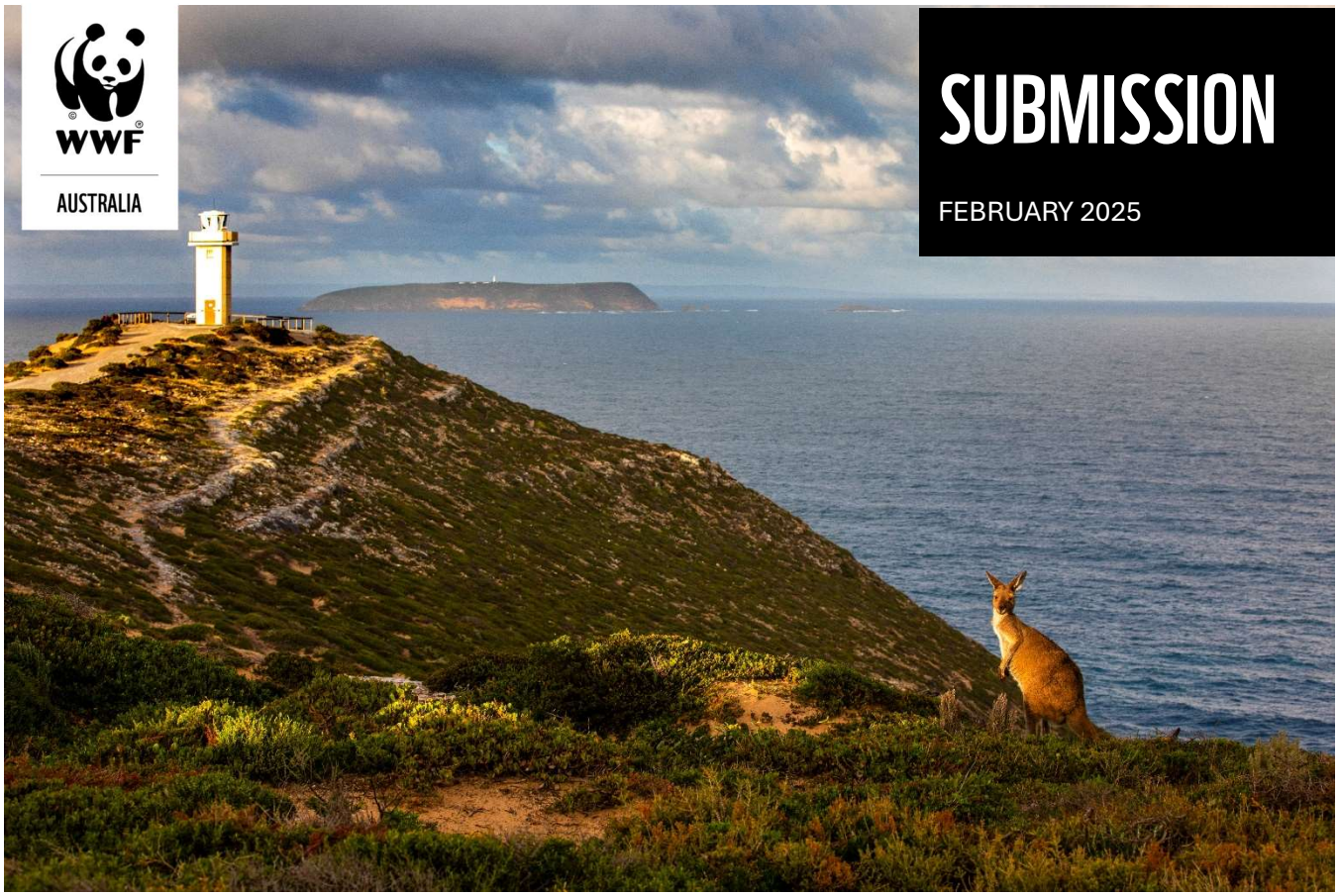

WWF-AUSTRALIA SUBMISSION TO *MANAGING THE BIODIVERSITY IMPACTS OF RENEWABLE ENERGY* (VICTORIA)

World Wide Fund for Nature-Australia (WWF-Australia) is part of the WWF International Network, the world's largest independent conservation organisation. WWF's global mission is to stop the degradation of the planet's natural environment and to build a future in which humans live in harmony with nature. WWF-Australia has approximately two million financial and non-financial supporters.

WWF-Australia welcomes the opportunity to provide a submission to the draft Handbook for the Development of Renewable Energy in Victoria, Discussion Paper A better approach to managing the biodiversity impacts of renewable energy and related documents.

WWF-Australia is committed to nature positive renewable energy development in Victoria and take a keen interest in the work that the Victorian Government is doing that will assist this. This submission makes some general remarks but is largely structured around questions that were posed in the discussion paper and on the Engage Victoria website. Not all the questions have been answered, and these questions have been omitted from this submission.

General

With respect to the Discussion Paper and Draft Handbook, the Purpose and the current regulatory context could be more clearly explained. For example, the purpose describes this as "…..guidance for addressing the impacts of onshore wind energy facilities on Victoria's biodiversity…." Yet it only relates to species impacts and not all biodiversity impacts (e.g. native vegetation removal). Similarly, the *Planning and Environment Act* requirements do not mention the need for a permit to remove native vegetation (Clause 52.17) which presumably applies to these types of developments. It would be useful to provide a diagram or list of all the requirements relevant to biodiversity and renewable energy related projects (or at least for onshore wind energy projects), so the role of these guidance materials can be better contextualized and understood.

Question 1. Do you think there should be delayed commencement for the guidance and/or transitional provisions? See pages 4-6 of the discussion paper.

The new guidance should be applied as soon as practicable as it will improve environmental outcomes and be helpful to business.

Question 2. Do you agree with the list of draft principles? See pages 7-8 of the discussion paper.

Most of the principles are sound. Some specific comments are provided in the table below.

In addition, WWF recommends an additional Principle to be included relating to Nature Positive. Something like: "Renewable energy projects should contribute to the Nature Positive goal and targets and ensure there is more nature as a result of the project than there was before. This is a key contributor to Victoria's goal of stopping biodiversity decline by 2030". The addition of this principle is important as renewable energy targets are no more important than biodiversity targets – both are equally important.

Table 1: Principles and their rationale

	Principle	Rationale	WWF Comment
1.	Renewable energy is a key contributor to achieving Victoria's emissions reduction and renewable energy targets. This is critical to the medium and long-term security of biodiversity and reducing the impacts of climate change.	Renewable energy projects are likely to have environmental impacts that need to be appropriately managed. The contribution to emissions reduction efforts made by renewable technology will be essential in combatting climate change, which also poses significant threats to the long-term future of Victoria's biodiversity. These issues need to be balanced	It is very important to achieve (and exceed) Victoria's emissions reduction and renewable energy targets for a range of reasons, and this will also help to reduce the impacts of climate change to Victoria's biodiversity, but by how much is hard to say. It is an exaggeration to say that this (Victoria's emissions reduction and renewables

	Principle	Rationale	WWF Comment
		through the planning process.	etc) is critical to the medium and long-term security of biodiversity. It is suggested that the second sentence be re-worded to: “This is critical to reducing global warming and will help to reduce the serious impacts of climate change on biodiversity”.
2.	Renewable energy development should be encouraged in areas with the least impact on biodiversity.	Biodiversity itself is a major contributor to limiting and adapting to climate change. Biodiversity impacts from renewable energy developments should be avoided, minimised and mitigated to the greatest extent possible.	Agree
3.	The mitigation hierarchy should be applied to all biodiversity impacts, not just ‘species of concern’. In practice, this means that a proponent should demonstrate that they have taken steps to avoid, minimise, mitigate and offset impacts.	This is consistent with existing requirements under the Victorian P&E Act and EE Act, and the Commonwealth EPBC Act.	Agree
4.	Only after the avoid, minimise and mitigate steps of the mitigation hierarchy have been applied can offsets/compensation be considered.	This is consistent with the internationally recognised methodology for applying the mitigation hierarchy and the approach under the EPBC Act.	Recommend amendment to read: "Offsets should only be considered as a last resort after adequate and comprehensive steps have been taken to avoid, minimise and mitigate impacts. Cash payments in lieu of offsets are not accepted."

	Principle	Rationale	WWF Comment
5.	The no net loss objective applies to species of concern likely to be significantly impacted by a proposed renewable energy project.	A no net loss objective for the species most at risk from renewable energy projects is a proportionate and appropriate objective that delivers on the Government's commitment to a 'balanced' approach. The objective is achieved by applying the mitigation hierarchy.	Agree that the objective should apply to the Species of Concern but disagree with the objective of no net loss and the current extent of species on the list. We also question what 'significantly impacted' means, as there is an admission later on (in table 2) that we are unable to assess that under the no net loss scenario. This principle is also potentially inconsistent with Principle 3 and leaves one to question what the mitigation hierarchy objective is for everything else (given Principle 3 says "all biodiversity impacts"). Since the adoption of Nature Positive, which requires us to move beyond minimising negative impacts into nature repair, no net loss is no longer a suitable objective for the mitigation hierarchy. It should be net gain (i.e. Some proportion like 20% beyond no net loss). This is also precautionary (Principle 8) for species given the uncertainties with how species gains will be delivered and accounted for. This is discussed further under Question 3.

	Principle	Rationale	WWF Comment
6.	Species of concern will be identified in accordance with a publicly available research methodology.	DEECA is in the process of completing research that identifies the species most at risk from onshore wind energy facilities, which will be the first list of identified species of concern.	Agree
7.	Assessment of proposed renewable energy projects will be influenced by the level of risk presented by the proposal according to the risk criteria set out in the draft Handbook.	Developments proposed in areas identified as presenting a 'high risk' according to the risk criteria contained in the draft Handbook are likely to face greater scrutiny, potentially longer approval processes and stricter approval conditions to manage risks than those constructed in areas identified as 'low risk'.	Agree, noting this isn't so much a principle as a truism.
8.	The precautionary principle should be applied when assessing the risks posed by a particular development.	This is an internationally recognised environmental regulatory principle and included in the FFG Act and EPBC Act. Given the uncertainties that exist in relation to biodiversity impacts of renewable energy development, this is an important tool in delivering on the Government's commitment to achieving a balanced approach. The principle is to be applied as required by the FFG Act and EPBC Act.	Agree
9.	Any mitigation and/or compensation measures to be incorporated into renewable energy projects should be based on the best available information and research and be explicitly linked to identified impacts on species of concern.	This ensures that the purpose of a mitigation/ compensation measure is clear and that its effectiveness can be ascertained. It is also consistent with the Government's commitment to aligning Victoria with global best practice.	Agree

	Principle	Rationale	WWF Comment
10.	All renewable energy projects should be subject to monitoring, reporting and adaptive management requirements. Monitoring data collected must be suitable for robustly informing state and regional mortality information and be made publicly available.	To inform future risk assessments and developments, data must be collected and reported in a way that is useable and comparable. DEECA will publish a template which will set out how this is achieved.	Agree. It is critical that DEECA design this so as to maximise its scientific utility, beyond just mortality information (e.g. data is usable for PVAs and other modelling)

Defining the goal for managing species impacts

Question 3. Do you agree with the proposed objective that a proponent must ensure that their renewable energy development will result in no net loss to any species of concern identified as being present? See pages 9-11 of the discussion paper.

No.

No net loss can mean many things depending on the reference scenarios in which it is measured against. Clear guidelines around the counterfactual reference scenario help to measure what would happen to the target natural capital without the impact and the offset[1].

To date, there is a lot of evidence that demonstrates 'no net loss' has been leading to overall decline in biodiversity outcomes[2]. Simply relying on no net loss is no longer a suitable objective for the mitigation hierarchy, including for species impacts. This is why.

We are in an extinction crisis affecting Australia and the world. The declining state of nature and its impact on global society and future generations was documented in the 2019 report of the Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES)[3] which showed the perilous state of nature and its impacts on society. This led to the United Nations General Assembly and Biodiversity Summit calling for an overarching Nature-Positive Global Goal for Nature[4] a position subsequently spruiked by G7 leaders who announced that "*our world must not only become net zero, but also nature positive, for the benefit of both people and the planet*.[5]"

The Nature Positive Goal is defined as: *Halt and Reverse Nature Loss by 2030 against a 2020 baseline, and achieve full recovery by 2050.*[6] The Global Biodiversity Framework (GBF) adopted by 196 countries

[1] https://www.nespthreatenedspecies.edu.au/media/jqbhn3ri/5-1-the-many-meanings-of-no-net-loss.pdf
[2] Maron et al. (2023). Nature positive' must incorporate, not undermine, the mitigation hierarchy. Nature Ecology and Evolution, 8(1). https://research.bangor.ac.uk/portal/files/63129445/Nature_Positive_ms_R2_1.pdf
[3] IPBES (2019): Global assessment report on biodiversity and ecosystem services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services. E. S. Brondizio, J. Settele, S. Díaz, and H. T. Ngo (editors). IPBES secretariat, Bonn, Germany. 1148 pages. https://doi.org/10.5281/zenodo.3831673
[4] Locke, H. Rockström, J., Bakker, P., Bapna, M., Gough, M., Hilty, J., Lambertini, M., Morris, J., Polman, P., Rodriguez, C. M., Samper, C., Sanjayan, M., Zabey, E. and Zurita, P. (2020) *A Nature-Positive World: The Global Goal for Nature* https://library.wcs.org/doi/ctl/view/mid/33065/pubid/DMX3974900000.aspx
[5] G7 2030 Nature Compact, Cornwall, UK, 2021
[6] Nature Positive Initiative https://www.naturepositive.org/app/uploads/2024/02/The-Definition-of-Nature-Positive.pdf

in 2022 including Australia gives effect to the Nature Positive goal and has 23 global targets for action to 2030[7].

In Australia, the State of the Environment Report released in 2022 painted a similarly dire picture to IPBES: ecosystem collapse, accelerating species extinctions, and failing environmental protections. In response, the Federal Government ramped up their commitment to nature positive and the GBF by releasing their Nature Positive Plan. The Victorian Minister for the Environment joined other Environment Ministers across Australia working together to achieve a Nature Positive Australia aligned with the ambition in the GBF. This resulted in the release of Australia's Strategy for Nature 2024-2030, endorsed by Environment Ministers and containing ambitious targets from the GBF of particular relevance to Australia (e.g. zero new extinctions) [8] [9] [10].

Nature Positive requires us to move beyond just minimising negative impacts and start tackling the repair and recovery of nature. Enabling sustained, coordinated public and private investment is the key to achieving Nature Positive, however it has nonetheless raised the bar for environmental protection. Together with the fact that current approaches have failed to slow the rate of decline, this means we all need to do more to protect and restore nature in our daily business, in addition to sharing responsibility for addressing historical impacts. The test – for every decision – needs to be whether there is absolutely more nature as a result of the decision than there was before. This applies to all of us – governments, business and individuals. For the mitigation hierarchy this requires net gain to be the objective, not no net loss.

Measuring net gain outcomes relies on three different elements of environmental accounting; 1) applying the mitigation hierarchy to direct and attributable impacts (including indirect and cumulative impacts); 2) addressing more-diffuse impacts through the value chain; and 3) achieving further conservation benefits unrelated to compensation[11].

In terms of the amount of gain (beyond no net loss), this needs to be set in a way that is not too onerous but clearly provides a net increase in biodiversity. WWF recommends setting this at least 20% beyond no net loss for the time being (noting the UK has set this at 10%). This needs to be precautionary (Principle 8) for species given the current uncertainties with how species gains will be delivered and accounted for, hence there is an argument that 20% for species is too low.

What is just as critical here is that the objective needs to be absolute, and in this case demonstrate *absolute* net gain. This means improvements need to be real: they need to be measured from a fixed baseline state rather than assuming that because biodiversity is in decline, a bit less decline over a period of time is sufficient – it's possibly an improvement from what might have happened but it's not

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[7] CBD (2022) COP15: Final text of Kunming-Montreal Global Biodiversity Framework, CBD/COP/DEC/15/4. Decision 15/4: https://www.cbd.int/decisions/cop?m=cop-15

[8] Environment Ministers meeting 9 June 2023 Agreed Communique https://www.dcceew.gov.au/sites/default/files/documents/emm-communique-09-june-2023.pdf

[9] Environment Ministers meeting 10 November 2023 Agreed Communique https://www.dcceew.gov.au/sites/default/files/documents/emm-communique-10-nov-2023.pdf

[10] Environment Ministers meeting 24 June 2024 Agreed Communique https://www.dcceew.gov.au/sites/default/files/documents/emm-communique-21-june-2024.pdf

[11] Maron et al. (2023). Nature positive' must incorporate, not undermine, the mitigation hierarchy. Nature Ecology and Evolution, 8(1). https://research.bangor.ac.uk/portal/files/63129445/Nature_Positive_ms_R2_1.pdf

equivalent to the loss (see for example Thomas et al 2024). This is even more critical for species impacts – we cannot accept a net situation where there are actually less animals after the mitigation hierarchy and compensatory measures are applied than before, which is a very real risk with current offsets policy.

WWF also notes that the discussion paper (p.11) states "… further work is required to determine the appropriate methodology and metrics to quantify impacts and gains to accurately determine if net gain is being achieved". This is not so, as the methodology and metrics already exist (for native vegetation) and are already used to calculate no net loss – using these to calculate say a 20% net gain (beyond no net loss) should be relatively trivial. Given the approach for species impacts is still being determined, the need to achieve net gain can be factored into that process without extra work.

In terms of broader planning policy, this net gain approach should not be limited to species and should not just apply to renewables projects. Absolute net gain should be adopted consistently for all native vegetation removal and species impacts assessments for all relevant planning applications. We understand a transition to absolute net gain for planning and development may require some lead time to be made operable.

WWF also notes that in the rationale for 'no net loss' (Table 2) the discussion paper states:

> " It removes the need to undertake any complex analysis to quantify the significance of predicted impacts on the species at a statewide level based on incomplete information/data. It is only necessary to assess the predicted impact of the development, which is something that proponents are already required to do."

This statement does not make sense. It is not possible to adequately assess the impact of a development on a species without understanding its context at a statewide or (ideally) national level? This is fundamental. This is confirmed by the statement in the draft handbook (p.11): "The aim of any offsetting / compensation measure is to improve the probability of persistence of an impacted species overall, not only within the immediate area of the development".

We do recognize that we have significant knowledge gaps and for most species we are unable to assess the loss of a certain number of individuals of a species in terms of its broader population impact. But these knowledge gaps need to be filled, and we need to reach a point where we can equate mortality (or other loss) of species to the impact on that species and respond accordingly. At the moment we cannot even consider, say, 500 dead bats from a development and determine whether that is a low, moderate or high impact to that species. But it is imperative that we get to that point otherwise we cannot determine how critical it is to avoid and minimise those impacts, nor can we determine how to achieve no net loss or net gain because we don't actually know what the "loss" is beyond 500 individual bats.

Question 5. Should species that are not listed as 'threatened' under the *Flora and Fauna Guarantee Act* or the *Environment Protection and Biodiversity Conservation Act* be considered as part of this guidance?

See pages 13-14 of the discussion paper.

Yes.

The approach to assessing species impacts based on a Species of Concern list is sensible. The statement regarding the list being "….a dynamic document that is periodically updated based on new data and information" is strongly supported and emphasizes the need for investment into data gathering by proponents and public agencies, based around a clear plan that targets important information gaps.

The 2024 Joint Ministerial Statement emphasizes the primacy of the *Flora and Fauna Guarantee Act 1988* and its strategy Protecting Victoria's Environment - Biodiversity 2037 (Biodiversity 2037). A fundamental premise of Biodiversity 2037 is that to stop biodiversity decline we need to focus much more on less threatened species to ensure that they do not become threatened. This considers the ever-growing threatened species list and the reality of finite resources and is a sensible approach. There is also genuine community concern, and potentially a loss of social license for renewable energy operators, if birds and bats are killed in large numbers particularly where these are species with which particular communities identify. The species of concern list therefore needs to be expanded to include some non-threatened species that are known to be potentially impacted (above some mortality threshold) such as Wedge-tailed Eagles (estimated mortality at least 1000 birds/year) and White-striped Freetail Bats. No doubt there are several other species in this category, and this will change as more data is gathered.

Risk criteria

See pages 14-17 of the discussion paper.

Question 6. Do you agree with the proposed risk criteria?

In part - we suggest some improvements.

Criteria 1 Biodiversity Values Maps. These look very useful, and we have no doubt are based on the best available data. The biodiversity value maps will be very useful decision-making tools for industry to make risk-based assessments on project siting. In addition to the values maps, clearer guidance on 'no go' zones would help clearly demarcate areas with high biodiversity values. For remaining areas, a risk-based approach makes sense, and each project will need to consider how its development may or may not impact certain biodiversity values. Identifying 'no go' areas does not imply that remaining areas are 'go' zones and require less attention to environmental impact assessments and approvals processes. It is not recommended that 'go' areas are identified without proper public consultation and broad participatory mapping. In addition to biodiversity values maps, additional work could be undertaken in conjunction with regional NRM groups to identify priority areas for regional restoration, offsets and other compensatory measures, so these works can proceed in advance of development.

WWF proposes that Criterion 2 be spatialized, based on some evidence-based thresholds (or 'rules of thumb') i.e. what science tells us about species likely to be utilizing those areas. These could be fuzzy lines if you are concerned about uncertainty. They can be improved periodically as more data comes to hand. Having these shown on maps will make the proponents' job much easier and is more likely to incentivize the outcome you are seeking (avoiding sensitive areas as much as possible).

WWF understands that risk-based criteria are designed to encourage proponents to avoid sensitive areas and impacts on sensitive biodiversity. They do not in themselves change the assessment approach. This point could be made much more clearly in the handbook, perhaps using a table or diagram to list all the implications. For example what are the consequences to a project of choosing a lower risk pathway or a higher risk pathway in terms of time, cost and uncertainty.

The mitigation hierarchy

See pages 17-22 of the discussion paper.

General - Avoiding and minimizing impacts (draft handbook pp. 9-10)

Despite a stated emphasis on avoid and minimize, the practical application of this needs to be strengthened.

“Avoidance is the first and most important step”. We agree with this statement.

It is very easy for a proponent to say they have avoided (and minimized) impacts by reducing the number of turbines for example – when in fact they never planned to build that many in the first place. It is also very easy for them to argue that avoidance or minimization is not “reasonable” based on cost – yet regulators may not know whether that is a real limitation due to commercial in confidence issues.

The handbook requires much stronger and clearer requirements to action this avoidance step.

For example: “Proponents are encouraged to choose development sites with low biodiversity values and, once the site has been chosen, design the infrastructure to avoid impacting biodiversity within the chosen site”. This requires a sentence before which should say: “Proponents **must** avoid development sites with high biodiversity values”. We have already stated our preference for “no-go” zones identified upfront by DEECA (and not just by the developers as a consequence of their site planning as currently proposed). There are places that must be protected from development, and these are important for achieving national and state biodiversity targets and there are impacts that are unacceptable and cannot be offset. This does not in any way undermine the importance of renewable energy (Principle 1) as there are vast areas of the state appropriate for renewable energy development.

WWF recommends DEECA draw on its scientific and technical expertise to threshold the Biodiversity Values Maps to identify a category of high biodiversity value area that should be avoided for onshore wind development. This should consider habitat preferences of species potentially impacted on site and from nearby areas as well as disturbance footprint.

Measures like curtailment have been shown to be effective for reducing microbat mortality, and with relatively small impact on energy production/economic returns (Voigt et al 2024, Florent and Bennett 2024, Bennet et al 2022). Blanket curtailment should be included in the suite of minimise actions (not mitigation) as it is an essential measure to minimise impacts on microbats, by up to 90%. This is discussed further under Question 22.

Question 7. Do you agree with the proposed approach to offsetting residual impacts on species through the use of compensatory measures?

Not currently as it is a little too vague and lacks some key principles. This should ultimately be about offsets, not compensatory measures, so there is a direct quantifiable link between losses and gains. We encourage DEECA to complete the outstanding scientific work needed to enable a robust offsetting approach, including Population Viability Analyses (PVAs) and related work for all relevant species. Any short-term approach should complement and facilitate this and not undermine it.

Question 8. What could an alternative offsetting approach look like?

As explained in response to Question 3, WWF believes that the objective for the mitigation hierarchy (and offsets or compensatory measures) needs to be absolute net gain (*sensu* Thomas et al 2024), rather than no net loss. The response to Question 3 also argued that the amount of gain (beyond no net loss) should be at least 20% beyond no net loss for the time being, and arguably more to account for uncertainties with how species gains will be realized with available compensatory measures. We argued this approach should apply across the board to all biodiversity impacts (including for native vegetation removal) and all relevant planning approvals.

WWF supports the statement on p.11 of the draft Handbook: “The aim of any offsetting / compensation measure is to improve the probability of persistence of an impacted species overall, not only within the immediate area of the development.” However, as acknowledged in the various materials we are currently data and knowledge poor and unable to assess probability of persistence, and relevant impacts for most species. We have incomplete mortality data that indicates 30000-50000 bats, and 10,000-14,000 birds (including 1000 wedge-tailed eagles) are killed every year (E. Bennett, Elmoby Ecology, pers. comm.) But we are currently unable to determine what level of impact that is for each of those species.

Hence, we need to be precautionary and take best guesses, informed by experts, while driven by the priority to avoid and minimize impacts in the first instance.

We strongly encourage the resourcing and prioritization of ARI staff to undertake this task so they can continue the excellent modelling and PVA related work that is underway. This is critical to give everyone confidence that we are achieving our net gain outcomes for species and habitats and may potentially enable DEECA to modify or relax certain compensatory or data gathering requirements of developers once we have a more complete knowledge base. This should inform the development of a robust, evidence-based and accountable approach to determining absolute net gain from the mitigation hierarchy when species impacts are involved. This will include high integrity offsets for species impacts where necessary.

For now, WWF prefers the assumed/average loss approach rather than the cash based compensatory approach set out in the draft Handbook presentation (slide 25) for determining loss. Only direct compensatory measures should be included. For example, this could consist of restoration/management of a site of similar habitat (with confirmed occupancy of that species) and of a size/quality estimated to be able to increase the population more than the number of the assumed loss (which may have to be estimated from mortality data). Such an approach could satisfy the species impacts (as best we can currently) as well as habitat loss/native vegetation removal offsets (with long

term security). Quality assurance and monitoring of the actual results over time will assist in informing future, PVA-informed impact assessment and offset requirements.

WWF prefers the use of recovery plans over action statements as actions are prioritised and often costed. There are also more recovery plans than action statements for key species affected. Even better is the suggestion of using Specific Needs Assessments where these exist or can be done by DEECA.

Whatever scheme is developed, the following principled approach is recommended:

1. Irreplaceable biodiversity cannot be offset and must be avoided.
2. Offsets must be secured, and gains start to be realised before impacts commence.
3. Offsets must be high integrity, like for like and deliver an absolute increase in the biodiversity impacted (quality/quantity, species population, etc.).
4. Only direct compensation actions should be included (as per the handbook presentation: i.e. “Actions that result in quantifiable and tangible conservation benefits to the impacted species, such as habitat restoration / rehabilitation, breeding programs, or threat abatement”.
5. Cumulative impacts need to be assessed and inform requirements.
6. Cash payments in lieu should not be used (given most such schemes in Australia have failed badly) but there may be potential to use a credit-based scheme where there is an existing “gain” in place to purchase (Point 2).

An ideal scheme would be led by the government who would identify priority sites or actions for particular species. The benefits of particular actions would ideally be linked to a PVA for a species so the benefits and impacts could be linked over time. These could be part of broader spatialized plans to deliver on Australian/GBF targets for species, restoration and protection for example, thus encouraging broader contributions (e.g. regional restoration) to be made by industry.

These locations and actions should ideally be available ahead of the development occurring. This gives developers the opportunity to invest in management works ahead of time to satisfy potential offset requirements and, in addition, to contribute to broader nature positive actions that have genuine impact and can help meet corporate (and global) targets.

If we assume this goes together with maps showing areas to avoid, the benefits of front-loading these conservation measures – avoidance, repair and restoration – ahead of development fronts are considerable and include certainty and streamlining for industry, community confidence and coordinated efforts towards state/national targets.

Question 9. Should the amount of indirect compensation, such as funding species research, be limited?

Yes. Indirect compensatory measures such as research should never be included in offset schemes, but they are useful and can be encouraged in other ways.

Similarly other indirect (non-offset) compensation should be over and above offset requirements (e.g. assisting corporate nature positive targets, or for increasing social license). Government has a role in encouraging and prioritizing such actions, and if possible, directing and counting them towards state and national targets (e.g. biodiversity strategy, Australia's Strategy for Nature/GBF).

Question 10. Are there actions that should not be permitted as a compensatory measure?

Yes. This is covered in Question 8 and 9 above

Question 11. Should the Department of Energy, Environment and Climate Action (DEECA) be primarily responsible for the delivery of compensation measures?

See response to question 8 above. DEECA should lead the scheme but not necessarily its delivery. If the government is delivering as well, we do not support the use of cash payments other than for purchasing credits (offset gains already realized) **prior** to impacts occurring.

Monitoring, reporting and adaptive management

See pages 22-23 of the discussion paper.

Question 13. Do you prefer a government-led monitoring and reporting program?

WWF prefers a government designed program with monitoring data collected (mostly) by proponents. The program needs to be based on the best available science and designed to inform key knowledge gaps and inform adaptive management. Government is well placed to do that, given its science capabilities (e.g. Arthur Rylah Institute). However, there is little evidence that a wholly government-led program of monitoring, data collection and reporting will actually work and there are examples where it has performed poorly (e.g. Biodiversity 2037). A fully cost-recovered model could theoretically work, however even this can be problematic and still subject to changes in government priorities and other externalities.

It is preferred that proponents are required to gather data including ongoing monitoring, in line with the monitoring program requirements. This should be a requirement of permit but also incentivized so that there could be pathways to reducing operational constraints once key data gaps and questions are able to be answered. All data needs to be publicly reported and made available for further analysis (e.g. by Environment Information Australia). There is also an opportunity for proponents to contribute to broader research questions through this approach and gain social license as a result. Approaches are being piloted around the country such as through the Western Australian Biodiversity Science Institute project on a "shared environmental analytics facility"[12].

[12] https://wabsi.org.au/latest-industry/groundbreaking-data-sharing-project-to-better-inform-environmental-assessments/

Government should undertake periodic reporting (e.g. annually) at a whole of sector level, using the data provided by proponents. Resources for this oversight and reporting should be cost-recovered if feasible.

Species-specific guidance

Proposed Brolga Guidelines

Question 18. Compensatory measures may be required to offset / compensate for a mortality due to collision with a wind turbine or powerline directly associated with a wind energy facility or due to impacts to wetlands:

a. **What compensatory measures should be considered to compensate for this loss?**

Compensatory measures should utilize the same approach and principles as for bats and other species. (see Questions 7-11 under Mitigation Hierarchy above)

Proposed Bat Guidelines

See pages 30-32 of the discussion paper.

Question 19. Do you agree that there is a need for Bat-specific guidance for onshore wind farms in Victoria?

Yes.

Question 21. Is there anything relating to bat species that is missing from the proposed content that you think should be included or addressed in the Bat Guidelines or future guidance?

Yes. Consistent with the comments above, the objective should be absolute net gain, rather than no net loss. Due to lack of data, which is acknowledged throughout the material, the approaches need to be precautionary (Principle 8) until such time as knowledge gaps are filled and mitigation measures are proven. There is a key role for proponents and operators here to gather data that will be needed to provide such evidence. Avoidance and minimization are critical, as there is no evidence that “offsets” or compensatory measures will work, and the emphasis should be on reducing mortality to minimal levels and avoiding/restoring impacted habitat.

Question 22. Are there specific matters or parameters you think should be included in guidance regarding considerations for mitigation or compensation options?

Yes.

Currently we are dealing with high mortality of bats, without an understanding of the impact on populations of the species. Compensatory measures (e.g. habitat restoration) are currently unable to

reliably address these impacts, but we do know that various operational measures can reduce mortality (Voigt et al 2024). Given our lack of understanding of the significance of impacts on bat species (or populations) as a consequence of bat mortality we need to be precautionary (Principle 8).

Curtailment has been shown to be an effective measure for reducing bat mortality, by up to 90% and with relatively small impact on energy production/economic returns (Voigt et al 2024, Florent and Bennett 2024, Bennet et al 2022). It is an essential measure to reduce impacts on microbats – and should be considered part of the minimize component of the mitigation hierarchy.

WWF advocates for curtailment between February to April when wind speeds are 7m/s or less – which is likely to reduce microbat mortality by 90%, noting that this should be extended to November to April in areas where Southern bent-wing Bats may occur. This should be accompanied by a program of data gathering by operators which will assist in resolving key knowledge gaps and provide evidence to DEECA in support of potential relaxation of curtailment requirements (e.g. time of night, or month or wind speed etc.) where the evidence supports this.

Other operational measures have been shown to reduce bat mortality, and as evidence is gathered on their efficacy (and cost) these should be trialed for potential use in conjunction with a curtailment regime that reduces mortality to minimal levels and enables the industry to produce renewable energy cost-effectively.

Question 23. Are there specific matters or parameters you think should be included in guidance regarding considerations for buffering during siting decisions?

Yes. See answer to Question 6 above.

Thank you again for the opportunity to contribute to this important reform process.

For further information:

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