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Friends of the Earth Melbourne

Your Details

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Friends of the Earth Melbourne Submission:

Star of the South Environmental Impact Assessment

About Us: Friends of the Earth (FoE) Melbourne is a member-based organisation based on Wurundjeri Country in Collingwood, VIC that has been organising and campaigning for social and ecological justice in Victoria for over 45 years. We are a member of the national federation of environmental justice groups FoE Australia. We are committed to the creation of an environmentally sustainable and socially equitable future, and campaign for a world where environmental protection, social justice and economic welfare for all people, go hand in hand.

Introduction: Friends of the Earth Melbourne is pleased to make a submission to the Environmental Impact Assessment under the EPBC Act for the Star of the South offshore wind farm. The project is considered the most advanced offshore wind proposal in the country, promises to make a major contribution to the state's efforts on climate change, and we have been following the project closely since 2014. Offshore wind is an essential technology as part of local and global efforts to address climate change, itself a top threat to biodiversity. As Australia is in the early stages of developing an offshore wind industry, it is absolutely essential that strong environmental protections are built in from the beginning.

Our submission responds to the following key issues:

- Marine mammals
- Birds
- Benthic environment
- Underwater noise
- Recommended changes to strengthen mitigation

Marine mammals

According to the EIS, the offshore wind farm area and its surround overlap with biologically important areas for two whale species: 1) a foraging biologically important area for the Blue Whale and 2) reproduction (approximately May to September) and migration (approximately April to October) biologically important areas for the Southern Right Whale.

While the main migratory route for Humpback whales is outside the offshore wind farm area, Humpbacks were observed moving through the offshore wind farm area from September to early December during their southern migration, and less frequently during their northern migration from April to August.

11 Of the 19 species of marine mammals identified using the Protected Matters Search Tool were sighted during field surveys, as well as 4 additional cetacean species.

Baleen whales such as the Blue Whale and Southern Right Whale are particularly sensitive to marine noise. Given the possibility of these key vulnerable and threatened species travelling through the offshore wind area, particular attention needs to be paid to mitigating construction noise from impact piling. The EIS details thresholds for each of the key whale species, with particular attention paid to Southern Right Whale.

The EIS notes that Southern Right Whales could occur in the offshore wind farm area and surrounding waters, most likely between March and December (particularly May to November). This makes measures to limit construction during these periods particularly important for mitigating any impacts on Southern Right Whale.

Recommended changes to mitigation measures

Table 11-8 sets out mitigation methods for impacts associated with construction and vessel noise during the construction period. Friends of the Earth welcomes the use of a suite of mitigation measures, including the use of marine observers, passive acoustic monitoring, acoustic deterrent devices, soft-start procedures, stop-work orders and use of double-bubble curtains. Together these are essential to keep any potential impacts on marine mammals to an absolute minimum.

We recommend tightening language for the mitigation measures listed in this table, in particular removing phrases such as “where reasonably practicable”. For example, the Mitigation UWN-M05 ‘Southern Right Whale Reproductive biologically important area limit’ will limit construction in the offshore and inshore sides of the project to May-September and October-April respectively. These are important measures that reduce the risk of noise impacts and should be included, not just ‘where reasonably practicable’.

The mitigation measures will also benefit from clearer behavioural triggers for stop-work orders. For example, Southern Right Whales and Blue Whales are also predominantly solitary animals, so stop-work procedures should be triggered on the sighting of a single whale within the precautionary zone rather than a sighting of three. Adopting these changes would be in line with the Star of the South’s conservative approach to minimising any potential noise impacts on Southern Right Whale described throughout the chapter, and help ensure Residual Impacts are minor.

Birds

There are a number of key factors that determine the risk of harm to birds from large structures like offshore wind farms:

- Location and habitat
- Bird flight heights and turbine blade sweep
- Barrier and avoidance effects

According to Reid and Baker (2025), “The height at which birds fly, relative to the swept area of wind turbine blades, is clearly one of the most important attributes that influences the risk of collision with wind farms”. The Star of the South EIS identifies flight heights for a number of seabirds, and design changes include raising the ‘air gap’ between the tip of the turbine blade and the sea to 30m above sea. This is a welcome design change, which will particularly avoid a number of Albatross species

and shows how these measures can mitigate potential impacts on seabirds.

Studies have shown that seabirds exhibit avoidance behaviours at sea, and do navigate around wind farms¹. As noted in the EIS, seabird studies from the Aberdeen Bay Wind Farm now expect significantly lower amounts of bird strike compared to initial predictions. This is encouraging, but given the Southern Hemisphere’s different seabird species there is a clear case for a rigorous seabird monitoring program. While natural avoidance behaviours reduce the risk of collisions, they may also increase the total foraging distance for seabirds.

Monitoring and mitigation:

The EIS proposes an adaptive monitoring system for the management of birds within the offshore wind project area.

This is welcome but can go further, with the potential to use new technologies to improve studies and options for mitigation.

Onshore wind farms are beginning to adopt Identiflight camera technologies to reduce bird strike, particularly raptors such as wedge-tailed eagles, as has been successfully applied at the Cattle Hill wind farm in Tasmania. By identifying birds as far as 1km away, it then triggers curtailment at the wind farm to reduce the risk of bird strike. Independent studies have shown that Identiflight can reduce bird mortality by as much as 85%². This specific technology may not be appropriate for offshore wind farms but demonstrates what is possible.

¹ Reid and Baker, Ross Analytics and Latitude 42 Environmental Consultants Report to DCCEEW, ‘Impacts on Birds from Offshore Wind Farms in Australia An ecological risk assessment’, 2025

² McClure et al, ‘Confirmation that eagle fatalities can be reduced by automated curtailment of wind turbines’, 2022, <https://besjournals.onlinelibrary.wiley.com/doi/10.1002/2688-8319.12173>

Other systems that are being deployed in the northern hemisphere include RADAR-camera hybrids, which is being used as part of the seabird monitoring program at the Neart na Gaoithe offshore wind farm in Scotland. In conjunction with another series of collision detection cameras, this system gathers “data on flight activity, patterns and behavioural responses within and around [the offshore wind farm] NnG and information on bird collisions.” Critically, the technology enables 24/7 monitoring of birds in the targeted study area.

This shows that seabird monitoring technologies are advancing and operating at comparable wind farms in Europe, and should form as part of the EIS for the Star of the South. The EIS could require that the best available technology for seabird monitoring and curtailment at the time of commissioning be implemented for the project. Monitoring should occur 24/7 to provide the most accurate amount of data.

The EIS notes the potential for cumulative impacts given multiple proposals in the Gippsland Offshore Wind Zone. Participation in a regional marine and bird monitoring project could form a condition of all licenses to ensure that projects are adequately planning, monitoring and managing impacts in a coordinated way across projects, while building a solid evidence base for how to mitigate any potential impacts.

Visual mitigation

Studies have shown that painting turbine blades alternate colours has been an effective way to mitigate bird collisions, with one study of an onshore wind farm demonstrating a 70% reduction in collisions³. A recent DCCEEW study reviewing measures to avoid and mitigate collisions of birds and bats with wind turbines found there is limited evidence outside of this study on the effectiveness of this measure. The review also notes that most studies have involved painting turbines post-construction, which may be an option if seabird monitoring during operation shows there is a need for additional mitigation.

Benthic Ecology

Star of the South undertook a range of the benthic ecology and seabed, including seagrass and reef. The EIS states that high profile reef, defined as having a reef height greater than 0.5m is “considered more biodiverse, with biota often more abundant, and subsequently has higher ecological value”. While low profile reef habitat was described as less diverse than high profile reef, the Benthic Ecology Survey Report in Appendix C classifies several instances of ‘*Low profile reef with high density large epibiota*’ habitat.

The EIS states that “a non-destructive geophysical survey (BHC-M01) prior to construction will enable micro-siting and assist with the avoidance of sensitive benthic habitats including high-profile rocky reefs.” This survey and micro-siting should also consider avoiding *Low profile reef with high density large epibiota* habitat.

³ May et al, ‘Paint it black: Efficacy of increased wind turbine rotor blade visibility to reduce avian fatalities’, 2020, <https://onlinelibrary.wiley.com/doi/epdf/10.1002/ece3.6592?>

Adopting an Adaptive Management Framework

As Australia has yet to build an offshore wind farm, there are a number of uncertainties about technology, construction methods, species response and mitigation strategies that should be carefully considered throughout the construction and operation of offshore wind projects. The Australian government and the offshore wind industry have an opportunity to adopt an Adaptive Management approach based on rigorous collection of baseline environmental data of the distribution, migration and behaviour of marine mammals, turtles, and bird species.

The EIS notes that post-construction monitoring will be conducted during monitoring activities to help produce a database of marine mammal and turtles use of the area and response to the offshore wind farm. This is welcome but needs to be considered within an active scientific study rather than standalone monitoring.

This approach could actively contribute to the early body of knowledge about offshore wind construction methods, species response and mitigation strategies, and could inform future projects. This is important as many of the mitigation strategies have been used in the Southern Hemisphere's offshore wind industry but are yet to be tested in the Southern Hemisphere. We also have limited knowledge about how avoidance behaviours triggered by industrial activity and marine noise affect species when they move beyond the construction area. Initiating long-term ongoing studies of marine mammals, turtles and bird species within the offshore wind area before, during and after construction would help inform future decisions about:

- Ongoing regulation, timing and choice of construction methods for individual offshore wind projects
- Future decisions for feasibility, construction and operation licenses
- Future offshore wind zone declarations
- Assessment of cumulative impacts of offshore wind and other human uses of the sea

The federal government is currently conducting a series of studies into offshore wind and the marine environment through DCCEE's [Renewable Environmental Research Initiative](#). These could potentially form the basis for a wider Adaptive Management Framework to minimise potential environmental impacts of the industry.

Addressing Cumulative Impacts

The Star of the South offshore wind proposal does not exist in a vacuum, and there are several other human uses of the sea that generate marine noise, ranging from recreational fishing, boating and whale watching tours to commercial fishing, shipping and offshore oil and gas exploration, extraction and decommissioning. As human use of the oceans increases and further offshore wind proposals enter the planning system it is vital to understand, manage and mitigate the cumulative impacts of these multiple uses.

The EIS notes a number of other projects proposed for the Bass Strait including exploration and construction of offshore wind projects and subsea cabling construction. Taking a precautionary approach, the timing and conditions on construction licenses should account for the potential for cumulative impacts from the construction of multiple offshore wind projects within the Bass Strait. The Star of the South proposal to reduce construction during known migration periods is an appropriate one that should also apply to other projects, informed by their data collection.