



Biodiversity Council

Submission to Managing the biodiversity impacts of renewable energy

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About The Biodiversity Council

The Biodiversity Council brings together leading experts including Indigenous knowledge holders to promote evidence-based solutions to Australia's biodiversity crisis. The Council was founded by 11 universities with the support of Australian philanthropists.



Introduction

The Biodiversity Council welcomes the opportunity to provide feedback on Victoria's approach to managing the biodiversity impacts of renewable energy, including the [Draft Handbook for the development of renewable energy in Victoria](#) (the Handbook) and the [Discussion Paper - A better approach to managing the biodiversity impacts of renewable energy](#) (the Discussion Paper).

Our understanding

The Handbook has been developed to provide detailed guidance on how to best manage biodiversity impacts while facilitating renewable energy development and to inform planning and environmental assessment requirements under the *Planning and Environment Act 1987* and the *Environment Effects Act 1978*.

The Handbook:

- clarifies the Government's expectations in relation to managing biodiversity impacts
- describes the methods that can be used by project proponents to manage the biodiversity impacts of their projects using the mitigation hierarchy
- establishes a framework for more species-specific guidance to be developed and applied to manage impacts most relevant to those species.

The Handbook primarily focuses on the biodiversity impacts from the operation of wind turbines on birds and bats. This is achieved in two ways:

- 1) Providing a method to determine biodiversity risk
- 2) Setting an objective of 'no net loss' for species of concern and requiring the mitigation hierarchy of avoid, minimise, mitigate and offset to be applied.

The approach is not a significant improvement from the current approach to managing impacts of bird and bat collisions with wind turbines. Below we outline our concerns and recommendations that would deliver better outcomes for managing impacts of bird and bat collision with wind turbines and provide greater clarity to proponents. We seriously doubt the new approach will deliver "no net loss" and we cannot see any method by which no net loss is guaranteed unless the government embarks on a series of population viability analyses for vulnerable taxa.

Key concerns

Determining biodiversity risk

The Handbook uses three criteria to determine biodiversity risk. The first criterion is whether the project site is located in an area of high biodiversity value. This is determined by referring to a terrestrial habitat values map or marine biodiversity values map. The second criterion is whether the project area is located adjacent to a 'significant conservation area' meaning a World Heritage Site, [Ramsar](#) site, wetland protected under [JAMBA](#), [CAMBA](#) or

[ROKAMBA](#), a parks or reserve or a native vegetation offset site. The third criterion is whether there is a 'heightened risk' to species of concern based on site-specific biodiversity information. There is a heightened risk if multiple species of concern are identified, a species that is listed as Critically Endangered under the *Flora and Fauna Guarantee Act 1988* that is also a species of concern is found at the proposed site, information provided is inadequate, there is a limited understanding of critical aspects of a species behaviour/population dynamics, or similar nearby facilities have reported mortalities for species of concern and those species are found at the project site.

There are problems with this approach.

In regard to the first criterion, the terrestrial habitat values map provides greater weight to areas of native vegetation. The problem is that the birds or bats at highest risk from collision with wind farms are not necessarily associated with high coverage of native vegetation. For instance, Black Falcon, that the [Arthur Rylah Institute](#) (ARI) identified as a high likelihood and moderate-high consequence of collision, is mostly associated with [open grassland or lightly wooded areas in Victoria](#). Plains-Wanderer is identified by ARI as having a moderate-high likelihood and a high consequence of collision but its preferred habitat of 'sparse grasslands' is potentially missed in native vegetation mapping. Red-tailed Black-Cockatoo is identified as having moderate-high likelihood and a high consequence of collision feeds on both blocks of [forest and scattered paddock trees](#) of Stringybark and Buloke and they often nest in gums in paddocks. These scattered trees may not be picked up at the scale of mapping used for the habitat values map. Orange-bellied Parrot is identified by ARI as having a moderate-high likelihood and a high consequence of collision. While its preferred breeding habitat is in native vegetation, migrating birds have been recorded in coastal [pasture](#).

The second criterion reflects currently protected areas. Several reviews have assessed whether Victoria's current reserve system meets the JANIS criteria of comprehensiveness, adequacy and representativeness. A [2022 review](#) found significant shortfalls in the protection of some vegetation types, with much of the remaining unprotected extent occurring on private land. This criterion does not address this bias.

The third criterion of 'heightened risk' is also problematic. Firstly, heightened risk is triggered by multiple species of concern, or a single species that is Critically Endangered under the *Flora and Fauna Guarantee Act 1988* (FFG). This approach could allow significant irreversible impacts on individual species that are not listed as Critically Endangered.

The adequacy of information provided by a proponent is not relevant to biodiversity risk. Simply put, if a proponent does not provide adequate information, then the application should not be assessed.

The uncertainty element of this criterion - the state of knowledge about a species behaviour and or population dynamics is relevant to risk. However, this shouldn't be assessed by a

proponent. DEECA should provide a list of species for which it considers that there are high levels of uncertainty and prescribe a precautionary approach for these species.

Finally, this criterion considers whether other nearby facilities have reported mortalities for species or concern and those species are found at the project site. This is problematic because it relies on wind farm managers to adequately monitor mortality and transparently share the information. In 2019, ARI undertook a review of existing post-construction monitoring data to evaluate its efficacy at estimating annual mortalities of birds and bats and develop options for future monitoring programs. The review found that the monitoring programs were not designed in a way that would enable valid estimation of total mortalities, and that changes to the existing monitoring approach were required. The approach to monitoring outlined in the Handbook does not address these recommendations. To consider local or regional impacts on species of concern, DEECA should require a standard approach to monitoring and the submission of proponent data to a public repository. It should be advising proponents that data collected from other facilities must be considered in the assessment.

Biodiversity Council's recommended approach to determining biodiversity risk

DEECA should undertake population viability analysis for all species of concern. Population viability analysis is key to understanding whether the death of individuals from collision with wind turbines is going to have a significant impact on the likely persistence of a species. Population viability can be very sensitive to small increases in adult mortality. Until regional scale population viability analyses are completed, development must be placed on hold in areas where species distribution models show that sensitive and highly imperilled species are likely to occur - this would include the entire core range of a subspecies like the Red-tailed Black-Cockatoo.

DEECA should adopt a strategic approach to considering cumulative population-level impacts for species of concern. In 2006, the Federal environment department commissioned [Biosis to model](#) the cumulative risks posed by multiple wind farms. This is a much more credible approach than considering mortality data, even if the method was rigorous and there was full transparency from wind farm managers. Population Viability Analysis is tried and tested quantitative science that is fundamental to ensuring no new extinctions.

Managing biodiversity risk

The Handbook's objective for species of concern (threatened species with collision risk) is 'no net loss'. This is the same objective as for the native vegetation clearing regulations in Victoria. However, there are key differences in the nature of impacts between native

vegetation clearing and wind turbines that makes the adoption of this objective problematic. The clearing regulations are dealing with the footprint of impact from construction (an easily measurable one-off impact) on native vegetation, a 'static' asset. The impact is easy to measure and predictable. In contrast the impact of wind turbines on birds and bats is ongoing from operation, and is on a 'dynamic' asset, individuals within a population who happen to be in proximity to the blades. This makes it inherently difficult to measure and unpredictable.

No net loss assumes that we have a good understanding of the current state of the asset, the likely impact on it and the significance of that impact in order to determine 'net impact'. We may be able to predict this with some degree of accuracy for native vegetation, but we cannot do it from populations of species of concern based on the habitat values map and site records.

The no net loss objective is achieved through application of the mitigation hierarchy of avoid, minimise, mitigate and offset. This is effort- rather than outcome-based. It is also easy to game simply by proponents proposing more turbines than they would realistically construct to demonstrate that they have scaled back development.

The Handbook's list of minimisation and mitigation options gives proponents a large amount of discretion to choose how to avoid and mitigate impacts on birds and bats from turbine strike. An evidence-based approach would provide species-specific guidance on which minimisation and mitigation measures are most effective for each species of concern.

There are two main ways in which collision strike on birds and bats from turbines is reduced - siting to reduce the frequency with which birds and bats fly near the turbines and curtailment (reducing turbine speed) to avoid birds and bats colliding with them. Both approaches need to be considered during the planning phase for a wind farm. Adaptive management triggers are irrelevant to siting decisions and are unlikely to lead to additional curtailment to address biodiversity risks. Curtailing turbine operations occurs for maintenance, due to weather conditions or for grid management. It results in reduced energy production and therefore has a financial impact on wind farm operators. [Legal and contractual issues](#) between the wind farm operators and wholesale energy purchasers may also arise from curtailment. Proponents are only likely to consider curtailment if a regulator deems the impact on a population to be unacceptable without it. This has to be determined very early in the process to ensure it is factored into financial contracts and projections made in the early stages of the project. If it is not factored in at the early stages, it is highly unlikely to be used at a later stage once unacceptable impacts on threatened species are detected. It essentially becomes 'off the table' for adaptive management approaches.

Given the lack of clear standards or thresholds for impacts on biodiversity, it is highly likely that there will be 'residual' biodiversity impacts that remain after the avoid, minimise and mitigate steps have been undertaken. The Handbook states that offsets will be used to compensate for residual impacts on species of concern to achieve no net loss. In the

absence of population models it is very difficult to determine the number of individuals to 'generate' to achieve no net loss. This increases the chances that there is net loss within a population from a wind farm project.

Moreover, the offsets provided by proponents are likely to be based on habitat improvements, and not 'gain' in individuals. Even if a proponent partnered with for example, Zoos Victoria, to 'produce' more individuals of a threatened species this should go to overall species recovery and not to compensate for the direct loss of a threatened species.

If it is not possible to increase population numbers through offsetting measures, then this should inform thresholds for impacts on birds and bats and consideration of whether a more precautionary approach should be taken to siting or mitigation measures.

There are more general concerns with the use of species-specific offsets for wind farm projects. Species-specific offsets have the potential to distort the main biodiversity market operating in Victoria - the native vegetation credit market - resulting in perverse outcomes for biodiversity. There are liquidity problems in the Victorian native vegetation credit market, but in general more scarce vegetation types cost more to offset and therefore provide a price signal to avoid impacting them. The credit register reduces transaction costs for proponents seeking native vegetation offsets. However, it is highly unlikely that there will be adequate supply of species-specific offsets and so transaction costs will be high. Proponents are often highly motivated to reduce the time required for regulatory approvals. It is conceivable that the high transaction costs to provide species-specific offsets may result in perverse incentives to impact native vegetation because it is easier to offset.

In addition, the Handbook allows for indirect compensation. Since the formal establishment of native vegetation offsets in 1997, under *Victoria's Native Vegetation Management - A Framework for action*, Victoria has not provided for payment-in-lieu for private proponents. This opens the door for it. There are two main problems with payment-in-lieu. Firstly, when available offsets for a biodiversity offset are scarce, payment-in-lieu becomes more attractive. Yet this very scarcity makes it less likely that an offset meets like-for-like requirements. In a functional biodiversity credit market, if offsets are sufficiently hard to find then the clearing shouldn't take place. Secondly, payment-in-lieu schemes transfer financial risk to government agencies, which is problematic when the amount paid by a proponent is inadequate to pay for a compliant offset. This means that [either the taxpayer subsidises the proponent's environmental costs or the full offset is not delivered](#). This is much less likely to occur when proponents are required to provide an offset directly as a condition of approval. The introduction of payment-in-lieu for private proponents undermines offsets policy in Victoria and is likely to lead to more non-compliant and partial offsets.

In addition to impacts on biodiversity, the lack of clear standards or thresholds for impacts on biodiversity is poor regulatory practice. It does not make it clear the outcome that is sought, and it does not support compliance. The high levels of discretion mean that proponents who choose to prioritise biodiversity concerns and reduce the number of

turbines or implement curtailment are likely to be disadvantaged relative to proponents who focus on profit maximisation and merely make a case that they have taken all practicable steps.

Biodiversity Council's recommended approach to managing biodiversity risk

DEECA should revise its objective to set a clear test of acceptable impact for species of concern.

DEECA should prescribe where avoidance is mandatory for particular species of concern based on inadequate information about risk to species or effective mitigation measures.

DEECA should prescribe which minimisation or mitigation measures should apply to particular species based on their effectiveness. It should be clear to proponents when curtailment is likely to be required so that this can be built into their project plans.

DEECA should commission research to review the effectiveness of minimisation and mitigation applied for particular wind farms.

DEECA should only allow an offset when it demonstrates an expected increase in the population of a species of concern, using a population viability analysis model, not simply improving habitat or indirect approach. The Handbook should make it clear that the offsets are intended to fully compensate for the losses in a reasonable time-frame. If it is not possible to increase population numbers through offsetting measures, then this should inform thresholds for impacts on birds and bats and consideration of whether a more precautionary approach should be taken to siting or mitigation measures.

DEECA should commission mortality monitoring using standardised approaches and use this data to inform regulatory settings.

First Nations

In regard to cultural significance, the Handbook states that for any proposed renewable energy facility that is likely to impact a culturally significant species, the proponent should consult with Traditional Owners and First Nations people. However, this does not extend to culturally significant places.

In terms of managing impacts on culturally significant species, the Handbook states that “consideration should be given to identifying and applying appropriate monitoring, reporting and adaptive management measures.” There is no requirement to work with First Nations people to determine the best way of managing impacts on culturally significant entities.

The Handbook ‘encourages’ proponents to work with traditional custodians of the land on which they intend to develop to “self-determine how they wish to participate in the development of renewable energy facilities on Country”. This is not mandatory and does not require proponents to apply the principles of Free, Prior and Informed consent to all Victorian renewable energy projects.

Biodiversity Council’s recommended approach to First Nations

The Handbook should require the principles of Free, Prior and Informed consent for all renewable projects.

The Handbook should provide protection for culturally significant places.

The Handbook should require proponents to work with First Nations people to determine the best way of managing impacts on culturally significant entities.