climate agreement’ (2017) 17 *International Environmental Agreements* 483; Allen et al (above n 68); Kevin Anderson and Glen Peters, ‘The trouble with negative emissions’ (2016) 354(3609) *Science* 182.

<sup>70</sup> G.J. Nabuurs et al, ‘Agriculture, Forestry and Other Land Uses (AFOLU)’ in IPCC, *Climate Change 2022: Mitigation of Climate Change* (Cambridge University Press, 2022) 747, 755.

<sup>71</sup> Clare Fyson et al, ‘Unabated: The Carbon Capture and Storage 86 billion tonne carbon bomb aimed at derailing a fossil phase out’ (2023) Climate Analytics, <https://ca1-clm.edcdn.com/assets/Unabated.pdf?v=1701779554>.

<sup>72</sup> Nan Wang, Keigo Akimoto and Gregory F. Nemet, ‘What went wrong? Learning from three decades of carbon capture, utilization and sequestration (CCUS) pilot and demonstration projects’ (2021) 158 *Energy Policy* 112546.

<sup>73</sup> Amandine Denis-Ryan, ‘CCS hype and hopes sinking fast’, Institute for Energy Economics and Financial Analysis (IEEFA) (9 October 2024) <https://ieefa.org/resources/ccs-hype-and-hopes-sinking-fast>.

<sup>74</sup> Amandine Denis-Ryan and Kevin Morrison, ‘Gorgon CCS underperformance hits new low in 2023-24’, IEEFA, (28 November 2024) <https://ieefa.org/resources/gorgon-ccs-underperformance-hits-new-low-2023-24>.

Accordingly, if there are truly sectors in which residual emissions must inevitably continue, then the limited opportunities for carbon removal must be reserved for these. Broad-scale land-based or engineered carbon removal and reliance on carbon offsetting should not be the first options for climate mitigation.<sup>75</sup> And they should certainly not form the basis of a country's emission reduction policy—let alone that of a wealthy, historical emitter like Australia. Any net zero goal or policy that substantially relies on offsetting emissions is missing the point: that GHG emissions, in real terms, need to decrease rapidly.<sup>76</sup> **Carbon offsetting might uphold the illusion of progress in tackling climate change, but achieving net zero on paper through an unsustainable combination of continued fossil fuel emissions and impermanent removals is, ultimately, a recipe for disaster.**<sup>77</sup>

## INTERNATIONAL CONTEXT: AUSTRALIA'S LEGAL OBLIGATION TO REDUCE AND REMOVE EMISSIONS

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Offsets mean shifting emissions from one place to another, or one firm to another, in a zero-sum game to 'neutralise' each unit of carbon. With the remaining carbon budget for preventing temperature rise beyond the Paris Agreement temperature limit rapidly dwindling, this represents a dangerous distraction.<sup>78</sup> **To meet the goals of the Paris Agreement, almost all global emissions need to be eliminated in absolute terms (not merely relative to a counterfactual) and carbon needs to be removed from the atmosphere.**<sup>79</sup>

Continued reliance on avoidance credits and land-based removal credits as purported 'offsets' for fossil fuel emissions flouts the international legal imperative to undertake deep and rapid decarbonisation (*in addition* to carbon removal). The recent Advisory Opinion of the International Court of Justice (ICJ) on the Obligations of States in Respect of Climate Change clearly articulates that countries are legally obligated take actions to protect the climate system from GHG emissions.<sup>80</sup> Activities that enable and encourage fossil fuel use (including licencing fossil fuel exploration and providing fossil fuel subsidies) are all characterised by the ICJ as potentially wrongful acts under international law.<sup>81</sup> Moreover, the ICJ emphasised the continuing importance of the principle of common but differentiated responsibilities and respective capabilities, meaning rich, developed countries like Australia

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<sup>75</sup> Fankhauser et al (above n 26).

<sup>76</sup> Allen et al (above n 68).

<sup>77</sup> Fankhauser et al (above n 26).

<sup>78</sup> IPCC, '2023: Summary for Policymakers' in *Climate Change 2023: Synthesis Report* (Working Groups I, II and III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change, Geneva, 2023).

<sup>79</sup> Fankhauser et al (above n 26).

<sup>80</sup> *Obligations of States in Respect of Climate Change (Advisory Opinion)* (International Court of Justice, General List No 187, 23 July 2025) [273], [280], [427].

<sup>81</sup> *Ibid* [427].

must take the lead in reducing GHGs and adopting more ambitious emissions mitigation measures consistent with the best available science.<sup>82</sup>

Importantly, the ICJ emphasised that the legal requirement for countries is not counted in terms of GHG emissions, but rather protection of the climate system from significant harm.<sup>83</sup> Pretending that this harm could be cancelled out by *avoiding* further possible emissions in the future or by *temporary* carbon removal in the land sector will clearly not absolve polluting states.

Similarly, the Albanese Government recently signed onto to the *Belem Declaration on the Transition Away from Fossil Fuels*, issued at COP30 in 2025. The Declaration explicitly acknowledges that we need to transition away from fossil fuels, which are the main drivers of global GHGs—and that continued fossil fuel production, licensing and subsidies are incompatible with limiting global temperature rise to 1.5°C as required by the Paris Agreement.<sup>84</sup> These international legal developments reflect the reality in the second half of this critical decade: that real climate action requires rapid and genuine decarbonisation, not continuing business-as-usual dressed up with dubious carbon offsetting.

**Key takeaways:**

- **So-called carbon offsets are not a substitute for genuine emissions reduction. Projects generating the most widely used types of carbon credits inevitably lead to far lower avoided or removed emissions than they are credited for, such that when they are used to purportedly ‘offset’ actual emissions the result is that more carbon pollution enters the atmosphere.**
- **Carbon *avoidance* credits are untenable for use as offsets because at best they exchange new emissions for avoided new emissions, so no actual carbon dioxide is removed from the atmosphere; at worst, new emissions are not in fact offset at all because the avoided action would have occurred anyway.**
- **Carbon *removal* projects in the land sector at best only temporarily store carbon and therefore credits based on such projects can never truly offset carbon dioxide emissions from burning fossil fuels, a large fraction of which lasts for thousands of years.**
- **High-integrity carbon removals—based on projects that permanently geologically store carbon—might have a limited role to play in counterbalancing residual emissions from activities that are genuinely both ‘hard to abate’ and ‘hard to avoid’ (e.g., cement-making), but the high cost and low scalability of such projects means their role will likely be small; they cannot substitute for deep and permanent decarbonisation in sectors where emissions can be avoided or abated.**

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<sup>82</sup> Ibid [148]–[151]

<sup>83</sup> Ibid [427].

<sup>84</sup> Belem Declaration on the Transition Away from Fossil Fuels, 2025.

- **International law requires that countries protect the climate system from significant harm, which entails both dramatically reducing emissions *and* removing CO<sub>2</sub> from the atmosphere.**

## Part 2: How the Safeguard Mechanism is undermined by unlimited offsets

The Safeguard Mechanism applies to around 200 facilities representing about 30% of Australia’s greenhouse gas emissions, the largest proportion of which comes from the oil and gas sector.<sup>85</sup> With fossil fuels the biggest driver of emissions in Australia (and globally), it’s crucial the Safeguard Mechanism triggers genuine decarbonisation in these sectors. However, as noted above, the way the Mechanism is designed gives fossil fuel polluters access to a huge loophole: the unlimited use of carbon offsets to meet their emissions limits.

While the Safeguard Mechanism does have a weak, scheme-wide integrity measure built in (the gross emissions ‘cap’, detailed below), at the facility level polluters are free to use as many ACCUs and SMCs as they like to avoid being penalised for exceeding their limits. This is a boon for the carbon credit industry, with government modelling projecting demand from the Safeguard Mechanism to increase from less than 1 million ACCUs in 2023 to 25 million ACCUs in 2030, and 29 million ACCUs in 2040.<sup>86</sup> But this will almost certainly be at the expense of incentivising real decarbonisation: the data from the Safeguard Mechanism so far makes it clear that this structural loophole in the policy design is not resulting in real carbon pollution reduction at the facility level, despite the pollution caps.

### THE SAFEGUARD POLLUTION “CAPS”

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The Safeguard pollution “caps” were introduced during the reform of the Safeguard Mechanism in 2023 in the form of amendments to the legislation before it passed the Senate with the support of the Greens.<sup>87</sup> Three different emissions “caps” are now set out in the objects of the legislation that governs the scheme—the *National Greenhouse and Energy Reporting Act 2007* (Cth) (**NGER Act**). As a result of the reforms, the Climate Change Minister must be satisfied that the Safeguard regime, as set out in subordinate rules, regulations and baselines, is consistent with the three pollution “caps”, and there is a

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<sup>85</sup> Clean Energy Regulator, *2024–25 safeguard preliminary insights* (2025).

<sup>86</sup> DCCEEW, *Australia’s emissions projections 2024* (2024) 39,

<https://www.dcceew.gov.au/sites/default/files/documents/australias-emissions-projections-2024.pdf>.

<sup>87</sup> Schedule of Amendments made by the Senate 2023.

process that may trigger the Minister’s reassessment of the relevant laws.<sup>88</sup> According to the Greens, their intention in agreeing to these reforms was that these pollution “caps”, the third “cap” in particular, would prevent the approval of new coal and gas projects in Australia.<sup>89</sup>

The first two pollution “caps” apply to *net* emissions (and in this sense are not really caps on emissions at all). This means all emissions from facilities that are covered by the Safeguard Mechanism, minus ACCUs and SMCs surrendered. In other words, emissions produced by a covered facility in a given year are considered cancelled out by SMCs generated elsewhere within the scheme (from facilities that emit below their baseline), and by ACCUs generated outside the scheme, that were used by covered facilities in that year to offset their above-baseline emissions. This means the net “caps” do not necessarily require genuine, on-the-ground decarbonisation by Safeguard facilities. One of these two net “caps” is an overall carbon budget for Safeguard facilities of 1,233 million tonnes of CO<sub>2</sub>e for the period 2020–2030. The second net emissions “cap” is a ‘point-in-time’ goal: net emissions from all Safeguard-covered facilities must be zero in 2050 (there is also an interim cap of no more than 100 million tonnes in 2030), reflecting Australia’s legislated emissions targets.

The third pollution “cap” applies to gross emissions. This is simply all emissions produced by Safeguard facilities; ACCUs and SMCs surrendered are ignored in this calculation.<sup>90</sup> This cap requires gross emissions to continually fall (measured across rolling 5-year averages). Its addition to the scheme is useful because it provides a yardstick for assessing the extent to which the Safeguard Mechanism is leading to genuine decarbonisation and prevents the efficacy of the scheme being measured entirely by reference to ‘net’ targets.

Nonetheless, being an aggregate cap, **it does not impose a requirement at the facility level to reduce gross emissions year on year**—as can be seen in the results of the reformed Safeguard Mechanism so far, discussed below. Moreover, **the “cap” does not prevent new polluting projects, such as coalmines and gas extraction projects, being approved under national environmental laws.**<sup>91</sup> Furthermore, the determination of whether the cap has

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<sup>88</sup> A reassessment of the regime can be triggered: by the provision of information by the Climate Change Authority; as a result of a new project being approved under national environmental laws; or at the request of the Secretary of the Department. After public consultation, the Minister must publish a statement of reasons explaining why, in their subjective view, the Safeguard rules will bring down emissions in line with the caps: *National Greenhouse and Reporting Act 2007* (Cth) s 22XS, s 3(2); *Climate Change Act 2022* (Cth) s 14.

<sup>89</sup> See <https://greens.org.au/news/media-release/greens-secure-hit-coal-and-gas-safeguard-deal>.

<sup>90</sup> Environmental Defenders Office, *Safeguard Mechanism reforms – another significant step in Australia’s climate law renaissance* (2023) <https://www.edo.org.au/2023/04/06/safeguard-mechanism-reforms-another-significant-step-in-australias-climate-law-renaissance/>.

<sup>91</sup> Under changes made to the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act) in 2025, proponents of proposed projects will need to disclose their expected scope 1 and 2 emissions to the Environment Minister and their ‘strategies and measures’ for managing those emissions in line with

been met each year rests with the Climate Change Minister, who need only be satisfied that the rules are consistent with achieving the cap—a subjective test. This makes the “cap” extremely difficult to enforce. For these reasons, the gross emissions “cap” is not really a cap in the true sense of the word, i.e. a hard limit. Rather it is more of a *test* that has to be applied in order to assess whether the scheme as a whole is resulting in genuine abatement, with limited consequences in the event that it is not.

## AUSTRALIA’S BIGGEST POLLUTERS ARE RELYING ON CARBON OFFSETS

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### Overall trends

In 2023, two modelling studies conducted for the Government and for the Climate Change Authority found that the majority (58% and 68%, respectively) of compliance obligations under the Safeguard Mechanism over the period to 2030 could be met using ACCUs, meaning less than half of emission reductions required under the Mechanism are expected to come from on-site emission abatement and facility decarbonisation.<sup>92</sup> Similarly, EY Net Zero Centre modelling found that a large share of facilities are expected to use offsets to achieve more than 30% of their mandatory abatement limits.<sup>93</sup>

These predictions are being borne out in the data from post-reform Safeguard operations so far: facilities have relied extensively on purchases of offsets to meet their scheme liabilities, at the expense of cutting on-site emissions. In 2023–24, as baselines were tightened under the revamped scheme, 142 of 219 facilities exceeded their emissions limits, and facilities dramatically increased their use of offsets: over 7 million ACCUs and 1.4 million SMCs were surrendered in lieu of real decarbonisation.<sup>94</sup> In 2024–25, when baselines were tightened again, 141 of the 208 covered Safeguard facilities exceeded their baselines and excess emissions increased by nearly half (48.8%) from the previous financial year,<sup>95</sup> in turn driving a further increase in offset use: 2.6 million SMCs and 10.8 million ACCUs were surrendered.<sup>96</sup> Total offset use comprised almost 10% of Safeguard facilities’ total emissions in 2024–25 (Figure 1).

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Commonwealth laws and policies, but this does not explicitly impact project assessment and approval: *Climate Change Act (Cth) s 15A; EPBC Act s 84A.*

<sup>92</sup> Climate Change Authority, *2024 Annual Progress Report* (2024) 99.

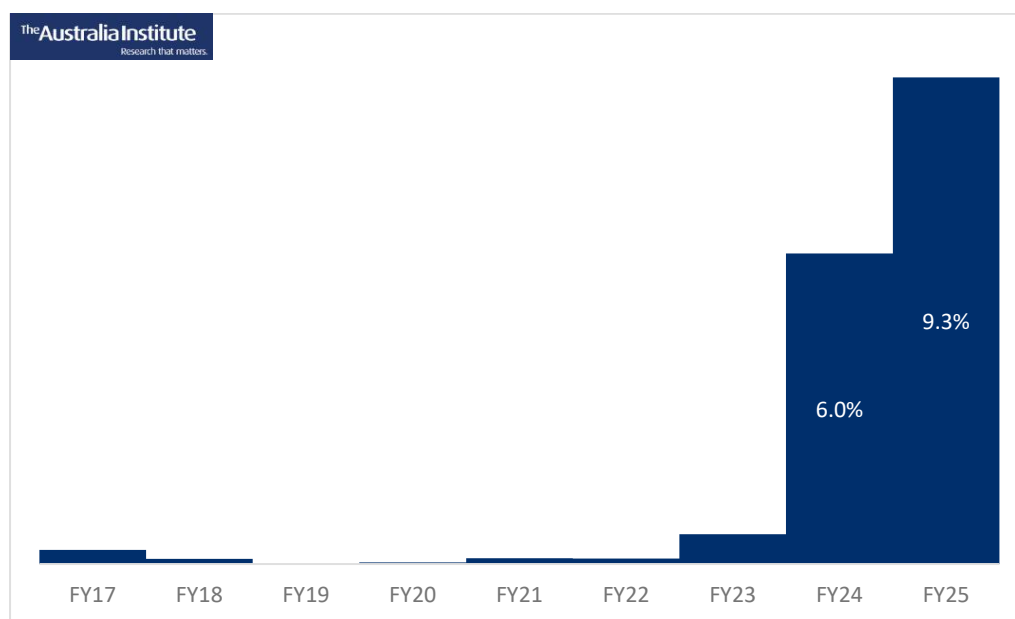
<sup>93</sup> EY Net Zero Centre, *A time for clarity and confidence*, Australian Carbon Market Outlook 2026, <https://www.ey.com/content/dam/ey-unified-site/ey-com/en-au/insights/sustainability/documents/ey-nzc-au-carbon-market-outlook-2026.pdf>.

<sup>94</sup> Clean Energy Regulator, *2023–24 safeguard data insights* (2024) 4.

<sup>95</sup> Clean Energy Regulator (above n 3) 3, 8.

<sup>96</sup> *Ibid* 3–4.

**Figure 1: Safeguard facilities' reliance on offsets is increasing, year on year**



Total number of SMCs and ACCUs used by Safeguard facilities as a percentage of total 'covered emissions' for each financial year. Calculated using Safeguard Data from the Clean Energy Regulator at <https://cer.gov.au/markets/reports-and-data/safeguard-data>. Figure produced by Ketan Joshi.

From the illusory 'net' perspective, this is all fine. Accordingly, the Climate Change Authority found the Safeguard Mechanism is operating in line with its net emissions caps—the emissions exceedance is deemed to have been cancelled out by SMCs and ACCUs.<sup>97</sup> But, as we discuss in Part 3, these credits do not reliably represent equivalent abatement.

## Fossil fuel facilities and offsetting

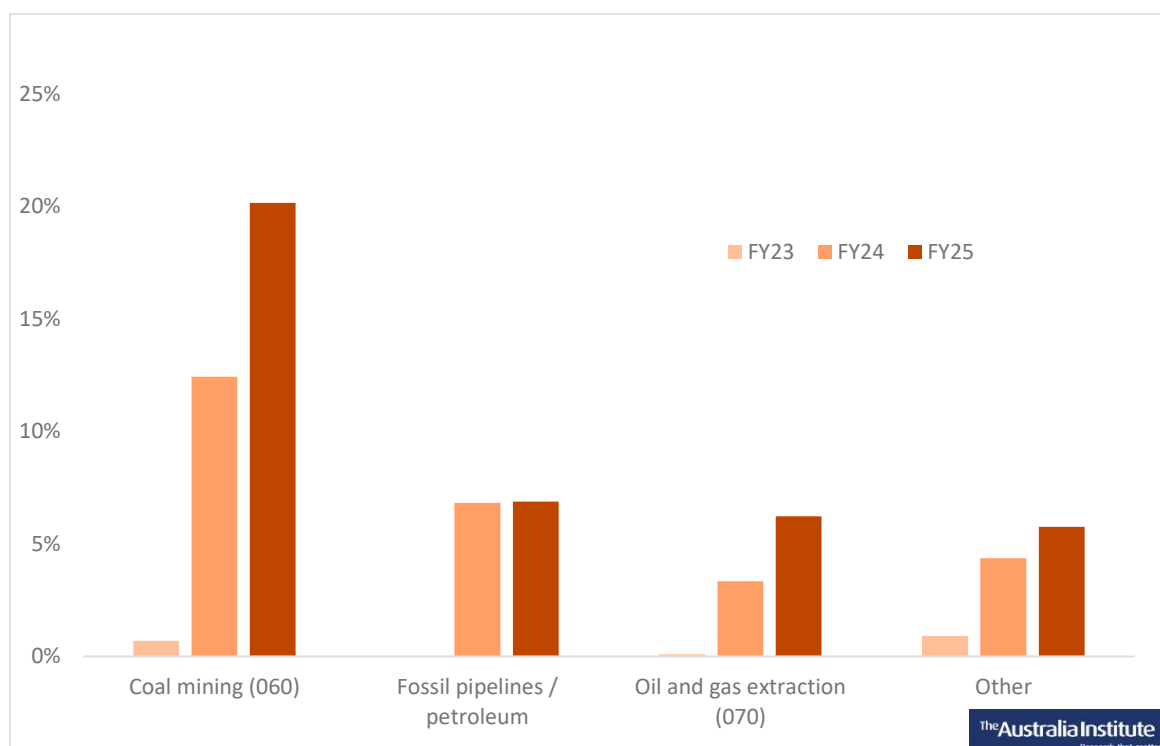
Importantly, it is fossil fuel facilities that are using the largest amounts of offsets to meet their baselines. In 2023–24, coal mining and oil and gas extraction facilities alone used almost 6 million carbon offsets to meet their emissions reduction requirements—more than double that of the rest of the covered industries.<sup>98</sup> In 2024–25, the coal mining and oil and gas extraction sectors further increased their offset dependence, collectively using nearly 9 million offsets.<sup>99</sup> As we saw in the introductory section, Woodside surrendered more than 900,000 offsets in respect of its NWS gas processing facility alone. As well as their high absolute amounts of offset use, the offsets being used by the fossil fuel industry—especially the coal mining sector—account for a relatively high, and growing, proportion of their covered emissions (Figure 2).

<sup>97</sup> Climate Change Authority (above n 1) 102.

<sup>98</sup> ANZSIC 060 and 070 only, ACCUs surrendered 4,854,048 and SMCs surrendered 1,084,566. Clean Energy Regulator, 2023–24 baselines and emissions data (2026) <https://cer.gov.au/markets/reports-and-data/safeguard-data/2023-24-baselines-and-emissions-data>.

<sup>99</sup> Clean Energy Regulator (above n 8).

**Figure 2: The fossil fuel industry is the most dependent on offsets**



Total number of offsets used by facilities in each industry category (ANZSIC code) as a percentage of total ‘covered emissions’ (emissions from facilities covered by the Safeguard Mechanism) in that same category, for each of the last three financial years. Offsets are calculated as total surrendered ACCUs plus total surrendered SMCs, less total ACCUs issued. “Fossil pipelines and petroleum” covers Gas supply (ANZSIC code 270), Petroleum and coal product manufacturing (170) and Pipeline and other transport (502). All remaining ANZSIC codes are in ‘other’. Calculated using Safeguard Data from the Clean Energy Regulator at <https://cer.gov.au/markets/reports-and-data/safeguard-data>. Figure produced by Ketan Joshi.

The expectation that the “hard cap” would prevent *new* coal and gas projects from being approved—which, recall, underpinned the Greens’ support for the Government’s reforms to the scheme—has not been borne out. In theory, as noted above, the Minister has the power to recalibrate the Safeguard Rules in order to accommodate new or expanded projects. But none of the 36 fossil fuel projects approved since the Albanese Government took office,<sup>100</sup> including the extremely emissions-intensive NWS project extension discussed earlier, has triggered any such recalibration. The 90 or so fossil fuel projects in the planning pipeline,<sup>101</sup> if approved, will put even greater upward pressure on Safeguard emissions and make it harder for the scheme to meet the “hard cap” objective. Nonetheless, the weak consequences of any failure to meet that objective mean that it cannot be relied upon to prevent these fossil fuel projects from being approved.

<sup>100</sup> Climate Council (above n 22).

<sup>101</sup> Department of Industry, Science and Resources, *Resources and Energy Major Projects Report (2025)* 7–8, 16–17, <https://www.industry.gov.au/publications/resources-and-energy-major-projects-2025>.

Another implication of approving new fossil fuel projects, given that most will enter the Safeguard Mechanism, is that the abatement task becomes steeper for everyone else. Because of the pollution caps outlined above, both gross and net emissions from Safeguard facilities in the aggregate need to fall over time. New and expanded fossil fuel projects imply that the burden of achieving these caps is redistributed to other facilities—they ‘pick up the slack’.<sup>102</sup> This translates into increased compliance costs for existing Safeguard facilities, including those considered essential but potentially falling into the ‘hard to abate’ category, like cement.<sup>103</sup> Moreover, these projects also make it harder for Australia to meet its nationwide climate targets.

## EVER-INCREASING DEMAND FOR OFFSETS IS NOT A POSITIVE SIGN FOR THE CLIMATE

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### Emissions decline not due to decarbonisation activity

In the last financial year (2024–25), gross emissions under the Safeguard Mechanism fell 2.3%.<sup>104</sup> One might be tempted to construe this as a positive indication of Australia’s progress in decarbonisation. However, as noted earlier, the Climate Change Authority has explained that this reduction is mainly<sup>105</sup> due to facility closures, temporary shutdowns, and production fluctuations unrelated to decarbonisation; gross emissions across other facilities were “steady” compared with 2023–24.<sup>106</sup> The scheme itself is not providing a strong enough incentive to drive on-site abatement across the facilities regulated under the scheme. The recent revelations that BHP has shelved plans to switch from diesel-powered

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<sup>102</sup> Steven Myburgh et al, ‘Woodside gas expansion would come at huge cost to the climate – and to other big emitters’, *Renew Economy* (12 March 2026) <https://reneweconomy.com.au/woodside-gas-expansion-would-come-at-huge-cost-to-the-climate-and-to-other-big-emitters/>; Steven Myburgh, ‘Woodside’s North West Shelf gas extraction project extension: a case study in how opacity in Australia’s Safeguard Mechanism increases costs to other companies as it enlarges the mitigation challenge’ (2025) 10.31223/X5MT89.

<sup>103</sup> Ibid.

<sup>104</sup> Clean Energy Regulator (above n 3).

<sup>105</sup> The Authority does not indicate what proportion of reductions has been driven by on-site decarbonisation. Tim Baxter (above n 4) estimates that gross emissions under the scheme fell by around 500,000 tCO<sub>2</sub>e, or 0.4%, once scheme entries and exits are controlled for. If covered emissions continue to decline at that meagre rate, then by 2050 Safeguard facilities would still collectively be emitting more than 120 million tCO<sub>2</sub>e year—more than a quarter of Australia’s *total* annual emissions in 2025 (which were 458.9 million tCO<sub>2</sub>e: DCEW, *National Greenhouse Gas Inventory Quarterly Update: December 2025* (2026)).

<sup>106</sup> Climate Change Authority (above n 1) 99.

trucks to electric ones at its mining operations provides a high-profile demonstration of the Safeguard Mechanism’s failure.<sup>107</sup>

This trend appears set to continue. Each year, DCCEEW revises projections for ACCU demand. In 2024, projected ACCU demand in 2035 grew by 6 million units due to higher projected demand from Safeguard facilities as a result of lower projected on-site abatement and less projected generation of SMCs.<sup>108</sup> This figure was revised again and increased in 2025. The reason for this ever-increasing projected demand is that facilities are predicted to continue to rely on carbon offsets,<sup>109</sup> since they tend to be cheaper than on-site decarbonisation. Of course, part of the reason they are cheap is that they do not meet the high-integrity conditions needed to genuinely offset industrial emissions, as we demonstrate in Part 3.

## ACCU cost containment measure

If ACCU prices were to increase, then theoretically facilities would be further incentivised to reduce emissions on the ground. As long as Safeguard facilities are permitted to rely on offsets, the incentive to decarbonise will depend on the relative economics of on-site emissions reduction as compared to the price of ACCUs and SMCs.<sup>110</sup> However, the Safeguard Mechanism has an inbuilt cost-containment measure for ACCU prices, which limits the amount polluters will have to pay for ACCUs if the price rises in the market (set at \$82.68 in FY2025–26).<sup>111</sup> The measure provides facilities with certainty about the maximum compliance costs they will face if they breach their applicable pollution limit.<sup>112</sup>

While the cost containment measure is not predicted to be triggered for some years yet<sup>113</sup> due to the high quantity of ACCUs already in the market and more on the way under new methods, it does provide a clear limit on the liability of polluters. Removal of this measure would signal that ACCU demand and use should be restrained, and that the price of offsetting will eventually go up.

Despite the 2023 reforms, **key features of the Safeguard Mechanism—like the unlimited use of offsets, the cost containment measure, and the scheme’s weak emissions “caps”—have blunted the decarbonisation imperative facing individual polluters.** For the fossil fuel

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<sup>107</sup> Christopher Knaus and Adam Morton, ‘World’s biggest miner BHP backtracks on climate action with key projects put on ice, leaked documents reveal’, *The Guardian* (25 May 2026) <https://www.theguardian.com/world/2026/may/25/bhp-files-leak-mining-company-climate-action>.

<sup>108</sup> DCCEEW (above n 86).

<sup>109</sup> DCCEEW, *Australia’s emissions projections 2025* (2025) <https://www.dcceew.gov.au/sites/default/files/documents/australias-emissions-projections-2025.pdf>.

<sup>110</sup> DCCEEW (above n 86).

<sup>111</sup> The price is indexed each financial year to the consumer price index plus 2%.

<sup>112</sup> *Carbon Credits (Carbon Farming Initiative) Rule 2015* r 11AB.

<sup>113</sup> Climate Change Authority (above n 92).

industry, which makes up the lion's share of emissions from the scheme, this approach simply enables business as usual.

## ON A PAR WITH KAZAKHSTAN: AUSTRALIA'S UNFETTERED USE OF OFFSETS IN CARBON PRICING MAKES IT A GLOBAL OUTLIER

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The loophole at the centre of the Safeguard Mechanism that absolves polluters from decarbonising is also a rarity internationally. As the EY Net Zero Centre observed, "In most jurisdictions, carbon credits can only be used to meet voluntary commitments. Australia's approach, which embeds ACCUs into the [Safeguard Mechanism], is globally distinctive."<sup>114</sup> While carbon offset use is allowed to some extent in about 60% of carbon pricing schemes worldwide, this usually includes restrictions on the quantity and quality of those offsets.<sup>115</sup>

By allowing unlimited offsetting, Australia is aligned with historically underperforming and less stringent emissions trading schemes (**ETS**), such as that in the emerging economy of Kazakhstan. The Kazakhstani ETS also allows liable entities to use 100% offsets, but its carbon price has remained extremely low and the efficacy of the scheme is questionable.<sup>116</sup> By contrast, most well-established carbon pricing schemes in wealthy industrialised countries do not allow unlimited use of carbon offsets (see Figure 3).<sup>117</sup> For example, the EU ETS stopped the use of carbon offsets altogether for Phase 4 of its operation starting in 2021, and offsets are not permitted to be used in either the United Kingdom or Swiss schemes.<sup>118</sup> Other jurisdictions strictly limit the quantity of offsets that may be used to meet liabilities. For instance, in California, the share of offsets that can be used by an entity to fulfill its compliance obligations is limited to 6% for 2026–2030 emissions.<sup>119</sup> In Korea, this limit has been 5% since 2021.<sup>120</sup>

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<sup>114</sup> EY Net Zero Centre (above n 93).

<sup>115</sup> OECD, *Effective Carbon Rates 2025: Recent Trends in Taxes on Energy Use and Carbon Pricing*, OECD Series on Carbon Pricing and Energy Taxation (2025) 58, <https://doi.org/10.1787/a5a5d71f-en>.

<sup>116</sup> OECD (above n 115) 27, 62; Peter Howie et al, 'Evaluating policy success of emissions trading schemes in emerging economies: comparing the experiences of Korea and Kazakhstan' (2020) 20(63) *Climate Policy* 1.

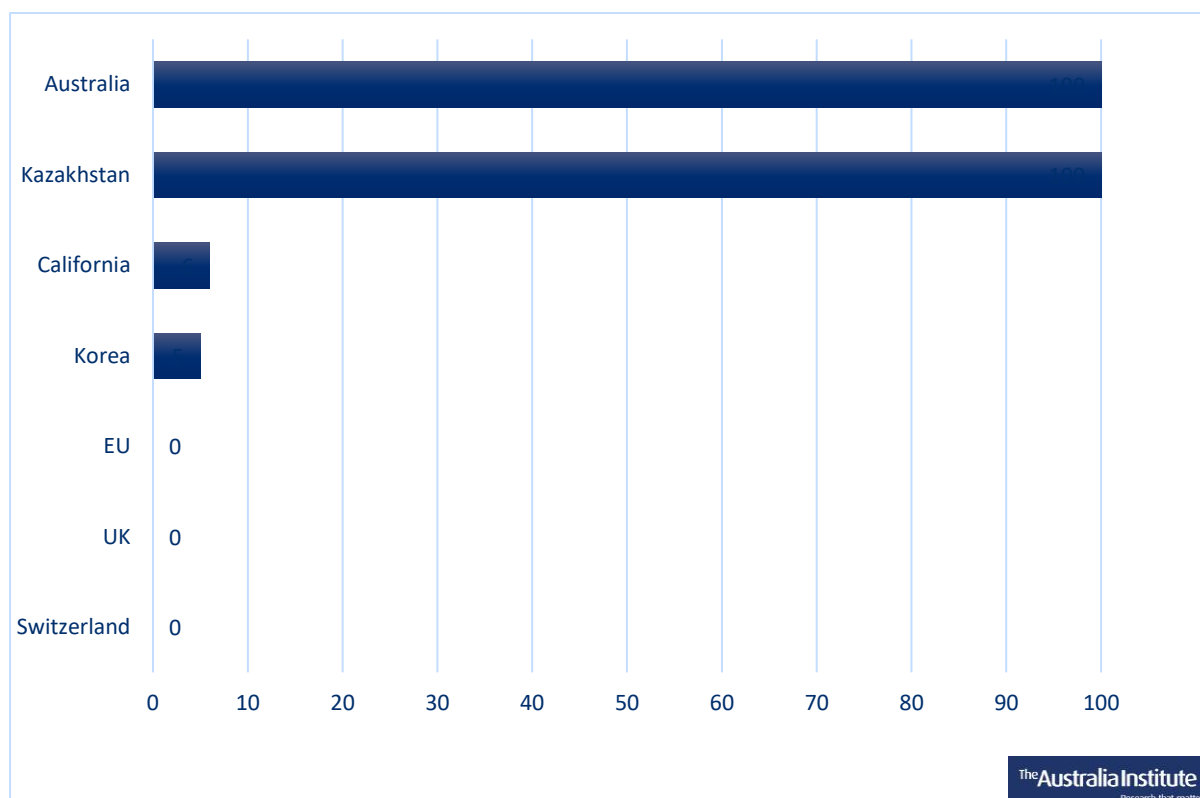
<sup>117</sup> OECD (above n 115) 60–61; Stephanie La Hoz Theuer et al, *Offset Use Across Emissions Trading Systems*, International Carbon Action Partnership (**ICAP**) (2023) [https://icapcarbonaction.com/system/files/document/ICAP%20offsets%20paper\\_vfin.pdf](https://icapcarbonaction.com/system/files/document/ICAP%20offsets%20paper_vfin.pdf).

<sup>118</sup> OECD (above n 115); Department for Energy Security and Net Zero, *UK Emissions Trading Scheme (UK ETS)* (2026) <https://www.gov.uk/government/publications/uk-emissions-trading-scheme-uk-ets-policy-overview/uk-emissions-trading-scheme-uk-ets-a-policy-overview>.

<sup>119</sup> Legislative Analysts Office, California's Cap-and-Trade Program: Frequently Asked Questions (2023) <https://lao.ca.gov/reports/2023/4811/Cap-and-Trade-FAQs-102423.pdf>.

<sup>120</sup> ICAP, *Korea Emissions Trading System (K-ETS)* (2026) [https://icapcarbonaction.com/system/files/ets\\_pdfs/icap-etsmap-factsheet-47.pdf](https://icapcarbonaction.com/system/files/ets_pdfs/icap-etsmap-factsheet-47.pdf).

**Figure 3: Proportion of offsets that may be used to meet abatement obligations in Australia and selected jurisdictions with carbon trading schemes (%)**



Sources: see above text (this section) and associated references.

## THE GOVERNMENT’S MOOTED INCLUSION OF INTERNATIONAL OFFSETS IS A TERRIBLE IDEA

In the upcoming 2026/27 review of the Safeguard Mechanism, the Albanese Government has committed to considering the inclusion of international carbon offsets in the Safeguard scheme.<sup>121</sup> This should be resisted, as it will further undermine the integrity of the Mechanism and its ability to drive real emissions reductions.

With the expansion of the carbon offset market under the Paris Agreement’s controversial article 6 arrangements (which facilitate international trade in carbon credits), there is a new frontier of dodgy carbon offsetting developing globally. Carbon offsets produced under the article 6 mechanism will inevitably be subject to the very same environmental integrity problems that have plagued carbon offsets under previous international regimes, including fundamental flaws relating to permanence, additionality and over-crediting, as outlined

<sup>121</sup> National Greenhouse and Energy Reporting (Safeguard Mechanism) Amendment (Reforms) Rules 2023: Explanatory Statement.

above.<sup>122</sup> International carbon offsets have been shown time and time again to have multiple inherent environmental, as well as social and economic, shortcomings.<sup>123</sup> Indeed, recent investigations into the nascent article 6 market show that of the first carbon offsets recognised under the market only *one in every 26* is likely to represent real emission reductions.<sup>124</sup> Worse still, Australia would have even less oversight of these types of credits, and less control over their quality and integrity.

International carbon offsets also pose greater risk of being double-counted—a situation in which a carbon credit is claimed by more than one entity, such as when the country in which the credit is produced and the company that has purchased the credit both claim the same abatement toward their respective national- and corporate-level targets.

As well as placing limits on the amount of carbon offsets that can be used for compliance purposes, most emissions trading schemes in comparable jurisdictions do not allow use of *internationally-generated* carbon credits as offsets for domestic emissions. For example, the EU, UK and Switzerland do not allow international carbon offsets in their carbon trading schemes (they do not allow any offsets at all);<sup>125</sup> and international offsets were banned from use in the New Zealand ETS in 2015.<sup>126</sup> Only the Korean ETS allows use of “international carbon credits”, albeit according to restrictive, project-based criteria (and recall that the country’s rules limit the use of offsets of any provenance to 5% of each entity’s compliance obligation).<sup>127</sup>

**Australia should therefore resist the inclusion of international offsets in our domestic scheme.** Introducing them into the domestic Safeguard Mechanism would further undermine a policy that has its own severe credibility issues to contend with, as explored above and in the next part.

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<sup>122</sup> Cullenward, Badgley and Chay (above n 28); Calel et al (above n 30); Romm et al (above n 28); Carbon Market Institute, ‘By the book: How effective are Article 6 carbon market rules?’ (2025)

<https://carbonmarketwatch.org/publications/by-the-book-how-effective-are-article-6-carbon-market-rules/>.

<sup>123</sup> Eleanor Scott, ‘Fit for 2040: Adding international carbon credits and carbon removals will undermine EU ETS contribution to climate target’, Carbon Market Watch (2025) <https://carbonmarketwatch.org/wp-content/uploads/2025/06/Fit-for-2040-Policy-Brief.pdf>.

<sup>124</sup> Isa Mulder, ‘First wave of Article 6 carbon credits misfire spectacularly’, Carbon Market Watch (2025).

<sup>125</sup> Department for Energy Security and Net Zero, *UK Emissions Trading Scheme for installations: how to comply* (2023) <https://www.gov.uk/government/publications/uk-emissions-trading-scheme-for-installations-how-to-comply/uk-emissions-trading-scheme-for-installations-how-to-comply>. Current EU discussions on allowing a limited use of international carbon credits relate to accounting toward the EU’s 2040 climate target under the European Climate Law, outside the ETS framework: European Commission, *2040 climate target* (2025) [https://climate.ec.europa.eu/eu-action/climate-strategies-targets/2040-climate-target\\_en](https://climate.ec.europa.eu/eu-action/climate-strategies-targets/2040-climate-target_en).

<sup>126</sup> OECD (above n 115).

<sup>127</sup> Ibid.

***Key takeaways:***

- **The so-called “hard cap”, introduced into the scheme in 2023 as a result of the Government’s negotiations with the Greens, doesn’t stop individual polluters from relying wholly on offsetting and lacks effective enforcement mechanisms (the Minister need only be subjectively satisfied that the relevant objective will be achieved). It has failed to stop new coal and gas projects from being approved, which add to the emissions covered by the scheme.**
- **By allowing polluters to use carbon offsets to meet 100% of their emissions baselines, Australia is an international outlier (along with Kazakhstan).**
- **Opening the Safeguard Mechanism to international offsets—something the Government has said it will consider—would make it easier for big polluters to purchase offsets that have even less integrity, over which Australian authorities have even less oversight. This would make the scheme even less effective than it is now.**

# Part 3: How ACCUs and SMCs undermine real emissions reduction

Time and time again, in study after study, carbon credits have been shown to lack integrity.<sup>128</sup> Internationally and domestically, experts have demonstrated that carbon credits rarely represent the carbon they claim to have saved, which undermines the rationale for carbon offsetting. Unfortunately, Australia's domestic market for ACCUs, as well as SMCs generated through the Safeguard Mechanism, continue to replicate these broader integrity problems.

## AUSTRALIAN CARBON CREDIT UNITS

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Australia's carbon credit market is centred on ACCUs, which are created under the legislative framework established by the *Carbon Credits (Carbon Farming Initiative) Act 2011* (Cth). Administered by the Clean Energy Regulator, this framework allows projects that purportedly avoid or remove carbon to be registered and ACCUs to be issued for each tonne of CO<sub>2</sub>e that the project purportedly causes to be avoided or removed. These ACCUs can only be registered and traded if issued in accordance with specific methods, which relate to the type of project being undertaken.

The vast majority of ACCUs issued to date stem from three families of methods—landfill gas, avoided deforestation and 'Human Induced Regeneration' (**HIR**)—that have been subjected to trenchant expert criticism on the ground that a large portion of them are unlikely to represent abatement that is real and/or additional.<sup>129</sup>

Landfill gas methods credit landfill operators for capturing biogenic methane from landfills and flaring it or combusting it for electricity generation. These methods have been subject to strong criticism on the grounds that state environmental obligations and the multiple revenue streams available for electricity generation from captured methane mean that many of these projects would have been undertaken anyway.<sup>130</sup> For example, one expert

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<sup>128</sup> The Australia Institute, 'Here are 23 Times Carbon Offsets Were Found to be Dodgy' (23 January 2024) <https://australiainstitute.org.au/post/here-are-23-times-carbon-offsets-were-found-to-be-dodgy-2/>.

<sup>129</sup> Andrew Macintosh et al, 'Implications of the Independent Review of Australian Carbon Credit Units (ACCUs) and Low-Integrity ACCUs for Australia's Safeguard Mechanism', Australian National University (2023); Baxter (above n 4). See below for specific criticisms of each of these three families of methods.

<sup>130</sup> Tim Baxter and George Gilligan, 'Verification and Australia's emissions reduction fund: Integrity undermined through the landfill gas method?' (2017) 4 *Australian Journal of Environmental Law* 27; Andrew Macintosh, 'The Emissions Reduction Fund's Landfill Gas Method: An Assessment of its Integrity', Australian National University (16 March 2022); Andrew Macintosh et al, 'A Critique of the ACCU Scheme Landfill Gas Method Reform Proposals', Australian National University (7 June 2024).

has estimated that around two-thirds of the abatement credited under the 2015 and 2021 landfill gas methods was non-additional.<sup>131</sup>

Even greater concerns pervade land-sector methods, which account for the majority of ACCU projects to date.<sup>132</sup> In line with the inherent problems of permanence and risk of reversal outlined above, some 90% of the ACCUs issued to avoided deforestation projects and 90% of the ACCUs issued to HIR projects may be high-risk or low-integrity credits.<sup>133</sup>

Avoided deforestation methods, which allow landholders to generate ACCUs by not clearing native vegetation where they had a legal right to do so, are of dubious additionality. For example, an investigation by The Australia Institute and the Australian Conservation Foundation calculated that for the credits issued to projects using a key avoided deforestation method to be additional, the counterfactual scenario would have had to entail rates of land-clearing in NSW orders of magnitude higher than historical averages, which would have been physically impossible to undertake in the relevant timeframe.<sup>134</sup>

HIR methods involve changing land management practices to allow native forest to regenerate on land where vegetation had previously been suppressed by human activities. Despite accounting for more ACCU issuances than any other project method, multiple studies have found HIR projects to have had negligible impacts on vegetation cover and carbon sequestration, and that many may simply be non-compliant with key regulatory requirements necessary for project integrity.<sup>135</sup>

The 2022 Independent Review of Australian Carbon Credit Units chaired by Professor Ian Chubb (**Chubb Review**) recommended suspension of any new credits being issued under the main Avoided Deforestation method due to questionable additionality,<sup>136</sup> and the method

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<sup>131</sup> Macintosh (above n 130).

<sup>132</sup> DCCEEW (above n 86); Clean Energy Regulator, *Annual Report 2024–25* (2025) <https://cer.gov.au/document/annual-report-2024-25>.

<sup>133</sup> Macintosh et al (above n 129).

<sup>134</sup> Richie Merzian, Polly Hemming and Annica Schoo, 'Questionable Integrity: Non-additionality in the Emissions Reduction Fund's Avoided Deforestation Method', The Australia Institute and Australian Conservation Foundation (2021) [https://australiainstitute.org.au/wp-content/uploads/2021/09/ACF-Aust-Institute\\_integrity-avoided\\_deforestation\\_report\\_FINAL\\_WEB.pdf](https://australiainstitute.org.au/wp-content/uploads/2021/09/ACF-Aust-Institute_integrity-avoided_deforestation_report_FINAL_WEB.pdf).

<sup>135</sup> Andrew Macintosh et al, 'Australian Human-Induced Native Forest Regeneration Carbon Offset Projects Have Limited Impact on Changes in Woody Vegetation Cover and Carbon Removals' (2024) 5(149) *Communications Earth & Environment*, <https://doi.org/10.1038/s43247-024-01313-x>; Andrew Macintosh et al, 'Non-Compliance and Under-Performance in Australian Human-Induced Regeneration Projects' (2024) 46 *The Rangeland Journal*, <https://doi.org/10.1071/RJ24024>; Andrew Macintosh et al, 'Trends in Forest and Sparse Woody Cover inside ERF HIR Project Areas Relative to Those in Surrounding Areas' (Working Paper, Australian National University, 2022); Andrew Macintosh, Don Butler and Dean Ansell, 'Measurement Error in the Emissions Reduction Fund's Human-Induced Regeneration Method' (Research Report, Australian National University, 14 March 2022). For a summary of key findings about HIR methods, see Wilson et al (above n 62) 33–35.

<sup>136</sup> Ian Chubb, *2022 Independent Review of Australian Carbon Credit Units* (Final Report, 2022) <https://www.dcceew.gov.au/sites/default/files/documents/independent-review-accu-final-report.pdf>. This

has since been revoked by the Regulator.<sup>137</sup> The HIR method has since expired (though it is likely to be replaced by a consolidated Proposed Integrated Farm and Land Management method<sup>138</sup>).

However, the ACCUs issued to projects when these methodologies were still permitted continue to be used by facilities under the Safeguard Mechanism to meet their emissions reduction obligations. For example, some 6 million land sector-based ACCUs were used by polluters to meet Safeguard baselines in 2024–25, which comprised over half of the total ACCUs surrendered under the scheme that year.<sup>139</sup> HIR methods alone were responsible for almost 3.7 million of these ACCUs.<sup>140</sup> The Woodside NWS Project, discussed earlier, surrendered over 276,000 ACCUs from HIR projects, and 71,000 ACCUs generated from projects using the now-revoked Avoided Deforestation method, to meet its emissions baseline.<sup>141</sup>

These concerns about land-sector ACCUs relate to whether these carbon credits represent the abatement they *claim* to. But even if they *did* fully represent the abatement claimed, such land-sector credits cannot fully offset fossil fuel emissions due to their inherent impermanence relative to the long duration of CO<sub>2</sub> in the atmosphere (see Part 1, above).

With the largest sources of new ACCU issuance coming from vegetation projects,<sup>142</sup> the quality of ACCUs generated under these methods continually being called into question, and the unfettered use of discredited ACCUs by Safeguard polluters to meet their baselines, the integrity of the entire scheme is seriously compromised.

## SAFEGUARD MECHANISM CREDITS

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SMCs, unlike ACCUs, are created internally to the Safeguard Mechanism, which means that in theory, they should have higher integrity. However, there are two main problems with SMC allocation that seem antithetical to the objective of the Safeguard Mechanism. The first problem is inherent to the Safeguard Mechanism’s design as an emissions intensity-based baseline-and-credit system: the ‘intensity’ element means that baselines can be loosened when facilities increase production; and the baseline-and-credit element means that all SMCs are ‘avoidance’ credits, with all the attendant problems of such credits discussed

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refers to the Carbon Credits (Carbon Farming Initiative – Avoided Deforestation 1.1) Methodology Determination 2015.

<sup>137</sup> DCCEEW, ‘Avoided deforestation 1.1 method’ (2025) <https://www.dcceew.gov.au/climate-change/emissions-reduction/accu-scheme/methods-closed/avoided-deforestation-11>.

<sup>138</sup> See <https://www.dcceew.gov.au/climate-change/emissions-reduction/accu-scheme/methods/integrated-farm-and-land-management#december-2025>.

<sup>139</sup> Baxter (above n 4).

<sup>140</sup> Ibid.

<sup>141</sup> Clean Energy Regulator (above n 15).

<sup>142</sup> DCCEEW (above n 86); Clean Energy Regulator, *Quarterly Carbon Market Report (March Quarte 2026)* (June 2026) 5.

earlier. Both elements mean that a polluting facility can increase its emissions and still be granted lucrative SMCs to sell or use (so long as the emissions remain below the baseline), and that naturally less emissions-intensive facilities can receive windfall credits. Second, changes to emissions measurement rules could be granting thousands of SMCs to certain coal mines despite no emissions mitigation taking place. We discuss each set of problems in turn.

## Inherent flaws in SMCs

SMCs are generated when a Safeguard facility's emissions are below its baseline for a given compliance year. Baselines are calculated for each facility based on the quantity of products it produces, the emissions-intensity benchmark assigned to each product, and the default annual decline rate of 4.9%. For example, a facility might produce LNG, which is assigned an emissions-intensity benchmark expressed as tonnes of CO<sub>2</sub>e per unit of output (such as per gigajoule of LNG). The decline rate gradually reduces the allowable emissions intensity over time. But because the baseline is calculated by multiplying this benchmark intensity *by the quantity of LNG produced*, if the facility produces more LNG, its total allowed emissions (its baseline) can increase. The shift after the 2023 reforms to industry-average intensity benchmarks plus a declining baseline makes the system more stringent than previously, but it does not fully prevent SMCs being generated during periods of rising production, meaning absolute emissions can still increase while SMCs are being issued.

These features mean that fossil fuel companies can increase production of inherently climate-harming products while still receiving a windfall gain in the form of sellable SMCs. This is the case for Chevron's Gorgon LNG processing project, which last financial year increased its emissions from 8.1 million tonnes to 8.8 million tonnes of CO<sub>2</sub>e, but still received almost 400,000 SMCs due to an increased baseline.<sup>143</sup> **This means Australia's primary emissions mitigation policy effectively provides a benefit to some polluters despite them increasing their production of fossil fuels.**

A further issue with the emissions intensity-based baselines is that some large coal mines have lower than industry-average emissions intensity not due to decarbonisation initiatives but merely due to favourable geology, meaning they are able to generate valuable SMCs for nothing, which other liable entities can use to offset their excess emissions.<sup>144</sup>

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<sup>143</sup> Adam Morton, 'Australia's biggest industrial polluter receives millions in carbon credits despite rising emissions', *The Guardian* (20 April 2025) <https://www.theguardian.com/environment/2025/apr/21/australias-biggest-industrial-polluter-receives-millions-in-carbon-credits-despite-rising-emissions>; Ketan Joshi, 'The Safeguard Mechanism's pro-fossil flaws – explained', *The Australia Institute* (11 August 2025) <https://australiainstitute.org.au/post/the-safeguard-mechanisms-pro-fossil-flaws-explained/>.

<sup>144</sup> Energy Resource Insights, *Briefing Report: Money for Nothing – Australia coal mines under the reformed Safeguard Mechanism* (October 2023).

Finally, abatement activities at Safeguard facilities, which could enable a facility to generate SMCs, are not even subject to the same (flawed) additionality tests as ACCU projects. Consequently, some polluters could be generating SMCs as a result of abatement activities that are already required by state or federal regulations, or by project approvals issued under such regulations.<sup>145</sup>

## Accounting tricks and ‘hot air’ credits from coalmines

The integrity of SMCs issued under the Safeguard Mechanism relies on an accurate emissions monitoring, reporting and verification scheme. Facilities use the NGER Act framework to report their emissions, which then informs the setting and achievement of baselines. However, emissions reporting from coal and gas facilities is currently mostly based on estimations, with potential flow-on effects for the creation of ‘hot air’ SMCs—credits that don’t represent genuine emissions reductions because the estimation procedure underestimates a facility’s emissions relative to its actual emissions.

This problem is particularly acute in the coal sector, where recent shifts in emissions accounting (from state-based to site-specific estimations) have led to concerns about coal mines across NSW and Queensland reporting large emissions reductions due to reporting-method changes, *not* changes in production or decarbonisation efforts.<sup>146</sup> Baselines calculated according to this data thus risk the creation of hot air SMCs without real-world benefit, which other operators of Safeguard facilities can then use to acquit their liability and avoid undertaking on-the-ground decarbonisation.

### **Key takeaways:**

- **ACCUs with deep and well-documented flaws and low integrity continue to be used by polluters to meet their obligations under the Safeguard Mechanism.**
- **SMCs can provide a windfall gain to polluters, even when polluters *increase* their emissions, highlighting the flaws of the avoidance credits and emissions-intensity baselines that are fundamental to the scheme’s design.**

<sup>145</sup> See Baxter (above n 6) 7, discussing the Gorgon LNG facility.

<sup>146</sup> Ember, ‘Australia’s coal mining emissions paradox’ (2025) <https://ember-energy.org/latest-insights/australias-coal-mining-emissions-paradox/accounting-shift-drives-emissions-reduction/>; Ember, ‘How an accounting shift could conceal millions of tonnes of coal mine emissions’ (2024) <https://ember-energy.org/latest-insights/accounting-shift-could-conceal-millions-of-tonnes-of-emissions/>.

# Conclusion

With the upcoming review of the Safeguard Mechanism beginning in mid-2026, policymakers should reconsider the role of carbon offsetting in our climate policy.

This report has outlined the key structural features of the Safeguard Mechanism that undermine its efficacy—the reliance on the flawed logic of ‘net’ abatement and the unfettered use of carbon offsets. An international outlier, Australia continues to allow some of the largest fossil fuel companies and biggest polluters in the country to meet mandatory baselines by purchasing carbon credits that lack integrity. This ultimately leads to more carbon pollution entering the atmosphere than is accounted for on paper, and exacerbates the dangerous climate impacts being felt around the country.

Moreover, the scheme appears to have done nothing to prevent new and expanded fossil fuel projects from being approved.

These policy settings arguably place Australia in breach of international law, as authoritatively interpreted by the International Court of Justice in its recent Advisory Opinion on climate change. They also contradict international statements the Albanese Government only recently endorsed, such as the Belem Declaration on the Transition Away from Fossil Fuels, which commits signatories to transitioning away from fossil fuels.

Thus far, the Safeguard Mechanism has been excellent at driving demand for carbon credits—to the great benefit of the carbon credit industry—but poor at reducing Australia’s emissions from the fossil fuel and other industrial polluters that it is meant to regulate. In short, the Safeguard Mechanism appears to be safeguarding the fossil fuel industry’s expansion plans instead of safeguarding Australians against the accelerating risks of climate chaos.