

The winds of change



The purpose of this paper is to create discussion around how proper marine planning early in the process of establishing the offshore wind energy industry can protect marine biodiversity values, and save time costs, problems and potential rejections later on.

We seek feedback from all interested parties on this paper to inform future iterations and address any gaps.

The winds of change: using marine spatial planning to create a responsible, nature-positive offshore wind industry

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Author: Shannon Hurley

Editor: Jessie Borrelle

Design: Paul Clifton

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ABN 34 217 717 593

Wurundjeri Country, Level 3, 60 Leicester St, Carlton VIC 3053
(03) 9341 6500 vnpa@vnpa.org.au vnpa.org.au

President: David Nugent

Executive Director: Matt Ruchel



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The Victorian National Parks Association is an effective and influential nature conservation organisation.

We've led the creation, oversight and defence of Victoria's natural estate for over 70 years.

VNPA advocates for evidence-based policy to safeguard wildlife, habitat and protected areas. We inspire connections with nature through citizen science, activities, community action and education.

We are an independent, non-profit, non-government, and membership-based charity. We're an incorporated association with membership open to all like-minded people.

Our Vision: Victoria is a place with a diverse and healthy natural environment protected, respected and enjoyed by all.

VNPA acknowledges the many First Peoples of the area now known as Victoria, honours their continuing connection to, and caring for, Country, and supports Traditional Owner joint-management of parks and public land and waters for conservation of natural and cultural heritage. Our office is located on traditional land of the Wurundjeri people of the Kulin Nation. We offer our respect to Elders past, present and future.

Contents

Executive summary **3**

Recommendations **5**

For state and federal governments

Opportunities for developers

1. Introduction and context **7**

Large-scale offshore wind development is proposed and imminent

From generating power at sea to heating homes on land – infrastructure requirements to set up the offshore wind world

2. The marine environment: values, risks, impacts and opportunities **13**

Values of Victoria's marine environment

Current environmental assessment processes not fit for marine planning purposes

Resolving inconsistencies across state, national and international plans, policy and agreements

Protecting marine wildlife and habitats is part of the climate change solution

3. The case for a marine spatial planning framework **20**

The ocean deserves planning equity too – a comparison with land

What is marine spatial planning

Benefits of marine spatial planning

The mechanism to trigger a marine spatial plan

Preliminary marine planning within offshore wind energy zones: identifying no-go areas

4. Good examples of planning elsewhere **25**

New York State

Canary Islands – Marine Good Environmental Status

Vietnam

United Kingdom case study

5. Discussion and recommendations **28**

Endnotes **30**

Acronyms **31**

Executive summary

Offshore wind is a powerful energy source. If properly managed, it can help Victoria lead Australia's response to our rapidly warming climate and meet ambitious net-zero targets by 2045.

A fast transition from polluting to clean energy sources is necessary to avoid the extreme impacts of climate disruption. The dramatic increase in plans for large-scale developments across Australia's, and in particular Victoria's, coastline shows we're already on our way. But as industry surges ahead, the state and federal governments have yet to coordinate a clear and holistic approach for how this sector should be planned for and managed in our marine environment.

Nature's aquatic ecosystems – our marine wildlife and habitats – are an integral part of the climate solution. If left unprotected and overlooked in the rapid energy transition, we risk creating as many problems as we solve. Coordinated, strategic early planning that considers climate and nature goals by locating offshore wind developments in the right places is key to minimising risk and avoiding impacts on communities and nature later on.

Gaining and maintaining social license for renewable energy projects is critical if we are to achieve climate targets and protect our unique natural environment. The Australian Government recognises that offshore renewable energy projects should reflect its own Nature Positive Plan by avoiding and minimising environmental impacts. Without understanding the values within our seas and shores it is difficult to plan to avoid these impacts. Early marine spatial and/or preliminary planning is needed to coordinate infrastructure and work with the values and uses of marine ecosystems. This includes areas marked for port development such as Western Port Bay, the offshore wind energy zones, and adjacent areas where infrastructure would connect to the grid.

When it comes to establishing an entire new energy industry across Victoria's coastline, current environmental assessment processes are flawed, costly and time intensive. Limited in scope to individual projects, they operate in isolation to any other project and do not measure the impacts on the marine environment well enough, little alone combined impacts of multiple projects. They also leave the door open for rejections which adds further delays to approvals, such as the Port of Hastings Offshore Wind Terminal which was rejected due to

unacceptable impacts on a Ramsar wetland. This could have been avoided if there was upfront marine planning.

It is crucial there is another step for responsibly planning for our marine environment and to give clarity and certainty for industry, as well as the other uses of the marine environment. Without proper planning, the risk to our marine environment is too great.

An environmentally responsible offshore renewables sector requires marine spatial planning (MSP), a tool to organise and coordinate uses of marine space. It should include the identification of areas for offshore wind development, and areas off limits to avoid significant marine, cultural and social values. Our terrestrial landscapes require adequate planning – a mindset that should also apply to the marine world.

The framework and guidelines for how to undertake MSP have already been developed by the Victorian Government under the *Marine and Coastal Act 2018*. There is a commitment for a marine spatial plan to be developed between 2023-2027 under the *Marine and Coastal Strategy 2022*, which still has yet to be acted on.

As the first and leading developers of offshore renewable energy, there is an expectation for both the Victorian and Commonwealth governments to uphold the standards that industry should follow.

Better yet, governments should be setting the precedent for a nature positive offshore wind industry using best practice marine protection for the rest of Australia to follow.

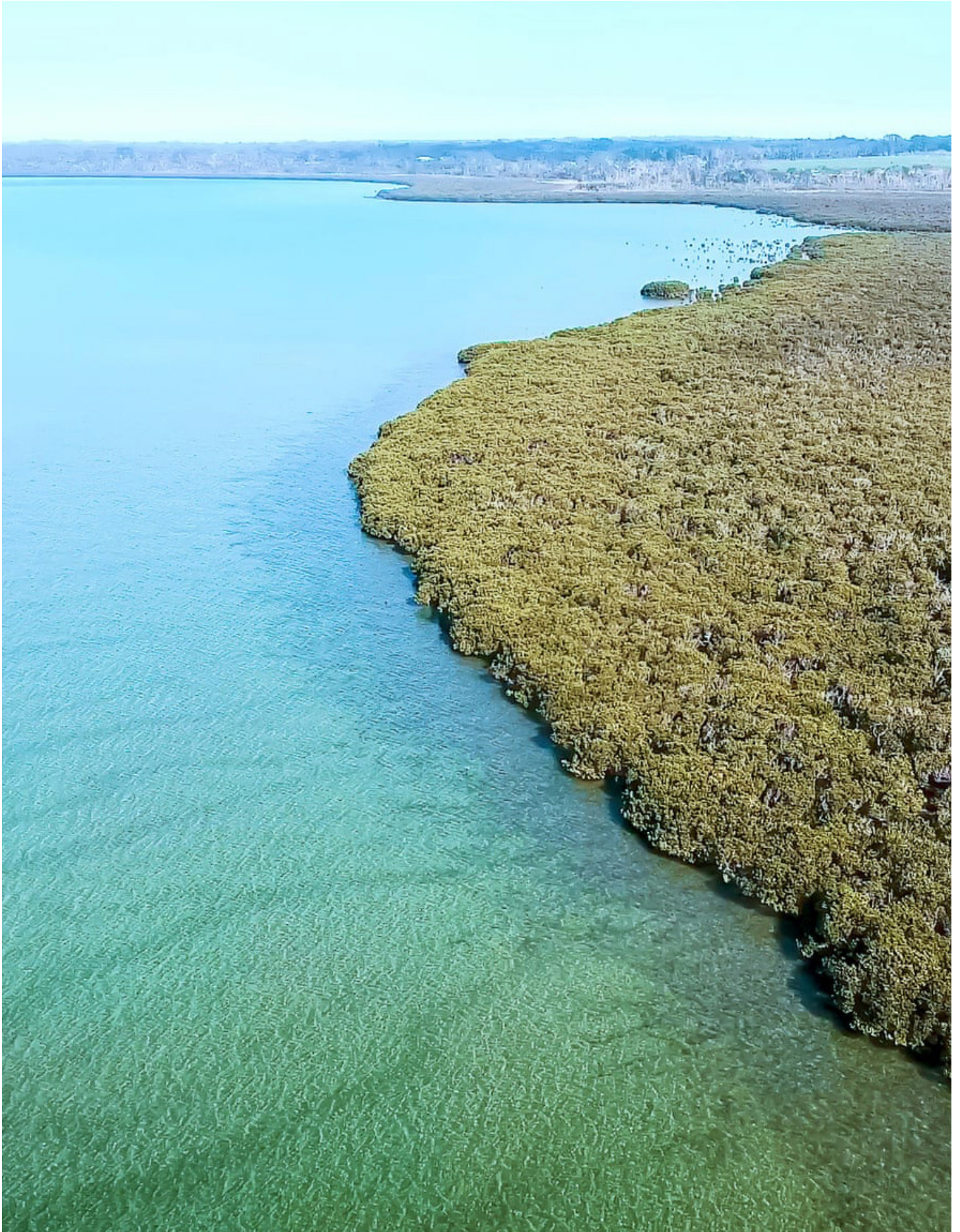
Convincing local communities of the benefits of offshore wind is important if the industry is to avoid resistance and ensure a smooth, rapid transition from fossil fuels. Furthermore, MSP serves to de-risk investment, which in turn boosts investor confidence, cuts development timeframes and minimises problems and potential later.

Lessons learnt from the marine spatial planning that happens now, can be used as a pilot to inform other areas across Australia into the future.

This report is a call for both the Victorian and Commonwealth governments to get ahead of the planning process during establishment of a new offshore wind sector, so our essential natural environment is not sacrificed for the energy transition. We can do both, and this report shows how.



Mangroves at Crib Point, Western Port Bay, Bunurong Country. Celeste de Vis



Ramsar wetlands at Crib Point, Western Port Bay, Bunurong Country. *Stacey Chillcott*

Recommendations

For state and federal governments

1. **Pilot marine spatial planning in Western Port Bay – Victoria's Renewable Energy Terminal at the Port of Hastings.** For the state government to commit to implementing marine spatial planning as part of the Western Port Bay Framework urgently, to help protect this internationally important wetland through the expansion of the proposed terminal. The planning process could take into consideration the influence of the offshore wind areas.

Responsibility: Victorian Government with Federal Government collaboration.

2. **Integrate preliminary marine planning** as a minimum standard for the Gippsland and Southern Ocean Offshore Wind Energy Zones (and other declared zones around Australia). Under the guidance of Victoria's Marine Spatial Planning Guidelines, identify sites for energy expansion in areas of low biodiversity sensitivity:

- Identify no-go areas off limits to infrastructure across federal and state waters, to avoid and protect high value marine biodiversity areas. Similarly, identify priority development areas in lower biodiversity sensitive areas.
- Undertake biodiversity sensitivity mapping based on the most recent science and collaborate with key marine science experts.
- Recognise cultural and socioeconomic values and uses.
- Grant feasibility licenses to priority developers in areas of lower biodiversity sensitivity.

Responsibility: Victorian Department of Energy, Environment and Climate Action (DEECA), and the federal Department of Climate Change, Energy, the Environment and Water (DCCEEW).

3. **Develop a set of criteria** applicable to all renewable energy zones that excludes development and infrastructure within high value areas, including marine national parks and sanctuaries, national parks, important wildlife aggregation areas and areas of cultural significance.

Responsibility: Victorian Government (DEECA), Federal Government (DCCEEW and National Offshore Petroleum Titles Administrator (NOPTA)).

4. **For the protection of environmental values to form a core part of the decision-making criteria** on the siting of offshore wind zones and licenses for developers at the earliest stages of planning. In order of priority the hierarchy of avoidance, mitigation, minimisation and compensation should be used. Marine experts across science and the conservation sector should be consulted with early in the process. Where there is minimal data to inform decision making, the precautionary principle should be exercised.

Responsibility: Victorian Government (DEECA), Federal Government (DCCEEW and NOPTA).

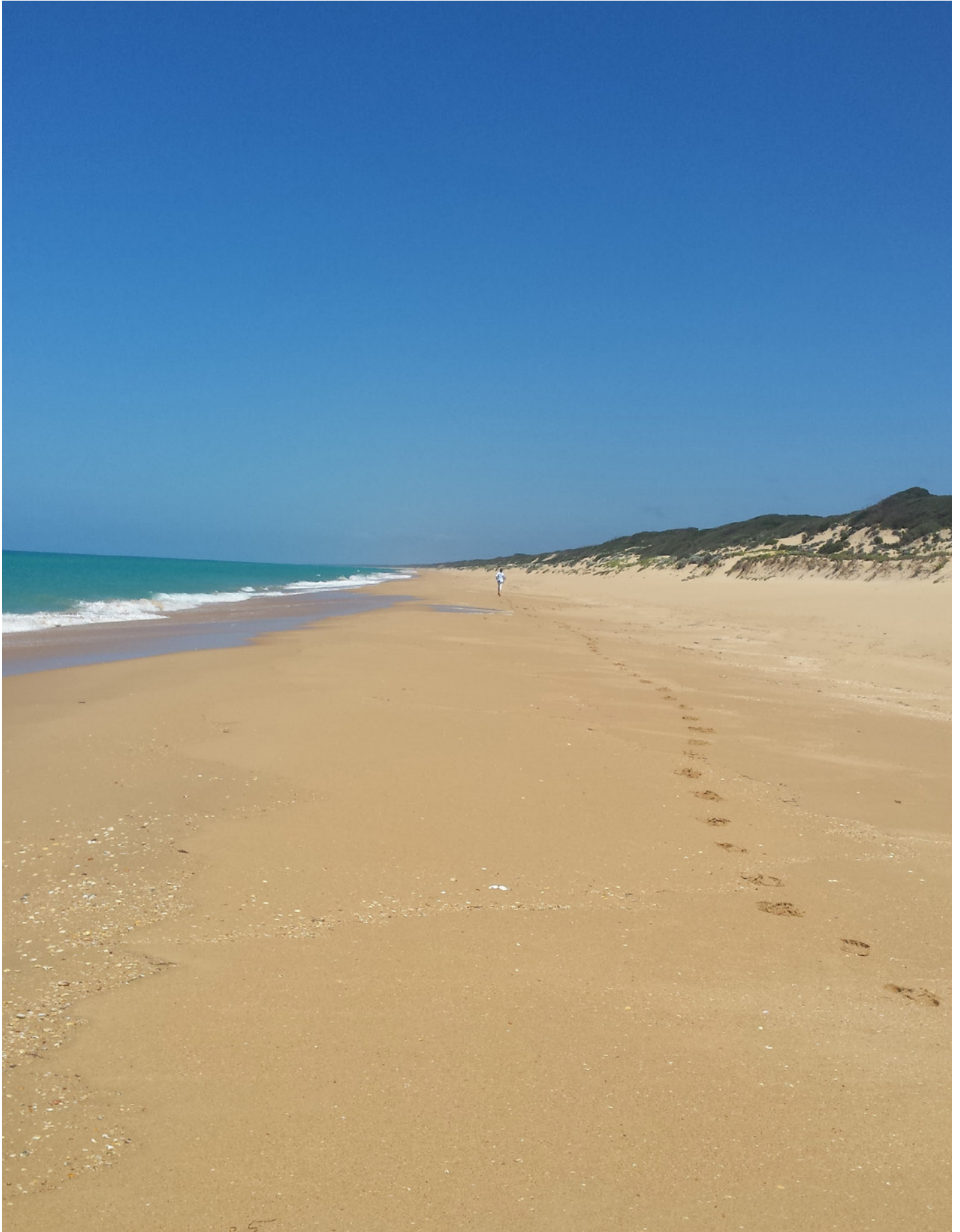
For all recommendations: Understand, acknowledge and act upon the rights and aspirations of Traditional Owner groups for Country.

5. **A marine spatial planning team with adequate marine planning expertise** to be hosted within DEECA's marine planning or offshore wind energy departments, to help develop Victoria's first marine spatial plan.
Responsibility: Victorian Government (DEECA) to lead and the Federal Government (DCCEEW) to partner.
6. **Marine spatial planning to be included within the scope of the Australian Government's Nature Positive Plan** for reform of national environmental laws, and integrated into regional plans when undertaken in future.
Responsibility: Federal Government (DCCEEW).
7. **A dedicated body** to advise on impacts of the energy transition on nature (including marine issues).
Responsibility: Victorian Government.
8. **Marine research** contributing to baseline knowledge and impacts on marine biodiversity from offshore wind development to be commissioned by both government and industry. Data to be made publicly available for planning purposes.
9. **Detailed environmental, social and cultural values** to inform Federal Government boundaries of wind energy zones, with provision of reports outlining the decision-making process for zone declaration.
Responsibility: Federal Government (DCCEEW) with Victorian Government input.
10. **General.** Research adding to baseline knowledge on the impacts on marine biodiversity by both government and industry, and for the data to be shared and made publicly available for planning purposes.

Opportunities for developers

Good ecological planning can minimise risk early in the process and create certainty for developers. There is an opportunity for developers to:

1. Integrate biodiversity, social and environmental assessments early into planning and investment decisions.
2. Apply best practice environmental impact assessments to avoid and minimise impacts, and restore net-positive outcomes for nature.
3. Advocate to governments for the use of marine spatial planning.



The subtidal soft sediment habitat in the Ninety Mile Beach Marine National Park, Gunaikurnai Country. *Nicole Mertens*

1. Introduction and context

Vision statement

Marine spatial planning guides the location of offshore wind energy projects, complemented by comprehensive marine assessments.

Together they deliver security to marine biodiversity and the offshore wind industry.

Key points:

- In response to climate change, large-scale offshore wind development is proposed and imminent in Victoria's marine waters.
- To limit global warming to 1.5°C above pre-industrial levels and avoid the worst risks of climate change, renewable energy needs to account for more than 90 per cent of electricity generation by 2050.
- Proper planning is how responsible societies integrate desired outcomes, in this case preventing a climate disaster whilst protecting the marine environment.
- Whilst we know much less about marine environments than those on land, we do know they are complex, multi-dimensional and integrated systems that underpin life.
- Environmental, cultural and social values should influence the location of offshore wind project siting.
- We outline specific and realistic steps for how state and federal governments and industry can support the protection of marine wildlife like whales and seabirds and other existing marine uses, while delivering greater certainty and guidance to developers.
- Preliminary identification of no-go areas of key environmental and cultural importance could be a precursor to more comprehensive marine spatial planning.
- This is the call for comprehensive marine spatial planning as a precursor or in parallel to offshore wind development.

Large-scale offshore wind development is proposed and imminent

The Victorian Government has ambitious targets to transition our state to renewable energy sources and achieve at least 2 GW of offshore generation capacity by 2032, 4 GW by 2035 and 9 GW by 2040.

The Australian Government has a plan to make Australia the renewable energy superpower with a commitment to net-zero emissions by 2050.

The commitments are welcome, but a lack of commitment or clear process (from both levels of government) to protect Australia's

prime and unique marine biodiversity through adequate planning is concerning.

Victoria's coastal and marine environments are highly valued. As marine energy projects have the potential to affect their natural and cultural heritage and economic values connected with them,¹ environmental factors should be the preliminary basis for deciding the location of offshore wind industry projects.

Good early planning for our marine environment (referred to throughout this report as marine spatial planning or MSP) means we can avoid large scale impacts across Victoria's marine environment and coastline.

A range of state, national and international policy and guidelines refer to MSP to guide the establishment of this sector, to avoid environmental harm and coordinate other water uses and activities.

MSP can help nature help us meet climate and nature positive goals. When complemented with environmental assessment processes, it can help identify important marine, cultural and social values and deliver security to the industry.

When used in isolation from other marine planning tools, environmental assessment processes are only suitable for reviewing impacts on individual projects. They are not fit for purpose to guide the placement of an entire industry.

The process for protecting nature needs to feature more prominently in discussions when it comes to Australia and Victoria leading the energy transition. Nature needs to be safeguarded and not destroyed to meet pollution reduction and climate goals.

In this report we refer to a discussion paper called the Marine Energy Policy Discussion Paper, developed in 2014 by the then Victorian Government, but never publicly released.

It is a prime source of information to support the need for proper upfront planning of our blue spaces and supports many of the notions made in this report. While there have been some updates to key legislation and policy referred to in the paper, it remains highly relevant to this discussion.

If the industry is to succeed in becoming a responsible custodian of the ocean the call for clear guidelines for project approval and sitings underpinned by biodiversity conservation, and sharing the ocean space with other users, must be heard.² Developers recognise that thorough environmental assessment and marine spatial planning is essential to drive fair and sustainable



Bar-tailed Godwit (*Limosa lapponica*), Corner Inlet Marine and Coastal Park, Gunaikurnai Country. Ronigreer/iNaturalist

Green' energy technology is often perceived as environmentally benign, leaving the cumulative negative impacts on marine and coastal ecosystems vastly unknown and underestimated. Renewable energy projects attempting to do good for people and the planet by meeting climate targets cannot afford to do so by sacrificing the living web of nature that we all depend on.

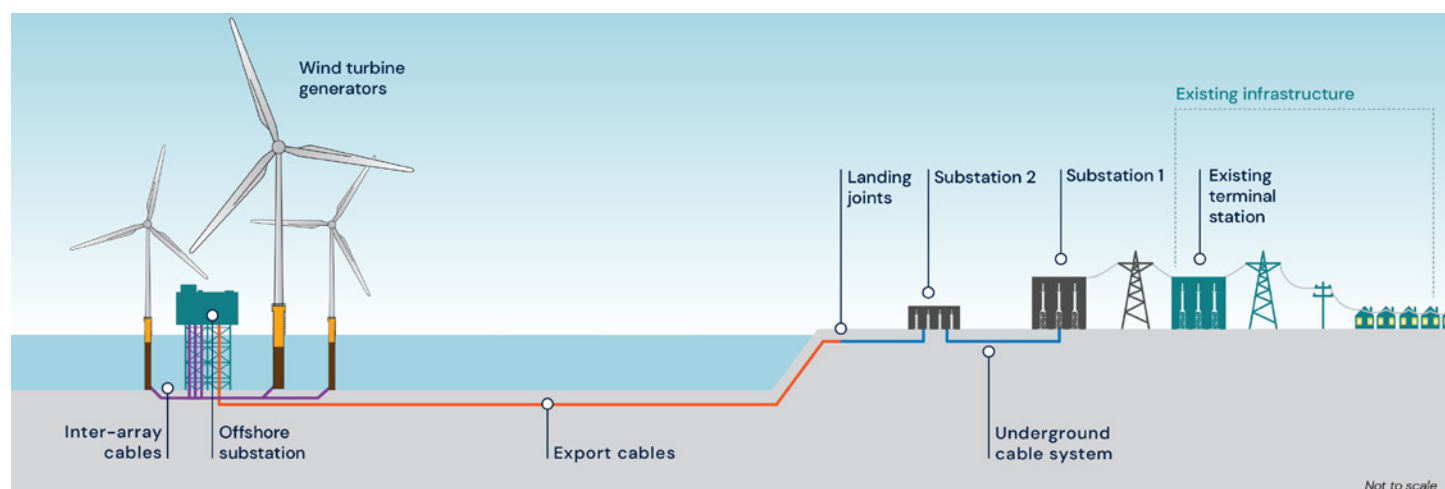


Fig 1: An example representation of the infrastructure requirements across land and sea for offshore wind energy projects.

Source: *The Star of the South* (used with permission)

integration into traditional marine uses, inform site selection, mitigate risks and lower government regulatory costs.^{3,4}

Clean Energy Investors are also calling for broad and early consultation to flag and mitigate issues early and avoid higher costs later. The Clean Energy Investor Group and the Renewable Energy Alliance back the need for biodiversity and conservation experts to be consulted with as an official stakeholder. This would help to address cumulative landscape impacts for the offshore and onshore transmission network, complimenting the work of governments around biodiversity mapping.⁵ Importantly, MSP can serve as this de-risking process which boosts investor confidence, cuts development timeframes and should improve not only consultation, but collaboration with ocean stakeholders.

This report delves into how both can be achieved. A nature positive industry that protects our living natural systems during the energy transition is within reach.

The report summarises the infrastructure requirements of the offshore wind sector, current planning processes, values and impacts

on marine biodiversity, and the need for proper marine planning and tools that can be used to deliver it.

While the principles in this report are applicable to any offshore industry, including oil and gas exploration and extraction, offshore wind is the focus given the anticipated growth trajectory expected for the offshore wind industry. While it strongly focusses on the Victorian and federal governments, it is hoped it will benefit other states too.

From generating power at sea to heating homes on land – infrastructure requirements to set up the offshore wind world

Offshore wind generation

Common designs indicate that wind turbines will be mounted on towers in the seabed and connected to other associated offshore assets like buried or subsea cables and substations before transforming and transporting to the grid.

Fig 2: An example image of renewable energy infrastructure delegated into Victorian and Commonwealth crown land.

Source: *The Discussion Paper*

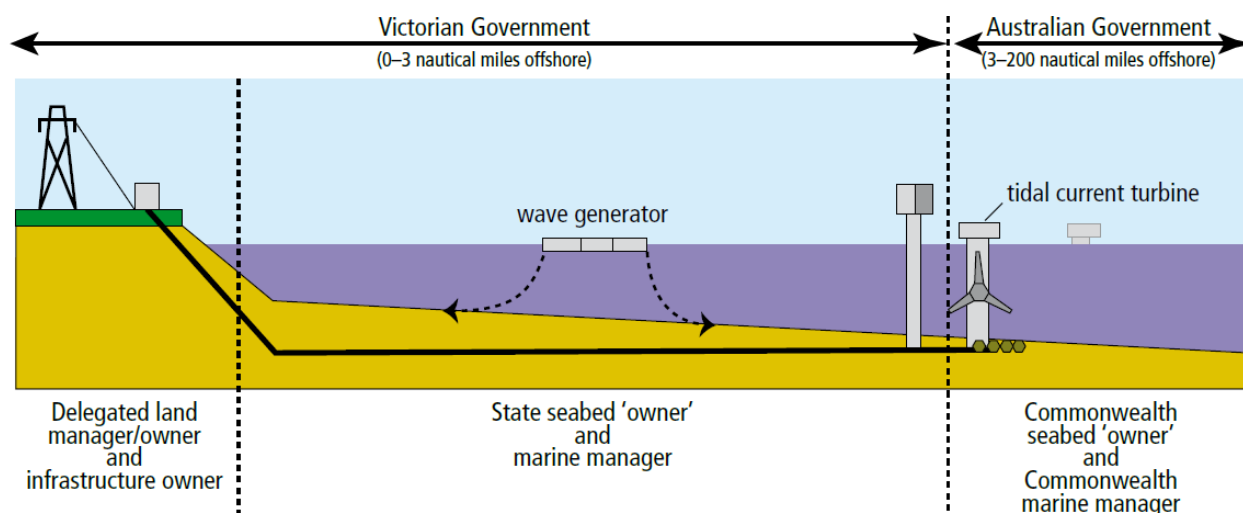




Fig 3: A simplistic approvals process as led by the federal government. Source: *Offshore Renewables Environmental Approvals (2022)*.⁶

Wind turbines and substations are proposed to be in federal waters (>5km offshore) and would traverse into Victorian waters where they would connect to the substations on land to then feed into the National Electricity Market.

Transmission network

Essential to transfer energy generated by the wind farm offshore to the existing electricity transmission network. The need to expand the current network in Victoria, with two locations onshore at Portland and Gippsland proposed as connection points, has been identified. VicGrid, a body within DEECA is tasked with its management, is in the early consultation phase of developing the new transmission route options. It is estimated options will be assessed, in late 2023, with preferred options decided in early 2024.

Port support

The Port of Hastings (PoH) was chosen by the Victorian Government as Victoria's assembly port to bring in equipment to build offshore wind farms. The proposal for the new port facility was rejected by the

Federal Government under the EPBC Act and deemed to have unacceptable impacts on this Ramsar listed wetland due to the dredging, land reclamation among other impacts. It is uncertain whether the state government will rework their existing proposal or seek another location.

Legislative framework

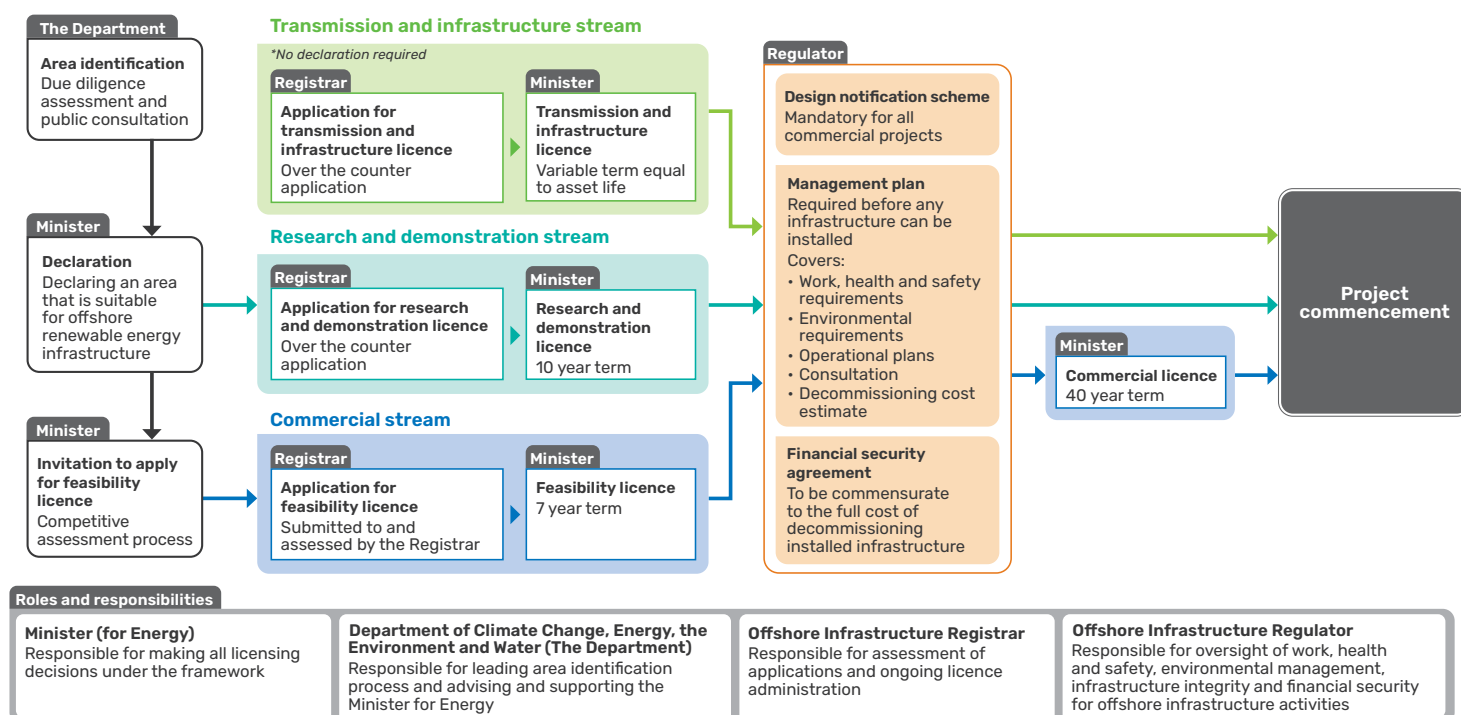
The Federal Government is responsible for the over-arching framework that enables industry to decide how and where infrastructure for renewable energy generation or transmission can operate within federal water (>5km offshore).

The Federal Department of Climate Change, Energy, the Environment and Water (DCCEEW) under the *Offshore Electricity Infrastructure Act 2021* is responsible for supporting the Minister for Energy in area identification and the declaration process. They also enable the construction, operation and decommissioning of offshore electricity infrastructure.

The first offshore wind energy zone in Victoria is the Gippsland Offshore Wind Energy Zone, declared in December 2022. The zone's inner

Fig 4: A comprehensive process of the offshore electricity infrastructure framework regulatory process map. Source: *Offshore Infrastructure Regulator*

Offshore Electricity Infrastructure Framework



boundary begins 10km offshore seawards (refer to Fig. 5). The Southern Ocean Zone between Warrnambool and Port McDonnell as of July 2023 has been proposed.

Developers may apply for a feasibility license once an area has been declared, allowing them to assess the feasibility of their project for 7 years. The Federal Government, specifically the Minister for Climate Change and Energy, through The National Offshore Petroleum Titles Administrator (NOPTA) is responsible for administering licensing. A preliminary decision on granting the feasibility licenses for Gippsland has been made, with between 6–12 projects under preliminary review subject to consultation with First Nations groups. Thirty-seven applications were received in total.

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) is the regulator of the offshore renewable industry, in charge of management plan assessments and post-approval compliance and enforcement, as well as providing advice to DCCEEW on environmental matters relating to the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

The environmental assessment process is separate from the license process and is undertaken through different legislation. The DCCEEW is responsible for supporting the Federal Minister for Environment to implement the national EPBC Act in relation to Matters of National Environmental Significance (MNES) (*roles and responsibilities outlined in Fig. 4*).

The Victorian Government's role is relevant to areas within state land and sea jurisdictions. It includes: the development of the transmission

infrastructure on land; port development for Victoria's Renewable Terminal; designing a state legislative framework for the establishment of the industry; funding support for particular developers, and the chain of approvals relevant to infrastructure within state jurisdiction. They have released a series of Implementation Statements that outline their plans progressing the transmission network, the port development and a regulatory framework.⁶

Before any construction can begin (and subject to a commercial license), a developer would need to assess the environmental impacts of their project. As with any development, any potential adverse effects in a regional or state context should be referred under the Victorian Environmental Effects Statement (EES) process, under the *Environment Effects Act 1978*.

If the project is likely to have significant impact on matters of national environmental significance, a separate referral is required under the EPBC Act.⁷

If assessment is required under both the Victorian and federal legislation, this usually means that assessment is delegated to the state or territory authorities to reduce duplication.⁸

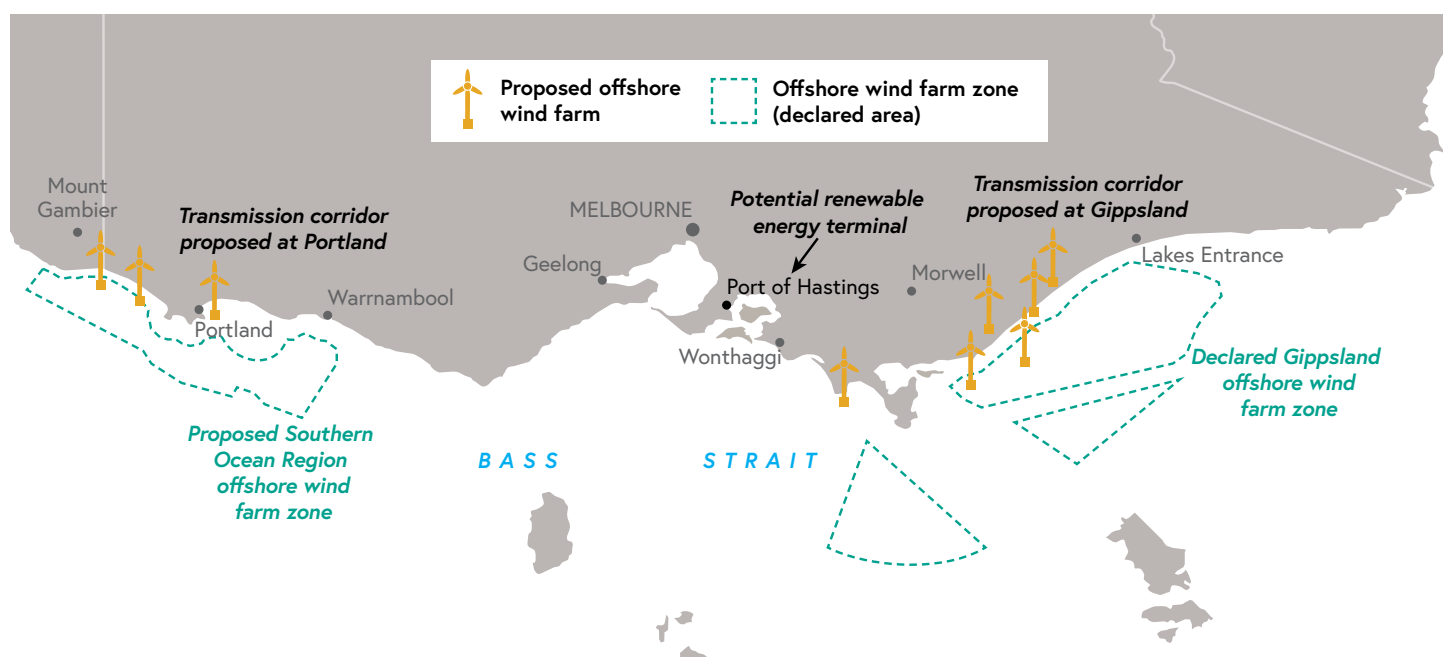
An independent review of the EPBC Act has shown it to be ineffective in its duties to protect nature, with current laws being reviewed and rewritten. It has been found that the EPBC Act 'does not enable the Commonwealth to effectively protect environmental matters that are important for the nation. It is not fit to address current or future environmental challenges.'

Fig 5: Victoria's first declared offshore energy zone: Gippsland Offshore Wind Energy Zone.
Source: DCCEEW



It also states that most decisions of the Commonwealth that determine environmental outcomes are made on a project-by-project basis only when impacts exceed a certain size, and only for those parts of the environment protected under the EPBC Act. This means that cumulative impacts on the environment are not systematically considered. Rather than an integrated system of environmental management that ensure cumulative impacts are well managed, pressure to manage impacts is placed on individual projects.

Planning, funding and regulatory decisions are not well integrated or clearly directed towards achieving long-term environmental sustainability. Given the state of decline of Australia's environment,



restoration to improve the environment is required to make it easier to accommodate future development in a sustainable way.⁹

It is evident that the federal environmental assessment processes are not adequate to protect a single project, let alone to establish an entire new offshore energy industry.

Environmental approvals under state and federal legislation are not and should not replace any type of spatial planning in the marine and coastal environment.

This raises questions around the quality of assessment that will be used for the offshore wind industry and reiterates the need for effective marine spatial planning to complement isolated and outdated processes.

NOPSEMA, the Commonwealth's oil and gas regulator, has taken on the regulatory role of offshore wind development and the registrar for the granting of feasibility licenses to developers to begin their exploratory work. It is unclear how decision-making (merit criteria) will be weighted towards environmentally sensitive areas for deciding on wind farm locations, or further along in the construction phase.

Marine wildlife does not observe boundaries drawn on a map. It is critical both levels of government collaborate to streamline regulation and legislation where environmental assessment is at the core. Energy and environment portfolios must come together effectively, the onus should not be on industry to measure its own cumulative impacts across multiple projects.

Governments' central role in proper marine planning for our blue spaces has been missing in the public debate. With all parties racing

to meet ambitious emissions targets, nature is getting left behind, despite the fact its protection is a part of the climate solution.

Current state of play

Gippsland and the Hunter Valley are among the first declared areas for offshore wind development in Australia, and feasibility licenses have been opened for developers to apply within a defined geographic area.

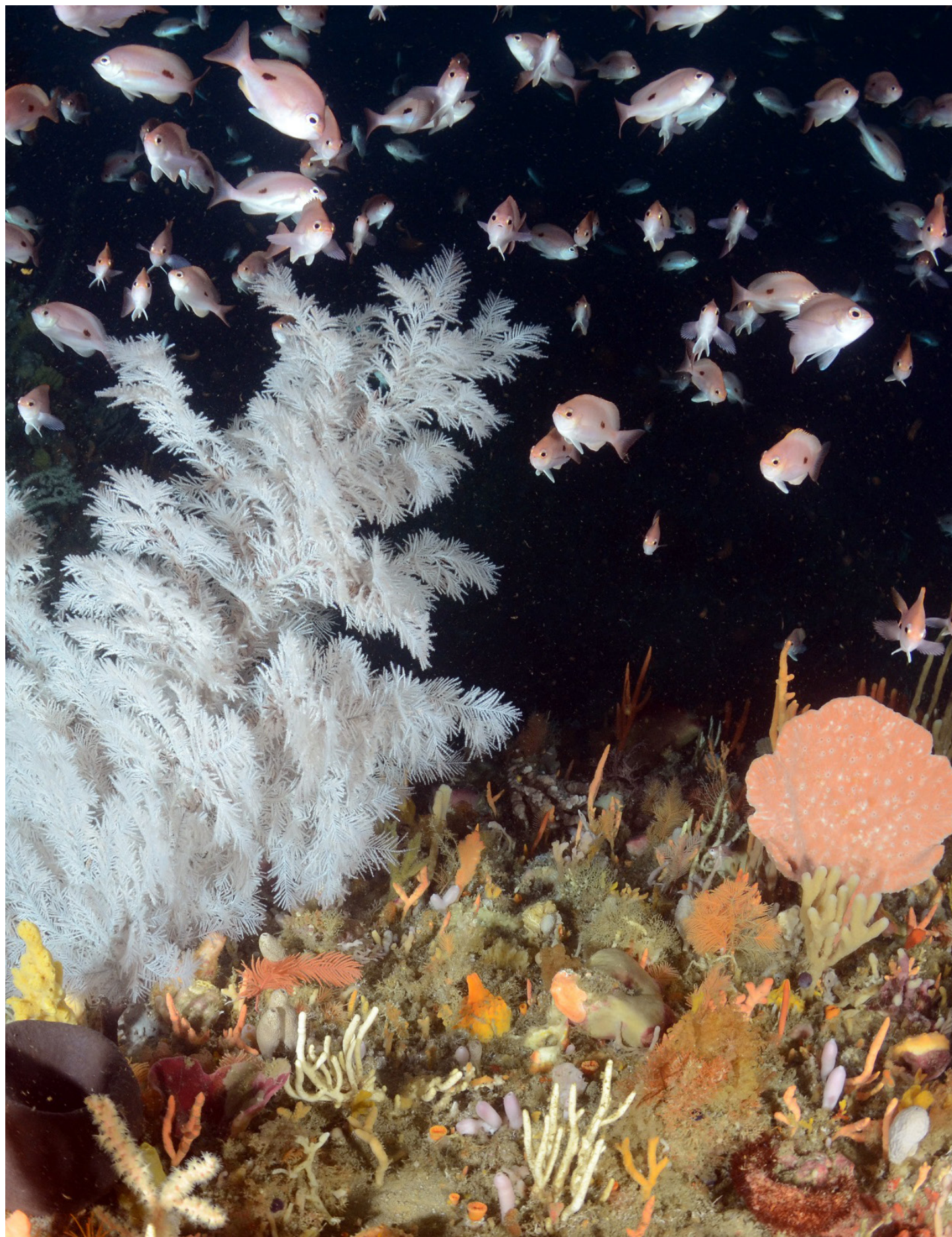
At the time of publishing, many developers have submitted requests to the Federal Government for a feasibility license for Gippsland. It is uncertain how many developers will be granted them, but it is expected they will be announced early 2024.

In July 2023, the Federal Government declared additional zones. In Victoria that is the Southern Ocean Offshore Wind Region, off Portland for which a period of public comment was open until the end of August 2023. Since then, the Illawarra Coast (New South Wales) and the Bass Strait region off northern Tasmania have also been proposed.

The Victorian Government has set their sights on developing the transmission network which will connect the offshore infrastructure off Victoria to the grid, proposed at two sites on the coast – Portland and Gippsland. State-wide reforms to plan these future major transmission links and Victoria's Renewable Energy Zones, known as the Victorian Transmission Investment Framework (VTIF), is currently underway. The first tranche of legislation is expected to be introduced to the Victorian Parliament in early 2024 and a Strategic Land Use assessment is under way to determine 'renewable energy priority areas' on land.

Fig 6: Proposed wind farm locations off Victoria's coastline (source Renew Economy). It is unclear how many there are, along with declared and proposed offshore wind farm zones and transmission route infrastructure. Source: VNPA

“We don't need to know everything before we start to plan. Our knowledge is good enough to begin a preliminary process to remove areas of contention and build on our learnings over time.”



An example of marine life found in deep places in the South-east Marine Park Network in Commonwealth waters. *James Parkinson*

2. The marine environment: values, risks, impacts and opportunities

Values of Victoria's marine environment

Our marine and coastal environments are highly valued ecosystems, buffering the impacts of climate change, regulating the oxygen on the planet, and providing food and livelihoods for many.

When compared to similar marine habitats around the world, Victoria's south-eastern seas and shores stand out as unusually abundant – 80 per cent of the marine life found in Victoria's southern waters occurs nowhere else on earth. They are home to more unique species than the globally celebrated Great Barrier Reef.

The world's greatest diversity of red and brown seaweeds, sea mosses, crabs, shrimps and sea squirts exist here.¹⁰

One reason for this superabundance is the fact that Victorian waters lie at the union of the Southern and Pacific oceans, creating an invisible outer boundary beyond which many marine creatures cannot pass. Ocean currents, water temperatures and exposure all play a role in shaping the types of plants and animals that can be found in any one region.

For example, marine life found in the waters west of Cape Otway is influenced by the cold Southern Ocean, as well as extreme wind and wave exposure. In Victoria's far east, the warmer waters of the East Australian Current merge with influences from Bass Strait, the Tasman Sea, and strong wind and wave exposure to carve out yet another unique marine niche.

Shorelines along our east coast have plentiful sandflat communities, while to the west spectacular limestone cliffs and underwater pinnacles are hallmarks of the region. The wetlands, sandflats and mudflats merging with beaches, sand dunes, cliffs and shore platforms on Victoria's coastline provide many different habitats for plants and animals, including strongholds for shorebirds.

Some of these areas are recognised internationally as Ramsar wetlands, requiring extra special management and protection. Almost half of Victoria's Ramsar wetlands are found on or near the coast, and many also having Victorian Ports operating within them – including Corner Inlet, Western Port Bay, Gippsland Lakes and Port Phillip Bay.

While Western Port Bay has been identified as the potential major port to service the offshore renewable energy industry, other ports are also

gearing up for how to support the industry on an ongoing basis¹¹ and will need to be mindful of their impacts on these wetlands.

At a finer scale, the coast (the area within 500 metres of the shoreline) features 95 vegetation types, known as ecological vegetation classes, almost one-third of Victoria's total (at the bioregional level). They include scrubs, shrublands, heathlands, forests, woodlands, grasslands, lagoons, wetlands and marshes.

Away from the shoreline, Victoria's deeper, open waters support plankton, sea jellies, squid, large mammals including Fur Seals, Bottle-nosed Dolphins and Southern Right Whales, seabirds such as gannets, petrels and Little Penguins, and fish including pilchards, anchovies, Silver Trevally, Barracuda and Jack Mackerel. Many of these species are threatened and listed under threatened species laws.

In fact, more than 180 species in coastal and marine environments are considered threatened (included in Victorian government lists¹²) with marine and coastal biodiversity becoming increasingly weakened due to human impacts. Sadly, the conservation status of much of the marine environment, particularly marine invertebrates, is unknown.

The quality of open ocean waters has a direct influence on the health of nearshore waters and other marine habitats. Some marine national parks along Victoria's coast extend to the state limit of three nautical miles (5.5km) and protect open ocean waters, including parts of the cold, deep waters of Bass Strait, as do the marine parks in federally managed waters.

Currently, 5.3 per cent of Victoria's marine waters are formally and securely protected for nature conservation in national parks and sanctuaries. These areas, plus another 20 priority areas across Victoria's coastline, are identified as worthy of additional protection due to their exceptional natural values.¹³

The impacts on marine biodiversity from renewable energy development

Often perceived as environmentally benign, 'green' renewable energy technologies have ecological costs that are often overlooked. Thus, the increasing development of multiple large scale projects raises environmental concerns about their cumulative impact on marine and coastal ecosystems.

Renewable energy development has the potential for adverse impacts on marine values,



Long-snouted Boarfish
(*Pentaceropsis recurvirostris*).
John Turnbull

from construction to ongoing operations. The impacts of laying cables underneath the seafloor may appear relatively benign, however they cannot be understated.

Considering the high number of projects proposed across the state, this impact is amplified, with the potential for larger cumulative repercussions felt across the waters.

Marine environments are hard to capture data and assess impacts as water adds an extra layer of challenge than land because it's more difficult to access. While there is some knowledge known about the impacts from elsewhere overseas and local knowledge of Gippsland from Star of the South scientific studies, there are still large gaps in our knowledge in Australia for our unique marine

Fig 7: Potential high level marine impacts from energy development

Potential impact	Positive	Negative
Loss of marine and coastal fauna and/or flora as a result of habitat loss, modification or degradation		✓
Increase in marine and coastal fauna and/or flora as a result of installed infrastructure providing new habitat and refuge	✓	
Displacement of marine fauna (from, for example, feeding, breeding or resting areas)		✓
Colonisation of structures by invasive, non-indigenous marine species. These species may compete with native species for food, habitat etc.		✓
Colonisation of structures by indigenous species may provide habitat availability	✓	
Colonisation of structures by indigenous species may interfere with ecosystem dynamics		✓
Changes to marine and coastal habitat – provision of new habitat	✓	
Changes to marine and coastal habitat – loss, modification or degradation		✓
Modification of water quality		✓
Marine pollution		✓
Changes to coastal processes – e.g. reduced wave or tidal action which may modify habitats near installed infrastructure		✓
Changes to coastal processes – e.g. reduced wave or tidal action leading to reduced erosion or increased accretion	✓	

populations, since there are not yet any offshore wind farm.

The Discussion Paper recognises that 'rapid development of a marine energy industry should not be at the expense of unacceptable risks to the environment or other marine users.' Figure 7 outlines some of those potential high level marine impacts from energy development.

A more exhaustive list of the impacts from elements of wind farm projects taken from other development project's EES processes in the marine space, include:

- Direct damage to habitat or death/injury to wildlife.
- Above and underwater noise from construction and ongoing operation.
- Physical infrastructure placement such as the turbines and subsea cables blocking the routes of migratory threatened species such as albatross, southern right whales, and important fishery species such as snapper.
- Interruption to reproductive or other part of wildlife cycles.
- Direct collision of wildlife such as seabirds with infrastructure, leading to mortality or loss of foraging or migration habitat through displacement.
- Increased shipping and boating activity causing additional noise and marine mammal strikes.
- Disruption of bird flyways from offshore wind farm design and location of turbines or coastal infrastructure on shorebird habitat.
- Disruption to marine life migration, breeding, feeding and calving cycles.
- Physical removal of reefs and seabed habitat.
- Vibration impacting on the navigation of marine mammals.
- Increased risk of marine pest translocation due to the new infrastructure along the coastline, acting as 'stepping stones' for marine species, which can create havoc on marine ecosystems.
- Removal of coastal vegetation or bird nesting areas on the beaches for the placement of infrastructure from the transmission network.
- Cumulative impacts across multiple projects along Victoria's coastline.
- Effects on coastal processes such as sediment transport and erosion.

Western Port Bay, the potential location of Victoria's Renewable Energy Terminal, could experience these impacts. The bay is Victoria's second largest, and the only wetland in Victoria recognised by the United Nations (as a Biosphere Reserve) and the International Ramsar Convention for wetland conservation.

The Port of Hastings proposal to undertake potentially large volumes of dredging and land reclamation was rejected outright by the Federal Government due to the unacceptable impacts on Western Port's Ramsar-listed wetland.

Any future proposal would need adequate and early planning on a regional scale to avoid impacts to and its ecological character.

Appropriately sited and well-designed offshore wind farms (i.e. located away from important breeding and foraging areas for wildlife), are generally not a threat to biodiversity, with lower levels of bird mortality recorded.

Case study – impact on seabirds

The waters of southern Australia and New Zealand are global hot spots for albatross, petrels, shearwaters and Storm Petrels. Approximately half of the world's pelagic species occur in this region. Tasmania's coastal islands and areas of Victoria are also national seabird 'hotspots' with many seabirds foraging in these areas.¹⁴

Offshore wind generation poses significant impact on birds due to direct collision, displacement away from preferred habitat, and alteration of migration routes to name a few.

We know enough from land and marine studies in the northern hemisphere and in Australia, that pelagic species of seabirds with soaring flight are at the highest risk such as albatross. This is of concern as nearly all albatrosses are considered threatened to varying degrees and most have declining populations.¹⁵

Threatened migratory shorebirds, such as the Bar-tailed Godwit and Eastern Curlew, range-restricted endemic coastal nesting species, and parrots that migrate across Bass Strait are at high risk, including Critically Endangered Orange-bellied Parrots and Swift Parrots.

There are many effective mitigation measures for use in early planning, like no-go areas where seabirds feed and nest. In Victorian waters, it's common for seabirds to feed in areas close to the continental shelf. Identifying areas to be avoided, such as places with high concentrations of birds and flight paths (for example, Flinders Island to Wilsons Prom and King Island to Cape Otway), can be addressed early in project development.

This information should be used to create detailed biodiversity sensitivity maps that guide decisions on wind farm siting. A coordinated, regional-scale approach means individual projects can be set within a structured plan that uses consistent methods and approaches. The data from individual wind farm projects can then help assess the cumulative impacts on birds.

Other studies have shown that this effort has positive results. For example, avoiding alignment perpendicular to main bird flight pathways, and provisions of corridors between clusters of turbines on land, have recorded relatively low levels of bird mortality in the United States.¹⁶

Tasmania's offshore islands support massive aggregations of seabirds, including the largest colonies (up to 6 million birds) of the migratory Short-tailed Shearwater in Australia. They're also a stronghold for the world's smallest penguin species, the Little Penguin, and for the Sooty Oystercatcher and Black-faced Cormorant. These species, as well as the dainty Fairy Prion, are found on nearly all our offshore islands, displaying a clear preference for these remote habitats. Breeding sites of other seabirds, such as the Australasian Gannet, Shy Albatross, Sooty Shearwater, White-fronted Tern and Australian Pelican are entirely confined to offshore islands and need to be considered in offshore wind plans.

Case study – impact on marine mammals

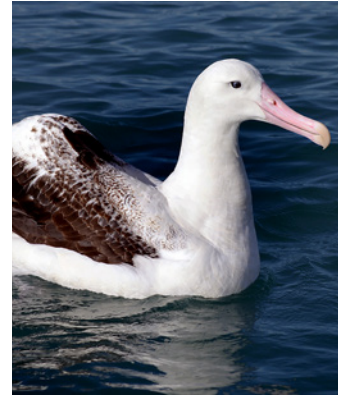
Marine mammals, including whales and dolphins, are particularly susceptible to the negative impacts of offshore wind farms. This includes underwater noise, the physical presence of turbines and other infrastructure, and an increase in vessel strikes.

Proposed sites for the Southern Ocean Offshore Wind Farm Zone directly overlap Biologically Important Areas (BIAs) for whales. Victoria's Portland to Port Campbell region are important reproductive sites for Southern Right Whales.¹⁷ Blue whales rely on the ecologically rich and vital Bonney Upwelling. The area between Robe, South Australia and Cape Otway, Victoria is one of the few known feeding aggregation habitats for Pygmy Blue Whales in Australia, and also overlaps with the offshore energy zone.

The Southern Right Whale Draft National Recovery Plan recognises the physical displacement of Southern Right Whales from their preferred habitats as a key threat, stating energy production facilities have the potential to act as barriers for whale migration into their coastal breeding areas. It notes that the displacement of whales through habitat degradation may also reduce breeding success.

Because Southern Right Whales rely on sound to communicate, they're particularly susceptible to any negative impacts that occur close to reproduction BIAs, where these mighty ocean creatures reside for long periods.¹⁸

Listed as Endangered under the EPBC Act, the recovery plan has an interim objective: 'anthropogenic threats are managed consistent with ecologically sustainable development



Wandering Albatross (*Diomedea exulans*). Bernard Spragg



Sea slug in coral off Wilsons Promontory, Gunaikurnai and Bunurong Country.
Shannon Hurley

principles and do not impede recovery of Southern Right Whales'. So far in Australia, the lack of forward planning for offshore wind is inconsistent with these objectives.

A great example of adopting exclusion zones to protect marine wildlife (such as the Southern Right Whale) for renewable energy activity is the US. The North Atlantic have proposed mitigation measures, including a prohibition on pile driving during critical migration times, exclusion zones for pile driving and sub-bottom profiling, and no sub-bottom profiling within right whale critical habitat.¹⁹

First Nations Sea Country

It is important that First Nations Sea Country connection is respected and protected. First Nations Peoples have the right to participate in decision-making, planning and implementation of projects that may affect their rights to self-determination and the practice of customary or traditional use of land, natural resources and/or their culture.²⁰

Working with and collaborating in meaningful ways with First Nations communities and Traditional Owners is essential where new areas are earmarked for renewable energy. This collaboration should take place early in the planning process.

Other ocean users and activities

As offshore renewable energy is an emerging industry, existing users of blue spaces need to be considered and planned for. These include activities like fishing, shipping, tourism, aviation, defence and marine safety. Depending on the usage, some may co-exist with offshore wind, while others may need to be excluded.

Addressing issues with competing marine uses will be a major factor in the success of Australia's offshore renewable energy industry.²¹

MSP serves as a useful process to help deal with these complexities and conflicts.

Current environmental assessment processes not fit for marine planning purposes

- Environmental assessment processes at the federal and state level apply to individual development projects and operate in isolation from other projects.
- The process does not measure or assess the cumulative effects on multiple individual projects over an entire renewable energy zone.
- EES processes are extremely costly, risk being rejected outright and create barriers for community to get involved.

- The scope of an EES is limited and may miss detrimental environmental impacts.
- These environmental assessments are not a marine planning tool to make decisions on multiple offshore wind site locations over a large geographic area.
- There is no process for assessing the cumulative impact of multiple projects in a wind energy zone with government guidelines putting the onus on industry to fill this gap.
- The EES process is not an adequate marine planning process for establishing a responsible new energy industry.
- The absence of proper marine planning imposes even greater risk to wildlife.
- Just as statutory planning on land is used to advise and inform, a complementary tool like marine spatial planning is required to guide locating future wind farms.

The environmental assessment process is inadequate

In Victoria, an Environmental Effects Statement process is used to evaluate potential impacts and/or effects of proposed projects. This is a requirement of the state's *Environment Effects Act 1978*. If it deems a project will impact matters of national significance, an Environmental Impact Assessment (EIS) is undertaken under the EPBC Act at the national level.

EES/EIS processes are used for single project assessments and operate in isolation. They do not learn from or consider the cumulative impacts of past, current or future projects across a geographic area. It is not enough to assess the environmental impacts of projects on an individual basis without regional planning and oversight.

The scope of an EES is limited and can exclude the assessment of detrimental environmental impacts

The terms of reference for an EES are often limited in scope and heavily weighted towards listed threatened species, lacking any assessment of broader ecosystem-wide impacts.

This is highly limiting and does not accurately measure impact for a single project, let alone multiple over a larger area. Often the developer will only measure impact around the project vicinity, excluding impacts felt on migrating species and flow on impacts across the ecosystem.

This narrowly focussed assessment does not identify more suitable areas for development, as would a marine planning exercise do.

An EES/EIS process does not measure the cumulative effects over an entire renewable energy zone

EES/EIS processes are woefully inadequate and not fit for purpose, especially to measure cumulative impacts. Limiting assessments to single projects without situating them in the full context increases costs for everyone involved and is deeply stressful for communities in both terrestrial and offshore projects.

To gain social licence for the energy transition, governments need to prove they can deliver significantly better assessment process.

The marine and coastal policy has a requirement for cumulative impacts to be considered within a proposed project. Described in Victoria's as Marine and Coastal Policy 2020 cumulative effects are:

'Death by a thousand cuts' is a fitting analogy. In the environmental context, each decision may result in an increment of change that is individually insignificant but if repeated over time may accumulate and contribute to significant environmental change. Each cut may seem inconsequential on its own but together they may be catastrophic.

Current environmental assessment processes that do not consider the impacts from other nearby projects. To achieve sustainable ecosystem-based management, cumulative impacts must be considered.

The absence of marine planning is an even greater risk to wildlife

Another danger of multiple uncoordinated explorations for offshore wind infrastructure are the additional pressures of developer-led scientific studies. Multiple developers run the risk of undertaking scientific research on the same population of birds for example. Repeated bird tracking studies can result in unnecessary stress to these animals.

The highly individuated approach to impacts afforded by EES/EIS processes, along with cumulative effects on the marine environment from multiple projects, cannot be easily measured or accounted for in the current system. This is a huge risk to wildlife.

The risks

Without coordination by marine spatial planning that complements the EES process, the offshore renewables industry risks being seen as environmentally irresponsible. This casts a shadow over government's ability to gain genuine social licence for the transition. It also poses additional cost implications and delays for industry should a particular site be found later on to be unsuitable for

development, forcing the developer to redo their environmental studies or choose another location. An example where this has happened was the Port of Hastings offshore Wind Terminal, AGL's gas import terminal, and VIVA energy in Port Phillip Bay, which were either rejected outright, or their EES studies were found to have unacceptable impact.²²

No substitute for proper marine planning

Environmental assessments are not an appropriate method of making decisions over large geographic areas. Nor do they account for the need to coordinate ocean stakeholders. A complimentary tool, like MSP, to guide locations of future wind farms is required, just as statutory planning on land informs terrestrial assessments. The marine environment should be no exception.

Without strategic planning, there is the risk of holding up offshore wind development due to stakeholder conflict and the impact on biodiversity values. Proper planning will create investment security for developers, while ensuring proper environmental protection. Renewable energy should be developed responsibly without compromising the environment we're trying to protect.

Resolving inconsistencies across state, national and international plans, policy and agreements

Various state, national and international policy and plans reinforce the need to roll out MSP to guide industry development. At the state level, a lack of marine planning processes is inconsistent with the Victorian Marine and Coastal Policy, which states the:

Marine Spatial Planning Framework is to guide planning, management and decision making across marine sectors in Victoria to enable equitable and ecologically sustainable marine uses and industries, and to coordinate and integrate managing risks, impacts and change in the marine and coastal environment.

In relation to industry, it states:

- 9.1 Strategically plan and manage industry use and development in the marine and coastal environment in a coordinated way to:
 - a. Provide for industry uses in appropriate locations (preferably on private land).
 - b. Minimise impacts and risks to the marine and coastal environment.
 - c. Appropriately manage competing or conflicting uses.
 - d. Facilitate coexistence and co-location of compatible uses.



Royal Spoonbills (*Platalea regia*) breeding at Dowd Morass Wildlife Reserve, Gunaikurnai Country

“While we cannot always see beneath the ocean’s surface, it has benefits far beyond the horizon. A clear process to deal with potential risks to entire marine ecosystems, and our human way of life, is absent in both state and federal debates on the issue. Loss of marine life, collision, injury, damage to, and disruption of, an animal’s ability to navigate to a breeding, feeding or birthing area are key examples of the impacts facing our marine wildlife. They cannot be offset.”

Our marine and coastal waters regulate the climate, are an important food source, sustain livelihoods, and contribute to health and wellbeing. They store carbon and help buffer the impacts of climate change. Communities are rightly concerned about the impact of the current policy gap between technological growth and the future health and use of the marine environment.

- e. Take into account and minimise direct, cumulative and synergistic impacts.
- f. Minimise exposure to coastal hazard risk and impacts of climate change.

At the national level, the South-east Regional Marine Plan prepared under the Australian Ocean Policy reflects the Commonwealth Government's commitment to develop ecologically sustainable marine industries, and do so with integrated planning and management.²³

The Ocean Business Leaders' Summit White Paper recognises that 'clear guidelines for project approval and siting for the offshore wind industry are essential. These guidelines should encompass all national waters and prioritise biodiversity conservation, fisheries management, and other ocean users. Existing legislation is a starting point, but further coordination across sectors and inclusive management practices are necessary across Australia's national waters to improve efficiency and build investor confidence.

The Australian Government is also taking a lead role in supporting the Taskforce on Nature-related Financial Disclosures (TNFD), a structured framework for companies to report their interactions with nature. It encourages 'nature positive' operations at its core.²⁴

At the international level, The High Level Ocean Panel supports clear frameworks that address environmental impacts and the needs of other ocean users (see Fig 8).

Protecting marine wildlife and habitats is part of the climate change solution

An important part of the climate solution is protecting, and avoiding harm to, marine and land ecosystems through the roll out and establishment of a 'green' energy industry.

Known as the 'natural climate solution', it acknowledges that nature is part of the solution. Scientific evidence shows that protecting and restoring wild animals (i.e. fish and mammals) and their functional roles, along with habitats like forests, wetlands, and coastal and grasslands, enhances natural carbon capture and storage.

Nature conservation as a solution is inspired by the recognition that processes within terrestrial and marine ecosystems naturally remove up to 50 per cent of all human-caused CO₂ emissions annually.

Were guidelines to avoid negative impacts followed, such efforts could co-benefit biodiversity conservation and the resilience of ecosystem services that support human livelihoods and welfare.

This requires a change in the current mindset, which largely holds that animals and habitats need to be protected from human impacts and climate change. It leads to the separate allocation of landscape and seascape space for animal conservation and natural climate solutions because it sees them as competing objectives. If instead we considered them as functionally interdependent, new opportunities to decrease negative emissions would be created. We could conserve marine wildlife and their habitats, while positioning Victoria as a leader in Australia's offshore wind sector – and do so responsibly.²⁵

Fig 8: High Level Ocean Panel, 2030 Outcome priority actions

**2030
OUTCOME**

Ocean-based renewable energy is fast-growing and on the path to becoming a leading source of energy for the world.

Priority Actions

- Invest in research, technology development and demonstration projects to help make all forms of ocean-based renewable energy—including wind, wave, tidal, current, thermal and solar—cost-competitive, accessible to all and environmentally sustainable.
- Work collaboratively with industry and other stakeholders to develop clear frameworks addressing environmental impacts of ocean-based renewable energy, enabling capacity, co-existence and integration with other uses of the ocean.
- Set clear goals, commit to deliver appropriate policy and regulatory measures, and remove market impediments in order to accelerate sustainable ocean-based renewable energy deployment.



The offshore islands at Wilsons Promontory support colonies of Australian Fur Seal (*Arctocephalus pusillus*). Hanna Geeson

3. The case for a marine spatial planning framework

Victoria is positioning itself to lead the nation in establishing a thriving new offshore wind industry.²⁶ With this comes responsibility. The Victorian Government must set the scene for best practice marine protection across Australia.

To guide developers toward responsible offshore wind development (i.e. site selection and conscientious conversations with other ocean interests), there must be a quality Marine Spatial Planning Framework outside of the normal environmental assessment processes (EES & EIS).

The standard environmental assessment processes do not allow for upfront planning that avoids environmental, cultural or social values for multiple offshore wind farm projects. The Directions Paper acknowledges:

It is essential to understand and evaluate potential impacts, as well as to consider them on a regional scale, before decisions are made about the extent of acceptable and appropriate development along the coast.

In this section we reference the ingredients and benefits of an MSP framework already developed in Victoria (needing implementation), make comparisons to land planning arrangements, and offer a preliminary guide to identifying no-go areas, as well as recommendations for where to start marine planning process.

The following section also provides further detail on why MSP is an ideal solution.

The ocean deserves planning equity too – a comparison with land

On land there is a detailed planning scheme, along with statutory planning and laws that developers are required to work with to avoid infrastructure on certain land tenures and overlays. This includes tenures such as national parks and high conservation value areas. These arrangements do not exist for the marine environment.

Wind turbines may be out of sight out on a hazy day but this does not nullify their impact. Other elements of offshore wind energy production, specifically the development of the transmission network through VicGrid, are subject to government oversight and upfront planning through a Strategic Land Use Assessment to determine 'renewable energy priority areas'. This is where high level mapping, including identifying national parks, is used to inform the appropriate location of infrastructure. Relevant planning schemes and land tenures that guide the location of infrastructure on land should too be applied to the marine environment.

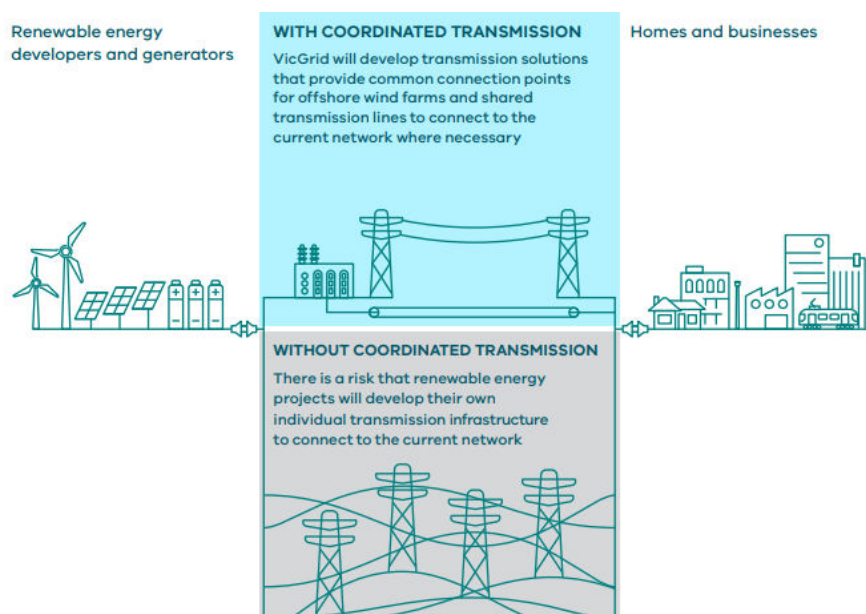
Figure 9, from the Victorian Government's Offshore Wind Transmission Development and Engagement Roadmap, compares the need for a 'coordinated transmission' so that developers do not organise their own infrastructure, comparing the risks 'without coordinated transmission'.

It states that VicGrid:

has been tasked with coordinating the overarching planning and development of Victorian Renewable Energy Zones instead of leaving it to private companies. It has been established to ensure that there is better coordination of projects and engagement with communities and stakeholders.

For consistency and risk reduction to the marine environment, this level of coordination and planning should apply to other infrastructure requirements across marine environment, in state and federal waters. This includes the planning of subsea cables, wind turbines and substations. The Marine Spatial Planning Framework used to guide this planning process is already supported and has been developed under Victoria's *Marine and Coastal Act*. Victoria's *Marine and Coastal Strategy* has committed to developing a plan by 2027, but so far has not progressed this commitment.

Fig 9: Offshore wind and transmission development led by developers vs VicGrid.
Source: Offshore Wind Implementation Statement 2



What is marine spatial planning

Marine spatial planning (MSP) is a planning process to organise the human uses of ocean spaces to maintain a healthy marine ecosystem that supports multiple uses. It helps marine industry, government, and the community better plan activities in the marine environment, now and into the future. It can also support sustainable growth of Victoria's blue economy and climate change adaptation planning.

As part of Victoria's Marine and Coastal Policy, an MSP Framework has already been developed, consisting of two parts.

Part A provides guidance and policies for marine planning and management decisions in Victoria, whether undertaking MSP or not.

Part B outlines how to initiate, approve, and undertake MSP in Victoria for a particular area.

The MSP Framework identifies the Minister responsible for the *Marine and Coastal Act 2018* as the lead minister for marine spatial planning, the Minister for Environment in consultation with other relevant portfolio Ministers. DEECA is therefore leading implementation of the MSP Framework.²⁷

More recent additions to the Framework include guidelines and planning areas outlining the areas suitable for developing a marine spatial plan. The offshore wind zones fall within these pre-defined areas.

Benefits of marine spatial planning

The Discussion Paper identifies the benefits of pre-defined marine energy areas available for allocation for offshore energy. Some of these include:

- Streamlined planning can save time and money for industry and other stakeholders.
- Information gathered during the marine spatial planning process can be used as baseline data for environment effects statements and to value marine energy resources.
- Assurance to stakeholders that marine energy projects be located in pre-defined areas.
- Where high-value marine and coastal assets can be geographically defined, these areas can be removed as potential marine renewable energy sites, providing certainty to all parties and reducing costs.
- Can help proponents avoid potentially costly and damaging planning disputes with local communities and other affected parties.

An example of how upfront planning can assist in the above ways is a recent UK study. A proposed offshore wind farm at Docking

Shoal in the UK was refused planning consent due to the impacts upon seabird populations, as well as the potential cumulative impacts of neighbouring offshore wind project developments.²⁸ This outcome reiterates the need for upfront marine spatial planning to avoid similar issues in Victoria.

Port of Hastings Offshore Wind Terminal - a case study

The Victorian Government's Port of Hastings put forward a proposal to the Federal Environment Minister for environmental approvals under the EPBC Act.

The proposal was rejected outright by the Federal Environment Minister on advice that the dredging and land reclamation and other impacts would have caused an unacceptable level of impact to Western Port Bay's protected Ramsar wetlands.

The project risked irreversible damage to the ecological character of the wetland governed by international agreements.

Proper upfront planning by the state in collaboration with the Federal Government could have avoided the rejection and saved time, money and determined a more suitable location/proposal for Victoria's Renewable Energy Terminal.

It highlights how unfit for purpose the EES/EIS environmental approvals processes are, and the need for upfront marine planning early on for Western Port Bay, and the offshore wind zones.

The latest Victorian State of Environment Report 2023 confirms the need for greater investment in wetland planning and management with wetlands (along with grasslands) being the only ecosystem to have deteriorated in recent years.²⁹

Gippsland offshore wind farm zone - a case study

During the declaration process for the Gippsland Offshore Wind Zone there was a highly simplistic and surface level attempt to plan upfront, de-risk industry and coordinate offshore wind.

The Australian Government declared the Gippsland Offshore Wind Energy Zone in December 2022. A 60-day consultation period was given prior to the declaration, which sought comment on the draft boundary lines of the zone.

The map of the proposed zone indicated 'areas to avoid' for existing oil and gas titles, and the Federal Beagle Marine Park, however it did not consider important natural values like state marine national parks, migration, breeding, wildlife nursery areas or other water users in the initial proposal.



Corner Inlet Ramsar site, Nooramunga Marine and Coastal Park, Gunaikurnai Country. Tim Allen



Little Penguin (*Eudyptula minor*),
Lady Julia Percy Island/Deen Maar,
Gunditjmara Country.
Simon Branigan

The short document accompanying the consultation only included a brief paragraph to describe the 'natural environment', without identifying other high value biodiversity, social or cultural values. It wasn't clear from the process how these values were considered in the identification of the zone boundary.

The Public Consultation Summary Report acknowledged many submissions made across industry, NGO and individuals who were concerned about the consultation's uncoordinated nature. These included concerns about a lack of process to share marine space with other existing water users, the cumulative impacts on marine life and habitats and planning for visual amenity.

To build community support for future offshore energy zones, a more thorough and early assessment process for natural values should be included in the Federal Government's identification of 'no-go zones'.

A range of values could have been identified to demonstrate the Federal Government's commitment to protecting the environment, including:

- Migration pathways of the Humpback Whale, and migration, calving and breeding of the Southern Right Whale (listed under the Victorian *Fauna and Flora Guarantee Act 1988* and EPBC Act).
- Popular bird sites for Short tailed Shearwater, Common Diving Petrel, Fairy prion, Little Penguin off the coast of Wilsons Promontory, albatross species, and the many other species and their flyways.
- Great White Shark nursery area off Corner Inlet and Wilsons Promontory
- Important fish species such as School Shark, Orange Roughy (both listed under the EPBC Act).
- Protected areas within state waters that connect with offshore areas including:
 - Wilsons Promontory National Park
 - Wilsons Promontory Marine National Park
 - Corner Inlet Marine National Park
 - Bunurong Marine National Park
 - Ninety Mile Beach Marine National Park
 - Beagle Marine Park
 - various coastal reserves.

Other values that require collaboration with include:

- First Nations Sea Country Connection
- water uses such as for fishing, shipping, tourism, aviation, defence and marine safety.

Communication on the decision-making process used to identify 'why' the final area was declared would be helpful for all stakeholders to understand.

Guidance to industry has been given that they are to be responsible for assessing the cumulative impacts across projects:

When there are multiple proposals within a region, where possible, proponents should take into account the potential impacts of each project. This supports maximising the utility of a declared area for renewable generation while managing the cumulative environmental impacts of the individual and collective projects upon the region.³⁰

This should not be an industry-led exercise. The proposed Southern Ocean Offshore Wind Zone in the south-west is an opportunity for the federal and state governments to show leadership and undertake more well thought out planning.³¹

The mechanism to trigger a marine spatial plan

The case for marine spatial planning as a tool for governance, collaboration, funding and decision making for offshore wind projects.

In Victoria, the *Marine and Coastal Act 2018* allows for an MSP to be developed. The Marine and Coastal Policy 2020 has developed a detailed MSP Framework, guidelines and planning areas so that any management agency has the instructions to initiate and develop a plan. Chapter 9 actively encourages the use of marine spatial planning particularly for industries:

9.3 Use the Marine Spatial Planning Framework to guide planning, management and decision making across marine sectors in Victoria to enable equitable and ecologically sustainable marine uses and industries, and to coordinate and integrate managing risks, impacts and change in the marine and coastal environment.

Specifically relating to offshore wind, the Marine and Coastal Strategy 2022 states that the MSP Framework applies to the Victorian Offshore Wind Strategy:

4.8 Implement the Victorian Offshore Wind Strategy 2022–29 that:

- applies the guidance, approach and processes in the MSP Framework.

Furthermore, the strategy commits the state government to undertaking marine spatial planning between 2023-2027.

To achieve these commitments, a marine spatial planning team could sit within the state Department of Energy, Environment and Climate Action and work within the planning team or the offshore wind department. It could work alongside the Federal Government to allocate upfront planning of assets within

state waters such as the chosen port terminal and the offshore wind energy zones in federal waters.

The Discussion Paper recognised that an energy policy should be used to guide strategic planning of the industry. We note there was no marine energy policy officially released, and therefore, marine spatial planning under the marine and coastal policy should be the leading policy to follow. While the environmental approvals processes at the state and federal level are separate, MSP could feed into environmental assessments.

At the federal level there is not yet a legislated mechanism for MSP. There is an opportunity as part of the Federal Government's Nature Positive Plan on environmental law reform to include MSP as an essential part of the regional planning process.

Importantly, marine spatial planning done now under state policy can feed into regional planning at the national level later on.

Preliminary marine planning within offshore wind energy zones: identifying no-go areas

In the absence of having a MSP process underway currently, preliminary planning using the marine spatial guidelines could be undertaken as a first step in key areas such as the offshore wind energy zones, and adjacent areas in state waters to identify no-go areas off limits to infrastructure.

This could involve spatially identifying areas off limits to development using data that exists already. An example of a no-go area would be to rule out infrastructure within or transiting through marine protected areas and other already known ecologically important areas for threatened wildlife and habitats.

Preliminary planning to identify no-go zones could be the first step towards a full MSP. The planning process could be built on later as more information and data become available.

Environmental factors should influence the siting of offshore wind industry projects and provide guidance on areas off limits to developers. Whether done on its own, or part of a broader MSP process, criteria (or standards) should be identified to guide the location of offshore wind proposals that avoid significant marine features, ecosystems, species and cultural areas and other areas where existing uses might conflict, in the early stages of planning.

This position is backed up in the discussion paper:

There will be general locations where development of marine energy projects

is likely to be unsuitable, such as marine national parks and sanctuaries, shipping channels, aquacultures reserves, and areas of environmental and cultural heritage significance.

This would be done prior to any declaration of an offshore wind energy zone, such as the proposed Southern Ocean Zone near Warrnambool, but could be done alongside the process of approving or assisting to approve feasibility licenses for already declared areas like the Gippsland Offshore Wind Zone. Thoughtful boundaries and site identification should be the norm not 'text lines on a map.'

Specific no-go areas could be identified through a biodiversity sensitivity mapping exercise and include no infrastructure or operations within it to avoid:

- Marine national parks, national parks, state parks and other protected areas.
- High conservation value areas, breeding, nursery or aggregating areas of threatened species.
- Biologically Important Areas (BIAs)/Key Biodiversity Areas (KBAs).
- Ramsar wetlands.
- World Heritage areas.
- Areas marked to be new marine national parks.
- Critical animal migration pathways.
- Culturally significant areas.
- Buffers around high conservation areas including island, which are often roosts/ nesting sites for shore/seabirds.
- Visually sensitive areas or national parks like Wilsons Promontory National Park.

Other areas off limits to development should include marine park areas with high biodiversity values that are earmarked for protection. There are twenty new areas identified to fill the gaps in protection that currently exist in Victoria's marine national park and sanctuary network.³²

Protecting visual amenity

The visual amenity of Victoria's natural and semi-natural landscapes should be protected from infrastructure that detracts from the public enjoyment of those assets. This is especially important for areas of high conservation and tourism, like Wilsons Promontory National Park. There should be no infrastructure through terrestrial or marine national parks.

It is important that visual amenity is one of the criteria used and identified as off-limit areas for offshore wind infrastructure. We support the use of designs and location that have minimal visual impact and retain the natural and heritage values of the landscape. This includes



Whisky Bay, Wilsons Promontory National Park, Bunurong and Gunaikurnai Country. Paul Sinclair

“Industry cannot be made responsible for doing the job of government. A clear mandate for marine planning and the management of cumulative impacts across the offshore wind zone led by government, rather than industry, should be the norm.”

both infrastructure at sea in Commonwealth waters, and within state water and lands.

We note that in Australia, already declared offshore wind farm zones begin 10km from the shoreline. We also note that a New York study has suggested a 30km buffer from shore.

Support for marine planning

Many industry voices are advocating for MSP as part of the process to de-risk and boost investor confidence and cuts development timeframes.

While the industry is positioning itself as a responsible custodian of the ocean, developers have called for clear guidelines for project approvals, with site selection underpinned by biodiversity conservation and the consideration of other marine space users.³³

Developers recognise that thorough environmental assessment and marine spatial planning is essential to drive fair and sustainable integration into traditional marine uses, inform site selection, mitigate risks and lower costs.³⁴

Humpback Whale (*Megaptera novaeangliae*) off Summerlands, Phillip Island/Millowl, Bunurong Country. John Daw



4. Good examples of planning elsewhere

New York State

New York State has set good precedence for thorough marine planning through their development of the New York State Offshore Wind Master Plan. It outlines a process for upfront marine planning to help guide locations for future offshore wind projects.

They have conducted research, analysis, and outreach to evaluate the potential for offshore wind energy through a comprehensive roadmap and suite of over 20 studies for the first 2,400 megawatts of offshore wind energy. It encourages the development of offshore wind in a manner that is sensitive to environmental, maritime, economic, and social issues while addressing market barriers and aiming to lower costs.

One scientific study of note is the Environmental Sensitivity Analysis that identifies places of biological importance within the offshore Area of Analysis, using a risk assessment and sensitivity model.

- The mapping outputs from the modelling exercise, along with other studies and tools,

informed New York State's preliminary identification of wind energy areas

- These studies provide information related to a variety of potential environmental, social, economic, regulatory, and infrastructure-related issues associated with planning for future offshore wind energy development off the state's coast.
- These studies were used to inform the preliminary identification of potential wind energy areas, providing current information about potential environmental and social sensitivities, economic and practical considerations, and regulatory requirements associated with any future offshore wind energy development. They identified measures to be considered or implemented with offshore wind projects that avoid or mitigate potential risks involving other uses and/or resources.

They have also undertaken a visibility threshold study, in a variety of weather conditions, to determine the likely distance wind turbines would be seen from shore. In this case it recommended a 30km buffer from shore.³⁵

Vineyard Wind 1 offshore wind substation, United States. *Avangrid*



Canary Islands – Marine Good Environmental Status

Good Environmental Status (GES) has been adopted by the European Union and gives countries an outline of how to make sure marine resource use is conducted at a sustainable level, with continuity for future generations.

Spain's Canary Islands have developed a checklist (based on GES) for establishing new offshore wind energy projects for both developers and environmental planning and assessment agencies.³⁶

A case study from the Canary Islands recommended avoiding important areas for wildlife breeding and foraging activities. It proposed the development of offshore wind farms far from key areas for conservation to avoid negative impacts on nature. Flying/migration areas, collision studies of terrestrial wind turbines have recorded relatively low levels of bird mortality.³⁷

Fig. 11: Outline of case study into offshore renewables in the UK

International Case Study

Offshore renewables in the United Kingdom

In 2004, the UK Government commissioned a study to identify areas of the seabed most suited to renewable energy generation. Following this, guidance on the consents process for wave and tidal demonstration projects in England and Wales was issued. A two stage process in the development of the offshore renewables industry was proposed.

Stage 1: Pre-commercial demonstration

The pre-commercial demonstration phase is primarily concerned with the development of the resources and capabilities of the industry that designs and manufactures wave and tidal stream electricity generation devices (as distinct from the renewable electricity generation supply sector). The aim is to encourage and assist in the evolution to become an industry capable of offering commercially viable electricity generation devices or products to the market. To achieve this aim developers must test and prove their devices.

Stage 2: Commercial generation

The second phase is the commercial generation phase. When industry reaches the point where commercially viable products are available, it will be possible for the electricity generating industry to plan and implement commercial generation projects.

Under the UK model, allocation of tenure for Stage 1 sites is by application with applications considered on their merits. It is not until the second phase, when a sufficient number of companies are proposing viable commercial level projects that a competitive allocation process for pre-defined sites occurs. Such commercial scale projects are restricted to pre-defined zones that have been identified through a rigorous environment assessment process.

The UK Government established test site facilities for wave and tidal renewable energy devices in Orkney (European Marine Energy Centre) and Cornwall (Wave Hub). Developers are encouraged to investigate the facilities offered at these test sites in respect of their requirements for the testing of prototype marine energy devices.

The UK Government has also drawn up protocols for the provision of lease options for test (i.e. prototype trial), demonstration and pre-commercial device deployment at suitable locations where sound reasons prevail for not being able to utilise existing test facilities. Outside of established test facility areas, applications for demonstration projects can be made for an initial period of seven years with an option to extend for a further period of up to seven years providing certain milestones have been met, and for up to 20 devices and not more than 10MW aggregate capacity.

Using this staged approach, the UK Government developed a planning framework while simultaneously permitting occupation of marine areas by developers to test technology and advance industry learning in preparation of larger scale development.

Vietnam

In Vietnam, offshore wind power is identified as one of the breakthrough solutions for energy transformation and national energy security. It has identified marine spatial planning as especially important for identifying potential marine areas, suitable zoning for offshore wind and to provide a framework for decision-making and stakeholder engagement.

The government of Vietnam acknowledges that marine spatial planning is expected to further ensure that renewable energy, and especially offshore wind power, is developed in a way that is socially and environmentally sustainable, while contributing to Vietnam's rising energy needs.³⁸

United Kingdom case study

The UK carried out a two staged process to establish their offshore wind energy areas. This case study highlights the two staged process that helped the UK Government create a

planning framework, while simultaneously permitting occupation of developers to test technology to advance industry knowledge in preparation for larger scale development. Importantly, commercial scale projects are restricted to pre-defined energy zones that have been through a rigorous environmental assessment process.

An outline of the study is presented in Fig 11.



Tyrendarra-Eumeralla Coastal Protection Reserve, Gunditjmara Country. *James Cordwell*

5. Discussion and recommendations

The offshore renewables sector has a great opportunity to apply planning processes that work with nature and communities, therefore increasing social license. By aligning the transition to offshore energy with environmental protection, using the principles of avoidance as a priority, they can become global leaders.

Better yet, for the energy transition to be truly good for people and the planet, the sector must aim for vision of a regenerative, nature-positive renewable industry.

The recommendations in this report create a timely opportunity for the state and federal energy and environment departments to co-create a nature positive offshore wind industry together, taking practical steps towards realising this vision.

Both levels of government must recognise that current environmental assessment processes are woefully inadequate for the task of avoiding, measuring and mitigating the environmental impacts of multiple projects of this emerging new industry.

Marine planning of any kind has been lacking. Federal and state governments have been handballing their responsibilities in this space to one another, whereas it's a team effort requiring collaboration from both parties. There is a dire need for marine spatial planning– an evidence-based process to complement environmental assessments.

MSP is a requirement of state and international policy and guidelines, and in

Victoria the framework is ready to be rolled out. If done thoughtfully, a responsible industry with social license could be achieved.

Upfront MSP can identify areas more suitable for development, and areas off-limits to protect biodiversity, cultural and social values, providing guidance to make informed and responsible decisions, further upholding the industry's reputation.

Preliminary marine planning (recommendation 2) is the bare minimum that should be undertaken over any area where infrastructure is proposed to occur, including offshore wind energy zones and adjacent state waters.

By using the principles in Victoria's Marine Spatial Planning Guidelines, and drawing on the up-to-date information and research, this exercise could identify areas off-limits to infrastructure to protect significant natural, cultural and social values within federal and state waters, and identify areas more suitable to development. Important areas to avoid include state and federal marine national parks and sanctuaries, aggregation areas for threatened whales, fly way areas for threatened seabird species, shipwrecks, and cultural sites, and areas for other ocean users. Preliminary planning is the first step towards a more comprehensive marine spatial plan built on over time.

Recommendation 3 speaks to the need for a set of criteria applicable to all renewable energy zones that excludes development within important areas, like both state and

Bridgewater Bay Foreshore
Reserve, Gunditjmara Country
James Cordwell



federal terrestrial and marine national parks and sanctuaries, important wildlife aggregation areas and cultural values. This would be a standard the industry would be responsible for upholding when deciding on potential locations.

Highly relevant for this offshore wind energy zone, and proposed and future declared zones, is recommendation 4. The protection of environmental values should form a core part of the decision-making criteria when decisions are made on siting, granting feasibility licenses, proposing and declaring offshore wind energy zones.

The Port of Hastings in Western Port Bay is flagged as Victoria's Renewable Energy Terminal and is most imminent for the siting of renewable energy infrastructure for Victoria's marine and coastal environment.

Subject to environmental and planning approvals, it will determine how and where infrastructure is transported to the offshore wind zones.

Given the sensitive nature of the environmental values under state, national and international protections, marine planning for Western Port is particularly urgent.

Given Phillip Island is Victoria's number one iconic tourism attraction, and the contention that exists between tourism and offshore wind, there is urgency for social license to be earned in Western Port.

There is a call for the Victorian Government to adopt a new Framework for Western Port Bay, and pilot Victoria's first marine spatial plan, a timely requirement under the

Marine and Coastal Strategy. This would help establish a responsible offshore energy sector that protects - not damages the natural, cultural and social values of Western Port Bay (recommendation 1).³⁹

An MSP should be led by a marine spatial planning team, and could be hosted within DEECA. It would benefit from the collaboration of DCCEEW (recommendation 5).

To help address the gaps in our knowledge and understanding of risk to the marine environment, it would be wise for the Victorian/Federal Government to establish an advisory body to appraise the impacts the energy transition will have on nature (recommendation 7).

The process for how the offshore wind roll out will avoid impacts on nature would benefit from greater federal government leadership and coordination. There is an opportunity to recognise the importance of MSP in Victoria to help roll out the federal government nature positive plan through contributing to regional plans and for MSP to be hardwired into the sustainable oceans plan (recommendation 6).

An important part of any planning exercise is growing understanding through scientific research. Any research undertaken by any offshore wind developer should be shared and made publicly available for planning purposes (recommendation 8). This has been a major flaw in the offshore fossil fuel industry. The renewable energy sector has a great opportunity to differentiate themselves by bucking this trend of non-transparency.



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Acronyms

BIA	Biologically Important Area
DCCEEW	Department of Climate Change, Energy, the Environment and Water (Cwlth)
DEECA	Department of Energy, Environment and Climate Action (Vic)
EES	Environmental Effects Statement
EIS	Environmental Impact Assessment
EPBC	<i>Environment Protection and Biodiversity Conservation Act 1999</i> (Cwlth)
FFG	<i>Flora and Fauna Guarantee Act 1988</i> (Vic)
GES	Good Environmental Status
KBA	Key Biodiversity Area
MNES	Matters of National Environmental Significance
MSP	Marine spatial planning
NOPSEMA	National Offshore Petroleum Safety and Environmental Management Authority
NOPTA	National Offshore Petroleum Titles Administrator
PoH	Port of Hastings
TNFD	Taskforce on Nature-related Financial Disclosures
VNPA	Victorian National Parks Association
VTIF	Victorian Transmission Investment Framework

Weedy Sea-dragon (*Phyllopteryx taeniolatus*) in Western Port Bay, Bunurong Country.
Matt Testoni





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