



29 May 2024

Offshore Renewables Team
Department of Climate Change, Energy, the Environment and Water
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Australia

By email: offshorerenewables@dcceew.gov.au

Attn: Offshore Renewables Team

To whom it may concern,

NATIONAL ENVIRONMENTAL LAW ASSOCIATION SUBMISSION ON THE PROPOSED OFFSHORE WIND AREA: INDIAN OCEAN OFF BUNBURY, WESTERN AUSTRALIA

We set out below, a submission on behalf of the National Environmental Law Association (**NELA**), regarding the Department of Climate Change, Energy, the Environment and Water's (**DCCEEW**) request for public feedback regarding the *Proposed Offshore Wind Area: Indian Ocean off Bunbury, Western Australia (Proposed Area)*. This submission has been prepared by the WA division of NELA and endorsed by the NELA National Board.

ABOUT NELA

NELA is a peak body for environmental lawyers in Australia. We are Australia's only independent, national, multidisciplinary, member-based association focused on environmental law and sustainability. NELA is managed by a national board that includes directors with expertise in international and domestic legal frameworks for renewable energy, biodiversity conservation, land use planning, ecological restoration, environmental and carbon markets, environmental regulation and regulatory theory, and natural resource management.

One of NELA's objectives is to provide a forum for, and otherwise assist in the discussion, consideration, and advancement of, environmental law among the legal profession and the wider community. As a body with particular expertise and interest in environmental laws, NELA and its members recognise the importance of clear, strong, transparent and ambitious laws for safeguarding Australian environments, including our offshore areas, while also contributing to a rapid, global transition to renewable energy.

We are grateful for the opportunity to make a submission on this proposal.

EXECUTIVE SUMMARY

- A. The development of offshore wind farms will assist Australia to reach its domestic net-zero targets.
- B. Acoustic impacts of wind farms may threaten biological communities residing in and around the Proposed Area. If an offshore wind farm is developed in the Proposed Area, mitigation and monitoring options must be employed to eliminate or reduce these impacts to an ecologically acceptable level (determined by rigorous scientific measures).
- C. NELA is generally supportive of the declaration of the Proposed Area if these ecological impacts are adequately addressed.

NELA'S COMMENTS

General comments

- 1 NELA is generally supportive of advancing the development of offshore wind in Australia and harnessing the offshore wind resources that are abundantly available in the *Proposed Offshore Wind Area: Indian Ocean off Bunbury, Western Australia*. In particular, NELA supports the contribution that an offshore wind farm in the Proposed Area could make to Australia meeting its net-zero commitments as legislated in the *Climate Change Act 2022* (Cth).
- 2 Wind farms accounted for 35.6% of renewable energy generated in Australia in 2022, and for 12.8% of the Country's total electricity generation that year.¹ Whilst, all Australian wind farms have been land-based to date, offshore wind farms present a key opportunity for future growth in Australia, and could help support Australia's transition to renewable energy.² If Australia is to meet its statutory net-zero commitments, a rapid expansion of its wind power generation capacity is imperative, including both onshore and offshore.
- 3 The benefits of offshore wind projects, when compared to onshore wind and solar projects, include that the average wind speed for offshore regions is higher and more consistent than wind speeds over land. Unlike solar farms, offshore wind farms are not restricted to operating only during daylight hours. Moreover, offshore wind farms can use larger turbines, and may have less of an impact on noise and visual amenity – at least on human activities and communities, and land-based ecosystems.³
- 4 NELA therefore generally supports the declaration of the Proposed Area, on the basis that it creates an opportunity to build capacity for offshore wind in Australia, and renewable energy more generally; while supporting an increase in the contribution of renewable energy to the overall mix of electricity generation in Australia as we push towards net-zero.
- 5 NELA's support is subject to ensuring that the development of offshore wind in the Proposed Area is pursued in a manner which protects Australian flora and fauna, including state and Commonwealth listed threatened species and communities, marine species and migratory species. NELA submits that activities in the Proposed Area must also ensure the adequate management of any other environmental issues which arise.

Environmental impacts

- 6 An area search on the national 'Atlas of Living Australia' database shows that migratory and listed biota that have been sighted in the Proposed Area and surrounds include: albatross, petrels, humpback whales, sperm whales, scalloped hammerhead, southern bluefin tuna,

¹ See [Clean-Energy-Australia-Report-2023.pdf \(cleanenergycouncil.org.au\)](https://www.cleanenergycouncil.org.au/Clean-Energy-Australia-Report-2023.pdf).

² Cowin E, Wang C, Walsh SDC. Assessing Predictions of Australian Offshore Wind Energy Resources from Reanalysis Datasets. *Energies*. 2023; 16(8):3404. <https://doi.org/10.3390/en16083404>.

³ See Cowin E, Wang C, Walsh SDC. Assessing Predictions of Australian Offshore Wind Energy Resources from Reanalysis Datasets. *Energies*. 2023; 16(8):3404. <https://doi.org/10.3390/en16083404>.

oceanic whitetip shark, terns, and leatherback turtles.⁴ Extensive and systematic biological surveys prior to any development of the Proposed Area must ensure that site-appropriate mitigation measures can be developed and implemented. Ensuring such measures will help to protect resident and migratory biota, during both the development and operation of any offshore wind farm that is constructed in the Proposed Area.

- 7 NELA highlights the risk that anthropogenic noise (anthrophony) generated through the life cycle of a wind turbine project in the Proposed Area could cause ecological impacts to species within, nearby and passing through the Proposed Area. For example:
- (a) Construction noise such as pile driving has demonstrably negative effects on the behaviour and occurrence of cetacean species, with effects having been recorded over 17km away from a similar construction site.⁵
 - (b) Once an offshore wind farm is operational, wind turbine noise has been found to negatively affect crab metamorphosis. While this effect may depend on the frequency of sound generated, it is not dependent on intensity (that is, crabs may be affected regardless of any limitations imposed on the number or size of the turbines).⁶
 - (c) There are concerns that anthropogenic noise – including from wind turbines – may affect fish behaviour by masking important sounds in their acoustic environment, affecting predator-prey interactions, and deterring them from the impacted area.⁷
 - (d) By altering prey species distributions and benthic habitats, wake and turbulence from a windfarm in the Taiwan Strait were suggested to have contributed to ‘alarming decline’ in a resident dolphin community.⁸
- 8 The nature and extent of acoustic impacts vary between species, and changes in substrate composition, bathymetry, and water chemistry. As such, NELA submits that site-specific acoustic modelling, as well as long-term species monitoring, will be required for any development in the Proposed Area. Monitoring will support the assessment of the extent of acoustic pressure being exerted on the environment, as well as any impacts on resident species in the Proposed Area. Such monitoring and modelling will be essential to inform any necessary adjustments to wind farm operating conditions. Perhaps just as importantly, evidence that is gathered may help to bolster the social licence of a future wind farm operator and create an opportunity to demonstrate success, if the wind farm can be developed and operated in way that has minimal environmental impacts.
- 9 This project is an exciting opportunity for Western Australia to lead the way in filling knowledge gaps in the acoustic impacts of wind farms on marine and coastal environments. By implementing science-based monitoring and mitigation measures, this project has the potential to demonstrate that the net-zero transition can occur with minimal impacts to the environment. We urge the Australian Government to ensure that, in designating the Proposed Area as a priority area for windfarm development, it makes clear its commitment to long term

⁴ CSIRO, *Atlas of Living Australia*, occurrence download. Search limited to 2014-24. Accessed 25 April 2024.

⁵ Brandt, MJ et al, ‘Responses of Harbour Porpoises to Pile Driving at the Horns Rev II Offshore Wind Farm in the Danish North Sea’ (2011) 421 *Marine Ecology Progress Series* 205 p 211.

⁶ Pine, Matthew K, Andrew G Jeffs and Craig A Radford, ‘Turbine Sound May Influence the Metamorphosis Behaviour of Estuarine Crab Megalopae’, ed Senjie Lin (2012) 7(12) *PLoS ONE* p 1.

⁷ Popper, Arthur N and Anthony D Hawkins, ‘An Overview of Fish Bioacoustics and the Impacts of Anthropogenic Sounds on Fishes’ (2019) 94(5) *Journal of fish biology* 692.

<https://onlinelibrary.wiley.com/doi/epdf/10.1111/jfb.13948> p 696.

⁸ Huang, Shiang-Lin, ‘Unstated Impacts of the Green Energy Industry on the Habitat of a Coastal Delphinid: Turbid-Turbulent Wakes Induced by Offshore Wind Turbine Foundations’ (2022) 32(11) *Aquatic conservation* 1787 <https://onlinelibrary.wiley.com/doi/epdf/10.1002/aqc.3888>.

protection of Australia's marine and coastal environments, alongside its commitment to a rapid transition to renewable energy.

- 10 There are certain to be environmental impacts that flow from Australia's pursuit of offshore wind energy, as the Country seeks to rapidly transition to net-zero. NELA accepts that some trade-offs are inevitable, with one extremely important proviso. The Australian Government must take this opportunity to clearly and explicitly articulate limits on any unavoidable trade-offs between renewable energy and environmental impacts. By clearly articulating in advance the limits on any environmental impacts and the strong actions that it proposes to take – which ought to include more than simply financial penalties – the Australian Government will be equipped to intervene decisively but also in a way that is predictable and fair to all stakeholders.

If you have any questions about the above, please do not hesitate to contact us at president@nela.org.au

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