

**Australian Academy of Science submission on the
*National Environmental Standard for Environmental Offsets***

The Australian Academy of Science welcomes the opportunity to comment on the *National Environmental Standard for Environmental Offsets*. National Environmental Standards ('Standards') are a key component of reforming Australia's national environment laws.

Australia's new environmental laws should be clear about environmental offsets being the last resort in the mitigation hierarchy (avoid, mitigate, repair and offset). Australia's environmental law reform will fail to halt biodiversity decline unless environmental offsets are made measurable, enforceable, and outcome focused. The current Standard risks enabling offsets that meet process requirements but fail to deliver real ecological outcomes.

In order to achieve this, the Academy recommends:

- R1. Enforcing the Standard through outcome-based requirements, focused on measurable environmental protection and recovery outcomes, rather than process-based language alone. Enforce outcomes rather than principles.
- R2. Amend the Standard to ensure offsets account for temporal lag and deliver equivalent biodiversity outcomes within ecologically relevant timeframes.
- R3. Require rigorous, enforceable, transparent monitoring to ensure each direct environmental offset is demonstrably linked to relevant measurable ecological outcomes, and to prevent an offset from being treated as successful despite being ecologically ineffective.
- R4. Clear definition of the terms 'net gain' and 'compensate', including a test of outcomes.
- R5. Compulsory public reporting and enforceable obligations to ensure offsets achieve intended outcomes, including for projects of national interest.

The summary table on page 4 provides suggested changes to the Standard.

Outcomes should be enforced, rather than the principles

Currently, the test of whether the standard is adhered to does not consider whether the outcome is achieved, but whether the process aligns with the principles. This inappropriately elevates the Principles above the outcomes and objectives of the standard. For example, page 3 of the Standard, Section 7, Principle 2 states that *"An offset activity...will achieve the objective and outcomes in section 5 and 6 of this standard where that offset activity is consistent with the principles in sections 8, 9, 10, 11, 12, 13, 14 and 15 of this standard."*

This approach is insufficient to halt the decline of Australia's threatened species and ecosystems. The test of consistency with an outcome-based standard must be whether the outcome is achieved, or where the outcome is a future state, whether there is high confidence that the outcome will be achieved. The Academy recommends that these deeming clauses are removed so that adherence to the standard requires measurable, enforceable outcomes, rather than alignment with the principles. In order to ensure outcomes are enforceable, discretionary language (e.g. "having regard to") should be removed. See summary table (page 4) for suggested changes.

Recommendation 1: Enforcing the Standard through outcome-based requirements, focused on measurable environmental protection and recovery outcomes, rather than process-based language alone. Enforce outcomes rather than principles.

Offsets must account for temporal lag and require monitoring to ensure outcomes are delivered

Achieving genuine ecological equivalence in practice will be challenging under the current drafted form. In instances where the offset can restore similar habitat values from the immediate damage caused by the development, ecological restoration can take decades before biodiversity outcomes are realised. This temporal mismatch can result in a net loss of threatened species and vulnerable habitat over extended periods. The standard must recognise and account for temporal lag, requiring proponents to demonstrate avoidance of biodiversity loss in the first instance and ensuring offsets provide measurable and timely ecological gain to compensate for the delayed restoration outcome. See summary table (page 4) for specific issues with the current wording of the Standard.

Recommendation 2: Amend the Standard to ensure offsets account for temporal lag and deliver equivalent biodiversity outcomes within ecologically relevant timeframes.

Offsets should be monitored to ensure long term protection of that area. Monitoring and reporting obligations of offsets required by the Standard should include the following aspects:

- Approval conditions specify measurable ecological thresholds and corresponding management responses to be implemented if monitoring indicates that net gain is not being achieved
- Monitoring and verification designs enable trends in affected matters in the offset to be rigorously quantified regarding relevant threats, management actions, and environmental covariables, including weather variations.
- Environmental monitoring data, methodologies, assumptions, and compliance reports are publicly accessible in a timely and searchable form. It should be a requirement of direct offsets that monitoring data are contributed in raw form to the relevant Environment Information Australia database.
- Public reporting and independent verification of offset outcomes is supported by compliance mechanisms that minimise ministerial discretion and ensure offsets achieve their intended environmental benefits.

There is also a risk that a direct offset will be placed in a location where the affected protected matters cannot persist due to weather and climate change. In order to address this:

- Direct offsets must explicitly consider the current and reasonably foreseeable effects of weather and climate change on the condition, viability, resilience, and distribution of affected protected matters, with avoidance, minimisation and restoration measures adapted accordingly.
- Choice of direct offsets must be based on whether protected matters are likely to remain viable and resilient under projected weather and climate change conditions over ecologically and culturally relevant timeframes.
- Environmental offsets demonstrate a high likelihood of long-term ecological persistence under projected weather and climate change scenarios.

Recommendation 3: Require rigorous, enforceable, transparent monitoring to ensure each direct environmental offset is demonstrably linked to relevant measurable ecological outcomes, and to prevent an offset from being treated as successful despite being ecologically ineffective.

Clarity on the definition of key terms is required

A major issue with the Environmental Offsets Standard is the absence of a clear definition of 'net gain'. Without this, it is impossible to determine whether any offset has genuinely compensated for environmental harm.

The standard's outcome and principles depend on the concept of 'net gain', but 'net gain' is not clearly defined in the Exposure Draft or the overarching Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act). A working definition exists on page 8 of the Policy Position Paper ("the measurable improvement for the affected protected matter relative to an agreed baseline, with reference to the residual significant impacts of

an action or a class of actions"), but definitions in a policy paper carry no legal weight. Section 4 (Definitions) states that 'required net gain' is defined as *"the net gain for the protected matter within the meaning of section 527K of the Act."* However, section 527K of the EPBC Act does not clearly define what constitutes a net gain.

The Academy recommends that 'net gain' be defined directly in Section 4 of the standard, as well as the requirements, metrics and thresholds of the 'net gain test' to ensure consistent application across both the offsets and Restoration Contribution Holder, providing transparency and measurable outcomes. See the summary table (page 4) for a suggested definition. The Standard should also provide clear assessment thresholds and guidance for key concepts such as "residual significant impacts", including when avoidance, mitigation, offsets, or refusal should apply.

Similarly, the Environmental Offsets Standard should clearly define the term 'compensate'. This is defined in the MNES Standard as *"compensate, in relation to residual significant impacts, means either or both of: (a) an offset activity; and (b) a restoration contribution charge."* This definition does not include any requirement to demonstrate the effectiveness of the offset activity, or to ensure that the restoration contribution charge results in measurable ecological outcomes. The standard must be made to apply to offsets regardless of the pathway through which they are delivered, or it will fail to ensure desirable net outcomes for protected matters. See the summary table (page 4) for a suggested definition.

Recommendation 4: Clear definition of the terms 'net gain' and 'compensate', including a test of outcomes.

Actions and decisions must be available for public scrutiny

Without clear accountability mechanisms, there is a risk of offset commitments being approved, but not adequately delivered. While the incoming National Environmental Protection Agency (NEPA) has remit to strengthen oversight and improve transparency, the effectiveness of this system will depend on the independence of decision making, and the robustness of ongoing monitoring arrangements. The Standard should require transparent, long-term monitoring, public reporting, and independent verification of offset outcomes, supported by compliance mechanisms that minimise ministerial discretion and ensure offsets achieve their intended environmental benefits.

If ministerial discretion is to be retained for projects of 'national interest', these projects must remain subject to the full engagement of the mitigation hierarchy. For example, if a mining project determined to be of 'national interest' caused significant environmental harm, they would avoid the full consequences applied to comparable projects, undermining the reform intention of the EPBC Act and Standards. Impact avoidance and minimisation must be exhausted before restoration and offset measures are considered, with offsets being a genuine last resort. The enhanced penalties under NEPA for non-compliance demonstrate a significant shift from voluntary good practice to substantive financial and reputational consequence. Without clear requirements for 'national interest' projects to adhere to the mitigation hierarchy, there is a risk that developments with substantial environmental impacts could proceed without financial penalty. While the 'national interest' exemption does not appear within the proposed Standard, these projects must be aligned with environmental protection. The standard must embed minimum net outcome requirements in the standard itself and not relegate the outcome to be achieved to the Minister's satisfaction about an undefined quantity.

Recommendation 5: Compulsory public reporting and enforceable obligations to ensure offsets achieve intended outcomes, including for projects of national interest.

The recommendations in this submission address the key issues with the Standard for Environmental Offsets. Clear definition of key terms (R4) will ensure the Standard is clear and unambiguous. Enforcing outcome-based requirements (R1), accounting for temporal lag (R2), requiring rigorous monitoring (R3), compulsory public reporting and enforceable obligations (R5) will ensure the Standard is measurable and enforceable.

To discuss or clarify any aspect of this submission, please contact Lauren Sullivan, Science Policy and Advice Manager at science.policy@science.org.au.

Summary of recommendations

Text in Standard	Problem	Recommended change	Associated Recommendation Number
<p>Page 2 of the MNES Standard provides a definition of compensate. This definition is also relevant to the Environmental Offsets Standard, as it discusses offset activities:</p> <p>“<i>compensate</i>, in relation to residual significant impacts, means either or both of:</p> <p>(a) an offset activity; and</p> <p>(b) a restoration contribution charge”</p>	<p>This approach is inconsistent with the government’s response to the Samuel Review’s recommendation that National Environmental Standards be outcome-focused, measurable, granular and legally enforceable.</p> <p>Carrying out an offset activity, of itself, will not compensate residual impact. True compensatory outcomes hinge on evidence that the activity is effective, or has been shown to be effective, in mitigating a similar impact.</p> <p>Restoration contribution charges risk converting non-offsetable biodiversity loss into a financial transaction untethered from demonstrated ecological outcomes.</p>	<p>The definition for “compensate” should be amended to include a requirement to demonstrate the effectiveness of the offset activity and a positive outcome.</p> <p>To demonstrate a positive outcome post-approval, a proponent must provide evidence from monitoring the effects of the offset activity until a net gain outcome is achieved, after which it must be maintained for the duration of the residual significant impacts.</p> <p>Offsets delivered via a restoration contribution charge should still be subject to the standard and must still achieve the outcomes.</p>	<p>R1</p>

<p>Page 2, Section 4 (Definitions):</p> <p>States that ‘required net gain’ is defined as “<i>the net gain for the protected matter within the meaning of section 527K of the Act.</i>” However, section 527K of the EPBC Act does not clearly define what constitutes a net gain.</p>	<p>A clear definition of net gain is important not only for offsets, but also for payments to the Restoration Contributions Holder. A definition in the Standard itself must also include a test of measurable outcome.</p>	<p>Define “net gain” in the Standard</p> <p>Suggested definition: Net gain means a state in which the protected matter is measurably more secure, resilient, functionally connected and viable following implementation of the action and all associated compensation measures than it would have been had the action not occurred.</p>	<p>R4</p>
<p>Page 3, Section 6, Outcomes:</p> <p>The following outcomes of this standard are intended to promote the objective in section 5:</p> <p>(a) offset activities compensate for the damage that will or may be caused by residual significant impacts of actions or classes of actions on affected protected matters and support recovery or conservation;</p> <p>(b) offset activities provide a measurable improvement to the affected protected matter (compared to the baseline for that protected matter at the time of the relevant decision) that is equal to or greater than the required net gain for the protected matter; and</p> <p>(c) offset activities provide a high level of certainty that affected protected matters will be protected and enhanced.</p>	<p>The outcome to be achieved is unclear. Offsets are a mechanism used to deliver a specified net outcome, against a specified baseline. That specified net outcome is not stated here. There is inadequate information to guide the correct and appropriate use of this standard. It is essential to define the net outcome required from offsets in the offsets standard.</p>	<p>Suggested rewording:</p> <p>A sustainable net gain in the status of the affected protected matter compared to the baseline for that protected matter at the time of the relevant decision has been established and validated by scientifically rigorous monitoring.</p>	<p>R1</p>

<p>Page 3, Section 7, Principles (1) through (4).</p>	<p>Consistency with the principles is treated as sufficient basis for concluding that an approved action complies with the Standard.</p> <p>This approach appears inconsistent with the government's response to the Samuel Review's recommendation that National Environmental Standards be "outcome-focused, measurable, granular and legally enforceable."</p>	<p>Omit.</p>	<p>R1</p>
<p>Page 5, Section 9, Principle 2 – Security, (2):</p> <p>2) An offset activity will be securely protected if there is an appropriate protection mechanism in place that provides a high level of confidence that:</p> <p>(a) the required net gain will be delivered; and</p> <p>(b) where the offset activity is a direct offset, the offset activity will be maintained for the applicable maintenance period.</p>	<p>This refers to offset delivery and maintenance during the activity period. There is no mention of the requirement of long-term protection of an offset site from future degradation. This is necessary for the offset to contribute to "overall recovery and conservation".</p> <p>This section only indicates that maintenance will continue until the offset becomes self-sustaining. There is no indication of the need for long term protection of that area from future clearing or degradation once it has been classified as being self-sustaining.</p> <p>There is no requirement for monitoring and independent verification of direct offsets.</p>	<p>The standard must recognise and account for temporal lag, requiring proponents to demonstrate avoidance of biodiversity loss in the first instance and ensuring offsets provide measurable and timely ecological gain to compensate for the delayed restoration outcome.</p> <p>2(b) should include the requirement for the direct offset to be "rigorously monitored" and "independently verified".</p>	<p>R2, R3</p>
<p>Page 5, Section 9, Principle 2 – Security, (8), Note 1:</p> <p>Note 1: An example of an offset activity that is a direct offset is the protection of land.</p>	<p>The example 'protection of land' is insufficiently precise and risks treating land tenure outcomes as biodiversity outcomes. Protection of land should only qualify as an offset where it delivers demonstrable, additional, measurable and enduring conservation benefits for the protected matter affected by the action, including improvements in condition, connectivity, recovery prospects or viability. Protection alone should not be assumed to constitute a biodiversity gain.</p>	<p>Note 1: An example of a direct offset activity is the protection and long-term management of habitat that delivers a demonstrable, additional and enduring improvement in the condition, extent, connectivity, recovery prospects or viability of the protected matter affected by the action.</p>	<p>R1, R2, R3</p>

<p>Page 7, Section 11, Principle 4, (1):</p> <p>"There must be a high level of confidence that an offset activity will deliver a measurable improvement to the affected protected matter relative to a baseline that reflects what would likely happen in the absence of the offset activity."</p>	<p>There is no indication of timeline here, and how the longer time required to deliver a measurable improvement impacts how a "net gain" is calculated. For example, if it is projected to take well beyond when a habitat is cleared to reestablish, will the offset require restoration plus protection/retention of an at-risk area of habitat?</p>	<p>The standard must recognise and account for temporal lag, requiring proponents to demonstrate avoidance of biodiversity loss in the first instance and ensuring offsets provide measurable and timely ecological gain to compensate for the delayed restoration outcome.</p>	<p>R2</p>
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