[redacted]

**From:** [redacted]
**Sent:**
**To:** Southerly Ten
**Subject:** New submission from EIS Submission
**Attachments:** CliffHall-Call_for_comment.Star_of_the_South.-copy.docx

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**Are you making this submission on behalf of someone else and/or an organisation?**

No

## Your Details

**Name**

cliff hall

**Address**

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- CliffHall-Call_for_comment.Star_of_the_South.-copy.docx

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✔ This submission does not contain any material that could be regarded as defamatory or offensive to any person

# Call for Comment; Star of the South "Offshore Wind Farm"

## Submission by Cliff Hall. 22nd June 2026.


# Gippsland Offshore Renewable Energy Zone

The **Gippsland Offshore Wind Zone** is Australia's first officially declared offshore renewable energy zone. Located off the coast of Gippsland, Victoria, in the Bass Strait. This massive 1,500,000-hectare marine area has the potential to generate 25 gigawatts (GW) of wind power.

**(DCCEEW)**

*Note; Bass Strait REZ Declared Area OEI-04-2024 is a separate site that's connected to the Gippsland project.*

# Call for Comment; Star of the South “Offshore Wind Farm”

## Executive Summary

**Scale**

The project and adjacent developments represent one of Australia's largest offshore industrial precincts.

**Space**

The combined footprint extends across vast areas of Bass Strait, including the Gippsland coast, which interacts with internationally significant ecosystems.

**Time**

Thirty years of operation means small annual effects may accumulate into significant long-term consequences.

**Uncertainty**

Knowledge gaps and reliance upon unproven mitigation measures remain acknowledged throughout the EIS.

**Place**

The Gippsland coast, Corner Inlet and Ninety Mile Beach possess environmental, social and cultural values that extend beyond economics.

**Inheritance**

Future generations will inherit the consequences of decisions made today. Where uncertainty remains and impacts may be irreversible, precaution should prevail.

**Accordingly, approval should not be granted until outstanding uncertainties, cumulative impacts and long-term consequences have been independently assessed and demonstrated to be acceptable.**

# Call for Comment; Star of the South "Offshore Wind Farm"

## Table of Contents

# Call for Comment; Star of the South “Offshore Wind Farm”

## PART-I.

### FOUNDATIONS

#### The Precautionary Principle and Community Concerns

1. Opening Statement
2. Community Concerns
3. About This Document

# Call for Comment; Star of the South “Offshore Wind Farm”

## 1. Opening Statement

**To whom it may concern,**

I respectfully submit this objection to the proposed Star of the South offshore wind project. Primarily because of the significant and insufficiently understood risks it may pose to the marine environment, biodiversity, coastal communities and the unique natural values of the Gippsland region.

The Star of the South project has released a combined draft Environmental Impact Statement (EIS) and Environmental Effects Statement (EES) comprising approximately 2,500 pages, supported by around 30,000 pages of baseline data and 26 technical studies. The scale of this work and the considerable resources invested by Southerly Ten and its consultants should be acknowledged.

However, the volume of material itself does not eliminate uncertainty, nor does it guarantee that all potential impacts have been adequately assessed.

Public consultation on these documents closes on 29 June 2026. Given the extraordinary size and complexity of the material, the consultation period provides insufficient time for affected communities and members of the public to review, understand and properly evaluate the information presented. A six-week consultation period is inadequate for documents of this magnitude and significance. Consideration should be given to extending the submission period to enable meaningful public scrutiny and informed participation.

While the summary documents provide an overview of the proposal and its claimed benefits, many conclusions rely upon assumptions, modelling and future mitigation measures that have yet to be demonstrated under Australian offshore conditions. The EIS itself acknowledges uncertainty in several key areas, including seabird behaviour, cumulative impacts, marine mammal interactions and long-term ecosystem responses.

Environmental assessments should not merely identify possible risks; they should demonstrate, with a high degree of confidence, that those risks can be avoided or effectively managed. In circumstances where scientific uncertainty remains and potentially irreversible impacts are possible; the precautionary principle should apply.

This submission does not oppose renewable energy as a concept. Rather, it questions whether the current proposal has demonstrated that the environmental, social and economic values of the Gippsland coast, Corner Inlet, Bass Strait and Ninety Mile Beach can be adequately protected over the project's anticipated thirty-year operational life.

Accordingly, I submit that approval should not be granted until the outstanding uncertainties, cumulative impacts and long-term consequences have been independently assessed and shown to be acceptable.

## 2. Community Concerns

Where uncertainty exists and the consequences of error may be irreversible, the burden of proof should rest with the proponent to demonstrate that impacts can be avoided, rather than with the community to prove that harm will occur.

The concerns expressed by residents, environmental groups, commercial and recreational fishers, tourism operators and local communities, should not be dismissed as resistance to change or opposition to renewable energy. Rather, they reflect legitimate questions regarding the scale, location and cumulative impacts of industrial development within a region renowned for its environmental, economic and cultural significance.

**The Gippsland coast, Corner Inlet and Ninety Mile Beach**, support internationally significant wetlands, important fisheries, marine protected areas and some of Australia's most valued coastal landscapes. These natural assets underpin local tourism, recreation and community identity, while also providing habitat for migratory birds and marine mammals protected under national and international agreements.

The federal Government's own summary of public consultation on the Gippsland Offshore Renewable Energy Zone, identified a broad range of concerns raised by communities and stakeholders. These included potential impacts on marine ecosystems, fisheries, whale migration, bird populations, navigation safety, radar systems, tourism, visual amenity and the cumulative effects of multiple offshore wind projects. Such concerns are neither unreasonable nor unique to Gippsland and have similarly been raised in jurisdictions where offshore wind developments already exist overseas.

Many of these issues involve complex environmental processes and long-term consequences that remain subject to uncertainty. Importantly, several knowledge gaps have been identified within the project's own Environmental Impact Statement. In such circumstances, community concerns should be regarded as prudent and legitimate. Particularly where potentially irreversible impacts may affect nationally significant species, internationally recognised wetlands and industries that have supported coastal communities for generations.

Community confidence cannot be achieved through assurances alone. It requires transparent evidence demonstrating that the environmental, social and economic values of the Gippsland coast can be protected throughout the anticipated thirty-year life of the project.

## 3. About This Document

My submission has been structured to assist readers in navigating a complex and highly technical subject. It is intended to provide an alternative perspective on selected issues discussed in the Star of the South Environmental Impact Statement (EIS) and Environmental Effects Statement (EES), while highlighting areas where uncertainty, knowledge gaps and cumulative impacts warrant further consideration.

For ease of reference, each topic follows a consistent format:

**They Say** – A summary or extract of claims, conclusions or findings presented in the project's EIS, EES or associated material.

**Counterargument** – An alternative interpretation or perspective that identifies potential limitations, uncertainties or assumptions underlying those conclusions.

**According To** – References to government agencies, scientific institutions, academic publications or other authoritative sources relevant to the subject under discussion.

**Supporting Evidence** – Additional information, studies, images or expert opinions that provide context or illustrate the issues being raised.

This submission does not seek to dismiss renewable energy technologies, nor does it claim that all impacts associated with offshore wind development are fully understood. Rather, it argues that scientific uncertainty should favour caution rather than assumptions.

Throughout this submission, particular emphasis is placed on cumulative impacts, long-term ecosystem changes, internationally protected species, and the acknowledged knowledge gaps contained within the project's own assessment documents.

The purpose of this document is not to prove that environmental harm will occur. Rather, it is to demonstrate that important questions remain unresolved and that the burden of proof should rest with the proponent to show that environmental, social and economic values can be adequately protected before approval is granted.

# PART-II. SCALE

## Understanding the Magnitude of the Development

4. Star of the South Developer – Southerly Ten
5. Wind Turbine Description
6. Space (Energy Density)
7. Cumulative Impacts & Time

# 4. Star of the South Developer

## Southerly Ten

Southerly Ten is a specialist Australian offshore wind developer established to deliver large-scale renewable energy projects off the Victorian coast. The company is backed by Copenhagen Infrastructure Partners (CIP), one of the world's largest renewable energy investment firms.

Southerly Ten currently holds two adjacent offshore wind development areas within the Gippsland Renewable Energy Zone:

**Star of the South (FL-006)** project occupies approximately 58,600 hectares, offshore between Port Albert and Woodside Beach. The proposal consists of up to 147 offshore wind turbines, between 260 and 350 metres in height, together with up to five offshore substations and associated export cables. Electricity generated by the project would be transmitted to the Latrobe Valley via subsea and underground cables connected to the Giffard substation.

**Kut-Wut Bratualung (FL-005)** is an early-stage offshore wind project proposed immediately adjacent to the Star of the South development area. Covering approximately 68,900 hectares, the project could contain up to 150 offshore wind turbines and associated infrastructure. Combined, these two developments represent one of the largest proposed offshore industrial precincts in Australia.

When viewed in isolation, individual projects may appear manageable. However, the cumulative footprint and combined environmental effects of adjacent developments must also be considered.

The concentration of multiple projects within the Gippsland Renewable Energy Zone raises important questions regarding cumulative impacts. Especially so, on migratory birds, marine mammals, fisheries, marine protected areas and the internationally significant wetlands associated with Corner Inlet and the Gippsland coast.

Accordingly, environmental assessments should not focus solely on the impacts of individual projects. The cumulative consequences arising from multiple developments operating simultaneously over several decades deserve equal consideration, particularly where scientific uncertainty remains and potentially irreversible impacts are possible.

## 5. Wind Turbines Description

The Star of the South project proposes the installation of up to 147 offshore wind turbines, with maximum tip heights of approximately 350 metres. Making them among the largest structures ever constructed in Australian waters.

**They Say**

The EIS describes modern offshore wind turbines as highly efficient generators of renewable energy. Turbine dimensions and layouts have been designed to optimise energy production while maintaining adequate spacing and minimising environmental impacts.

**Counterargument**
The sheer size and scale of the proposed structures should not be underestimated. A turbine height of 350 metres exceeds many familiar landmarks and represents a significant industrial presence extending across a substantial area of Bass Strait.

Individual turbines require large spacing distances to minimise aerodynamic interference and optimise energy production. Consequently, the overall footprint of the project extends far beyond the physical dimensions of the towers themselves. When associated infrastructure, offshore substations, export cables and vessel movements are considered, the project represents a large-scale transformation of the marine environment rather than the installation of isolated structures.

**According To**
Media reports say modern offshore wind turbines continue to increase in size, in order to maximise energy generation and improve efficiency. Larger turbines require greater separation distances, resulting in developments occupying extensive areas of ocean.

The Star of the South project proposes turbine heights of up to 350 metres. Additional offshore wind projects proposed within the Gippsland Renewable Energy Zone, may collectively occupy many hundreds of square kilometres.

**Supporting Evidence**
The dimensions of the proposed turbines illustrate the importance of considering not only the number of structures, but also their scale and spatial extent.

While environmental assessments often focus on individual turbines, marine species experience the cumulative effect of the entire development area. Birds, whales, fish and other marine organisms do not encounter a single structure in isolation, but rather an extensive network of turbines, cables, substations and vessel activity operating continuously over decades.

The environmental consequences of industrial developments occupying vast areas for approximately thirty years cannot be evaluated solely by examining the effects of individual structures. It is the cumulative interaction between scale, space and time that ultimately determines long-term outcomes. Scientific uncertainty should favour caution rather than assumptions.

## 6. Space (Energy Density)

**Space** is one of the most overlooked aspects of offshore wind development. Modern thermal power stations, such as coal or gas-fired plants, are capable of producing large amounts of continuous electricity from relatively compact sites. By contrast, offshore wind developments require turbines to be widely spaced to minimise aerodynamic interference and optimise energy production. Consequently, the total area occupied by an offshore wind project extends far beyond the physical dimensions of the turbines themselves.

**Counterargument**
Environmental assessments often focus on individual structures rather than the overall spatial footprint of the development. However, marine ecosystems, migratory species and human activities experience the cumulative effect of the entire area occupied by turbines, substations, cables and associated vessel movements.

The significance of space should not be underestimated. While the physical footprint of turbine foundations may be relatively small, the operational footprint of offshore wind developments can extend across hundreds or even thousands of square kilometres. Additional projects within the Gippsland Renewable Energy Zone further increase the cumulative spatial extent of industrial activity.

**Supporting Evidence**
Natural gas power plants are highly compact industrial facilities. They require only about 0.2 to 1 acre per MW of generation capacity. A tiny 2 MW gas plant or modular turbine would fit comfortably on a plot of under 2 acres. The comparison below scales the spacing and direct infrastructure footprints for a hypothetical 2 MW installation of each source.

| Metric | 2 MW Offshore Wind Farm | 2 MW Gas Power Station | Key Takeaway |
|---|---|---|---|
| **Total Project Area** | **80 to 140 acres** | **0.4 to 2 acres** | Wind spans up to **200 times more total area** than gas power station. |

A conventional thermal power station may occupy only a few square kilometres while generating thousands of megawatts of continuous electricity. In contrast, offshore wind developments require very large areas because energy is extracted from a diffuse and variable natural resource. The issue is therefore not simply the number of turbines, but the amount of space required to support them.

Birds, whales, fish and human activities do not interact with individual structures in isolation. They encounter an extensive industrial precinct distributed across vast areas of Bass Strait and operating continuously for approximately thirty years.

- **Scale matters.**
- **Space matters.**
- **Time matters.**
- **Uncertainty matters.**
- **Place matters.**
- **Inheritance matters.**

Environmental systems respond not only to the intensity of change, but also to its duration and spatial extent. Consequently, the cumulative effects of industrial developments occupying vast areas should not be underestimated simply because they are difficult to measure.

## 7. Cumulative Impacts & Time

Environmental assessments should not consider projects in isolation. A development that may appear acceptable on its own can produce very different outcomes when assessed alongside adjacent projects operating simultaneously over several decades.

One of the most challenging aspects of environmental assessment is understanding the cumulative effects that may arise from multiple offshore wind developments within the Gippsland Renewable Energy Zone. Equally important, but often overlooked, is the factor of time. These projects are expected to operate for approximately thirty years, meaning that even small annual impacts may accumulate and become significant over the lifetime of the developments.

**Counterargument**
Assessment of individual projects may underestimate the combined effects of multiple offshore wind farms concentrated within the same region. Impacts that are considered negligible in isolation may become material when several projects operate simultaneously and when those impacts persist for decades.

For migratory birds and marine mammals, it is the cumulative effect of additional mortality, habitat displacement and altered migration pathways over time that is of greatest concern. Species already under pressure from climate change, habitat loss and other human activities may be particularly vulnerable to incremental impacts that are difficult to detect in the short term.

Importantly, some consequences may not become apparent for many years. Once populations decline or ecological thresholds are exceeded, recovery may be slow or impossible. Consequently, the absence of immediate or observable effects should not be interpreted as evidence that long-term impacts will be insignificant.

**According To**
Government agencies and scientific institutions, recognise that multiple developments can produce outcomes that differ substantially from those predicted for individual projects. Cumulative impact assessment is a fundamental principle of environmental management.

The precautionary principle requires that uncertainty regarding long-term or cumulative impacts should not be used as a justification for proceeding with development where potentially irreversible environmental consequences may occur.

**Supporting Evidence**
The lower section of the Gippsland Renewable Energy Zone contains a concentration of offshore wind projects located in close proximity to one another. These include:

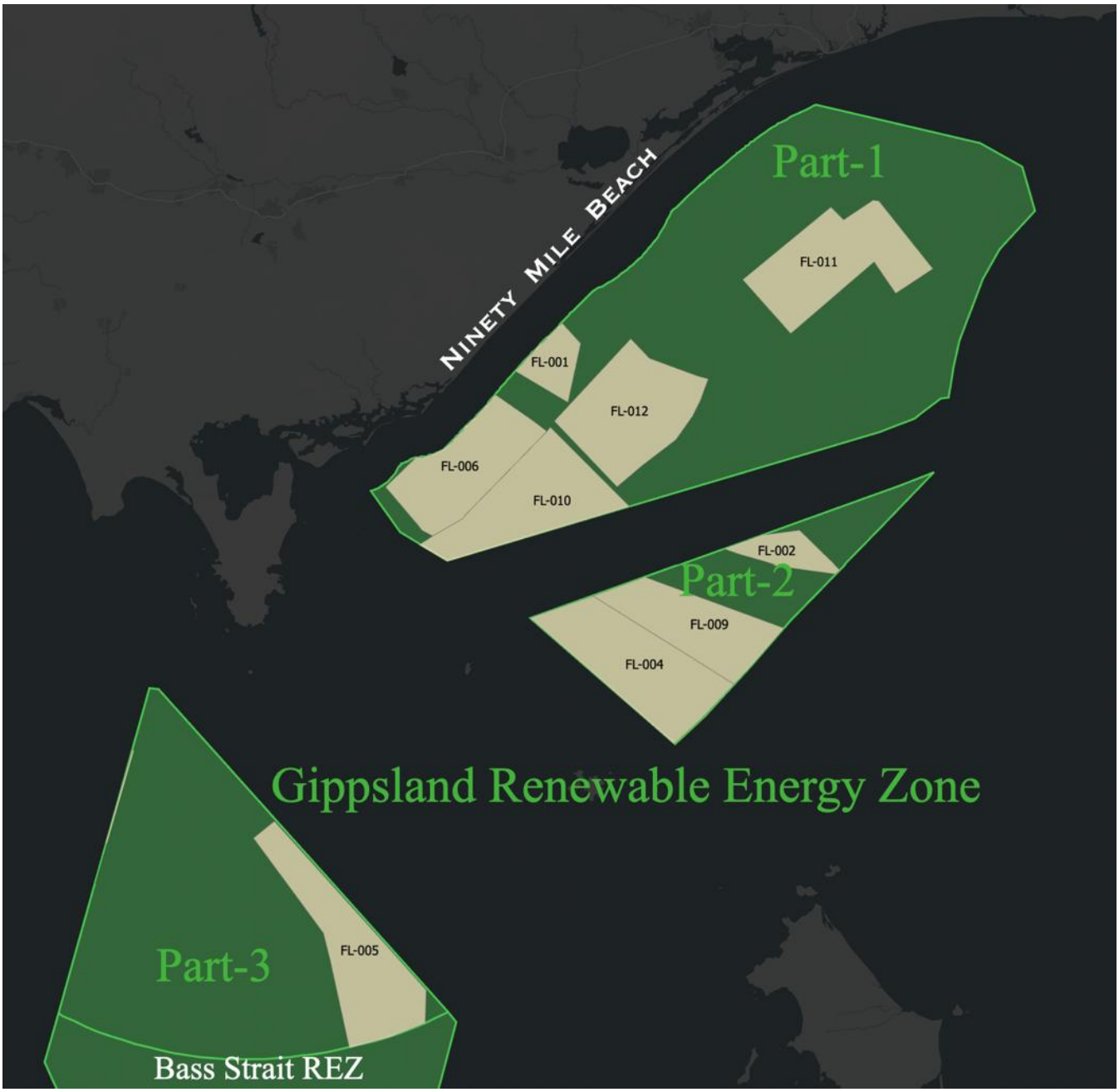
- Star of the South (FL-006)
- Great Eastern Offshore Wind (FL-010)
- Blue Mackerel (FL-001)
- Aurora Green (FL-012)

Additional projects may also be developed within the declared Renewable Energy Zone over time. While several feasibility licences have been surrendered, substantial areas remain available for future expansion.

# Call for Comment; Star of the South “Offshore Wind Farm”

The cumulative footprint of multiple offshore wind farms, operating continuously over several decades, raises legitimate questions regarding impacts on migratory birds, marine mammals, fisheries, marine protected areas and internationally significant wetlands associated with Corner Inlet and the Gippsland coast.

Where uncertainty exists and the consequences of error may be irreversible, the burden of proof should rest with the proponent to demonstrate that cumulative impacts can be avoided, rather than with the community to prove that harm will occur.




**Caption:** The vacant green areas of this declared area show a lot of room left for additional projects in the Gippsland REZ. Twelve Feasibility Licences were originally issued. NOTE; Projects FL-003; FL-008; FL-009; have been abandoned.

# PART III

## LIVING SYSTEMS

### Birds, Whales and Ecological Pathways

8. Avian Flyways
9. Bird Curtailment
10. Aberdeen Offshore Wind Farm Example
11. Biologically Important Areas
12. List of BIA
13. Migratory Whales

## 8. Avian Flyways

The Gippsland coast and Bass Strait form part of the East Asian-Australasian Flyway (EAAF), which is one of the world's most important migratory bird corridors. Every year, millions of birds travel between breeding grounds in the Northern Hemisphere and feeding and resting habitats throughout Australia and New Zealand. Many species depend upon the internationally significant wetlands of Corner Inlet and the Gippsland Lakes to complete these migrations.

**They Say**
The Star of the South EIS states that Bass Strait is an important region for seabirds and that key shorebird habitats occur along the Gippsland coast. Surveys identified 35 seabird species within the project area, including albatrosses, gannets, gulls, terns and Little Penguins. Shorebird surveys along Ninety Mile Beach recorded 40 species, with the greatest concentrations occurring around McLoughlins Beach.

**Counterargument**
The significance of these findings should not be understated. The proposed project, together with adjacent offshore wind developments, would create an extensive offshore industrial complex located within the East Asian-Australasian Flyway. Assessment of risk should not be limited to direct collision mortality alone.

Large offshore wind developments may also create barrier effects, displacement from preferred habitats and increased energetic demands caused by altered migration routes. These impacts are inherently difficult to quantify and may accumulate over time, particularly where multiple projects operate simultaneously. Species already subject to population pressures may be especially vulnerable to even small increases in mortality or reductions in breeding success.

Importantly, the cumulative effects of several offshore wind projects operating within the Gippsland Renewable Energy Zone, over many decades remain uncertain. Where uncertainty exists and the consequences of error may be irreversible, a precautionary approach should prevail.

**According To**
The Australian Government report; *Impacts on Birds from Offshore Wind Farms in Australia* (Reid, Baker & Woehler, 2022) identifies four principal risks associated with offshore wind developments:

- **Direct collision mortality**
- **Displacement from preferred habitats**
- **Barrier effects that alter migration pathways**
- **Attraction to structures that may increase exposure to hazards**

The report cautions that focusing solely on collision mortality may underestimate the true impact on bird populations, because displacement and barrier effects can have significant consequences that are difficult to detect or quantify.

# Call for Comment; Star of the South “Offshore Wind Farm”

The West Gippsland Catchment Management Authority identifies Corner Inlet as one of Victoria's most important habitats for migratory shorebirds. Every spring, millions of birds travelling along the East Asian-Australasian Flyway depend upon the region's intertidal mudflats and seagrass meadows to rest and feed.

**Supporting Evidence**

The Gippsland Lakes Ramsar Site and Corner Inlet Ramsar Site, are internationally significant wetlands and important southern destinations within the East Asian-Australasian Flyway. Birds travelling distances of up to 20,000 kilometres depend upon these habitats to complete their migrations.

The close proximity of multiple offshore wind developments to these internationally recognised ecosystems raises legitimate questions, regarding cumulative impacts and the potential for disruption of migratory pathways. Once migration patterns are altered or populations decline, recovery may be slow or impossible particularly for threatened species with low reproductive rates.

Where scientific uncertainty remains and irreversible consequences are possible, the burden of proof should rest with the proponent to demonstrate that impacts can be avoided, rather than with the community to prove that harm will occur.


**CAPTION:** weather radar tracking of bird migration along the East Asian-Australasian Flyway.

## 9. Bird Curtailment

The Star of the South EIS proposes the use of bird detection and turbine curtailment systems as a key mitigation measure intended to reduce the risk of bird collisions. Such systems rely on radar, cameras and artificial intelligence to identify approaching birds and temporarily shut down turbines when necessary.

**They Say**
The EIS states that bird detection and curtailment technology can significantly reduce collision risk and forms an important component of the proposed mitigation strategy. Residual impacts are therefore considered acceptable following the implementation of these measures.

**Counterargument**
Bird curtailment systems should not be viewed as evidence that impacts can be eliminated. Rather, they represent an acknowledgement that collision risks exist and that mitigation measures may be required to reduce those risks.

The effectiveness of bird detection and curtailment technologies depends upon a range of factors, including weather conditions, species behaviour, flight altitude, visibility and the ability of radar and artificial intelligence systems to accurately identify birds approaching the turbines. Their performance under Australian offshore conditions and over the thirty-year operational life of the project remains largely unproven. Importantly, collision mortality represents only one component of the overall risk. Bird curtailment systems cannot address barrier effects, displacement from preferred habitats or increased energetic demands caused by altered migration pathways. Consequently, successful mitigation of collisions does not necessarily mean that overall impacts on bird populations have been avoided.

**According To**
Robin Radar Systems, a leading developer of avian radar technology, states that automatic shutdown systems are designed to reduce collision risks by detecting approaching birds and temporarily stopping turbines. However, the company acknowledges that these systems are intended to minimise risk rather than eliminate it entirely.

The Australian Government report; *Impacts on Birds from Offshore Wind Farms in Australia* (Reid, Baker & Woehler, 2022) identifies collision mortality, displacement, barrier effects and attraction to structures as the four principal pathways through which offshore wind developments may affect birds.
International experience demonstrates that bird curtailment systems continue to evolve and that their effectiveness can vary between species and locations. Long-term performance data remain limited, particularly for offshore developments and migratory species.

**Supporting Evidence**
The need for bird curtailment systems raises an important question. If impacts are genuinely insignificant, why are increasingly sophisticated radar, camera and artificial intelligence systems required to reduce collision risks? By their very existence, bird detection and curtailment systems acknowledge that risks are present and that turbine operation may need to be modified to avoid unacceptable impacts.

Furthermore, if these systems prove less effective than expected, the consequences may not become apparent for many years. Species with low reproductive rates, such as albatrosses and some migratory shorebirds, may be particularly vulnerable to small but persistent increases in mortality over the thirty-year life of the project.

To protect vulnerable species during peak bird migration periods, several European countries have implemented "bird curtailment" or **shut-down-on-demand (SDOD)** protocols for offshore wind farms. Instead of permanent shutdowns, operators reduce blade rotation to a near standstill (usually less than two rotations per minute) for a few hours when massive flocks pass through. This practice balances green energy production with ecological conservation, actively preventing lethal collisions and allowing birds to pass safely.

## 10. Aberdeen Offshore Wind Farm (example from the EIS)

The Star of the South EIS refers to the European Offshore Wind Deployment Centre (EOWDC), commonly known as the Aberdeen Offshore Wind Farm (pictured above), as an example demonstrating the effectiveness of bird monitoring and mitigation measures.

**They Say**
The EIS cites monitoring undertaken at the Aberdeen Offshore Wind Farm, concludes that observed bird collision rates were lower than initially predicted. This example is presented as evidence that offshore wind developments and bird populations can coexist and that mitigation measures are capable of reducing impacts.

**Counterargument**
While the Aberdeen experience provides useful information, caution should be exercised when applying its findings directly to the Gippsland coast and Bass Strait.

Environmental conditions, species composition, migration patterns and ecosystem characteristics differ substantially between Scotland and south-eastern Australia. Consequently, outcomes observed at Aberdeen should not be assumed to be representative of conditions within the East Asian-Australasian Flyway or the marine ecosystems of Bass Strait.

Importantly, Aberdeen consists of only eleven turbines and occupies a relatively small area when compared with the scale proposed for Star of the South. Direct comparisons between projects of vastly different size and complexity may therefore be limited.

**According To**
Monitoring at Aberdeen reported lower collision rates than some pre-construction models had predicted. However, researchers noted that **uncertainties remained** and that conclusions were influenced by assumptions regarding bird behaviour and avoidance rates.

The Australian Government report; *Impacts on Birds from Offshore Wind Farms in Australia* (Reid, Baker & Woehler, 2022) notes that international experience provides valuable insights, but also highlights the limited understanding of how offshore wind developments may affect Australian species and ecosystems.

**Supporting Evidence**
The European Offshore Wind Deployment Centre (Aberdeen project) comprises eleven turbines covering a relatively modest area. In contrast, Star of the South proposes up to 147 turbines with tip heights reaching 350 metres, together with offshore substations and associated infrastructure. Additional projects within the Gippsland Renewable Energy Zone may further increase the cumulative footprint.

The issue is therefore not whether an eleven-turbine development in Scotland produced lower-than-expected collision rates. The question is whether results obtained from a relatively small project can be confidently extrapolated to a large-scale offshore industrial precinct operating within the East Asian-Australasian Flyway for approximately thirty years.

# Call for Comment; Star of the South “Offshore Wind Farm”

## Scale matters. Time matters. Space matters.

A small number of turbines occupying a limited area may not produce the same outcomes as hundreds of turbines distributed across vast areas of Bass Strait and operating continuously for decades. Scientific uncertainty should favour caution rather than assumptions.


**Supporting Evidence;** it’s not surprising that there were no collisions recorded in this study. Image above and below clearly shows the insignificant scale of this project that is 3km offshore.

Overall height of the Vestas V164 turbines used in this project is approximately 200metres, using 2 × 8.8 MW & 9 × 8.4 MW units, just eleven turbines in total.

In comparison the Star of the South developers Southerly Ten, plan to use 147 turbines that are 15MW output and up to 350metres tall.

## 11. Biologically Important Areas

The waters of Bass Strait and the Gippsland coast are not empty or biologically uniform. They support a diverse range of marine species and contain habitats that have been identified by the Australian Government as Biologically Important Areas (BIAs) for several protected whale species.

**They Say**
The Star of the South EIS acknowledges that the project area overlaps with Biologically Important Areas associated with southern right whales and pygmy blue whales. Surveys undertaken for the project recorded numerous marine mammal species, and the assessment concludes that residual impacts are expected to be low, following the implementation of mitigation measures.

**Counterargument**
The presence of recognised Biologically Important Areas demonstrates that these waters perform critical ecological functions for protected species. Such areas have been identified because they provide habitat used for migration, feeding, resting, calving or other important life-history functions.

While direct impacts may be difficult to quantify, the long-term consequences of introducing multiple offshore wind developments into these habitats remain uncertain. Acoustic disturbance, increased vessel traffic, underwater noise and the cumulative effects of several projects operating simultaneously over decades may alter habitat use or behaviour in ways that are not immediately apparent.
Importantly, the absence of observed impacts during relatively short-term studies should not be interpreted as evidence that long-term consequences will be insignificant. Some effects may only become apparent over many years or generations.

**According To**
The Australian Government describes Biologically Important Areas as habitats that support essential life-history functions for protected marine species. Southern right whales and pygmy blue whales migrate through Bass Strait and use parts of the Gippsland region during their annual movements.

These species are protected under the Environment Protection and Biodiversity Conservation Act 1999 and are subject to international conservation agreements. Their populations have recovered from historical whaling, but many remain vulnerable to cumulative pressures arising from human activities.

**Supporting Evidence**
The project area lies adjacent to internationally significant wetlands and overlaps recognised marine habitats used by protected whale species. The lower Gippsland Renewable Energy Zone contains multiple offshore wind projects that, collectively, represent a substantial increase in industrial activity across an area already recognised for its ecological importance.

The challenge is not simply determining whether a single project can coexist with marine mammals. Rather, it is understanding how multiple developments operating continuously for approximately thirty years may influence habitat use, migration patterns and ecosystem processes over time.

## 12. List of Biologically Important Areas (BIA)

Australia has both national and international obligations to protect migratory birds and threatened species. Once populations decline further, or migration pathways are disrupted, the damage may be irreversible. Listed below are the main areas that should be avoided and protected.

**Ninety Mile Beach Marine National Park:** Protects offshore sandy plains, which scientific surveys have revealed to have some of the highest levels of animal diversity in the sea ever recorded in 10 square meter intervals.

**Gippsland Lakes Ramsar Site**: This massive wetland system supports endangered **Burrunan dolphins**, over 80 waterbird species, and extensive seagrass beds. It serves as a vital feeding, spawning, and migratory pathway for native fish.

**East Gippsland Marine Park & Offshore Basin**: Plunging canyons and underwater cliffs draw massive aggregations of pygmy blue whales, humpback whales, and southern right whales for feeding and migration.

**The Skerries**: A chain of rocky islands that serves as a highly critical breeding and haul-out colony for the Australian fur seal.

**Gabo and Tullaburga Islands**: Protected offshore environments that act as key breeding sites for pelagic seabirds and shorebirds.

**Wilsons Promontory Marine National Park**: Victoria's largest marine sanctuary. It features exceptionally rich marine ecosystems used by migrating whales and nesting seabirds.

**Corner Inlet**: Home to the southernmost global extent of mangroves and massive seagrass meadows that shelter threatened bird species.


**CAPTION;** the Star of the South project is just 10kilometres offshore with up to 147 wind turbines that can be between 260 to 350 metres tall. Also in close proximity is Wilsons Promontory and Beagle Marine Park.

## 13. Migratory Whales

Each year, the waters of Bass Strait and the Gippsland coast form part of one of nature's great migrations. Southern right whales, humpback whales and pygmy blue whales travel thousands of kilometres between feeding and breeding grounds, following pathways that have existed long before the arrival of modern industry.

**They Say**
The EIS acknowledges that the project area overlaps with Biologically Important Areas used by protected whale species and concludes that residual impacts are expected to be low following the implementation of mitigation measures and operational controls.

**Counterargument**
The presence of migrating whales within Bass Strait is not incidental. These waters provide habitat and migration corridors used by species protected under Australian and international conservation agreements. While direct impacts may be difficult to quantify, uncertainty remains regarding the long-term consequences of underwater noise, increased vessel activity and the cumulative effects of multiple offshore developments operating simultaneously over several decades.

Whales are highly dependent upon sound for communication, navigation and social behaviour. Consequently, changes to the acoustic environment may influence behaviour in ways that are difficult to observe and may only become apparent over long periods.
Importantly, the absence of immediate or visible impacts should not be interpreted as evidence that long-term consequences are insignificant.

**According To**
The Australian Government identifies Biologically Important Areas within Bass Strait for southern right whales and pygmy blue whales. These species are protected under the Environment Protection and Biodiversity Conservation Act 1999 and international agreements designed to conserve migratory species.

Marine scientists recognise that whales rely heavily upon acoustic cues and that underwater noise generated by vessels and construction activities has the potential to alter behaviour. Scientific understanding continues to evolve, particularly regarding cumulative and long-term effects.

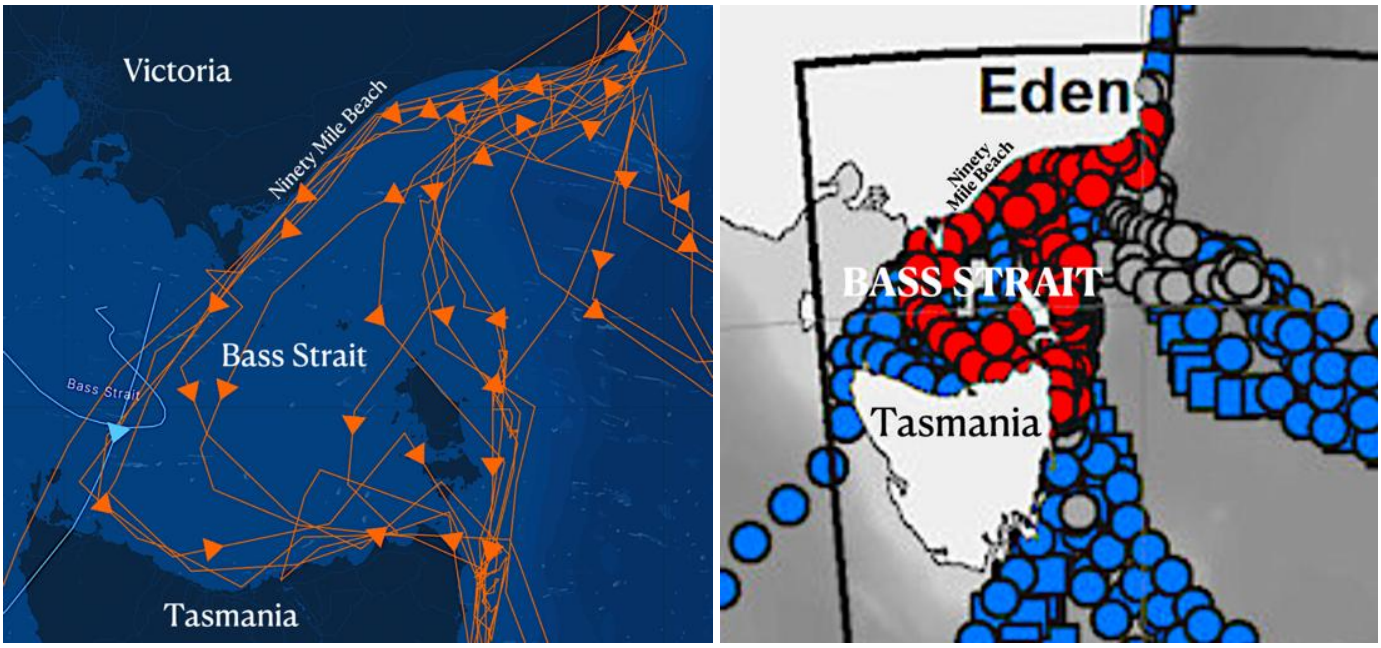
**Supporting Evidence**
Whales have recovered from the devastation of commercial whaling through decades of international conservation efforts. Their return to Australian waters represents one of the great successes of marine conservation.

The question is not simply whether whales can avoid individual structures or tolerate short-term disturbances. The more important question is whether multiple offshore wind developments occupying extensive areas of Bass Strait and operating continuously for approximately thirty years may influence migration pathways, habitat use and behaviour in ways that remain poorly understood.

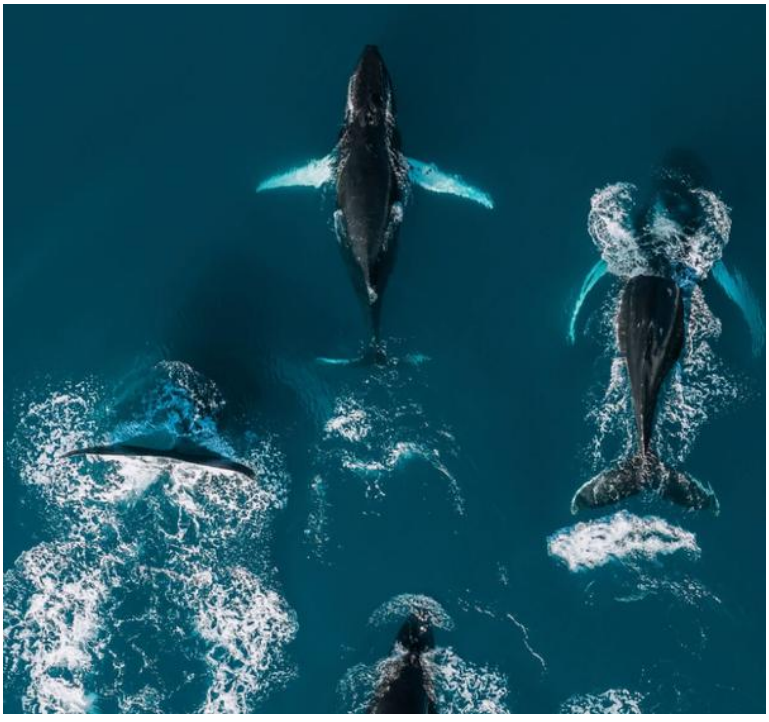
# Call for Comment; Star of the South "Offshore Wind Farm"

Migration itself represents time and place. These animals return to the same waters' generation after generation, following pathways established over thousands of years. Once altered, such behaviours may not easily be restored.

Where uncertainty exists and the consequences of error may be irreversible, the burden of proof should rest with the proponent to demonstrate that these migratory pathways and biologically important habitats can be protected, rather than with the community to prove that harm will occur.




**CAPTION:** Two different studies showing Satellite tracked humpback whales traveling close to Ninety Mile Beach.



**Caption;** migrating humpback whales.

# PART IV

## PHYSICAL SYSTEMS

### Persistent Influences Acting Across Time and Space

14. Wind Deficit
15. Sediment Transport
16. Benthic Habitats

## 14. Wind Deficit

Modern offshore wind farms extract energy from the atmosphere. As wind passes through the turbines, kinetic energy is converted into electricity, creating areas of reduced wind speed and atmospheric disturbance commonly referred to as wind wakes or wind deficits.

**They Say**
The EIS concludes that changes to wind patterns caused by the project are expected to be minor and that no mitigation measures are required. The assessment considers residual impacts to be negligible.

**Counterargument**
The absence of proposed mitigation measures should not be interpreted as evidence that impacts are impossible. Rather, it reflects the current limitations in understanding the long-term consequences of large offshore wind developments on atmospheric and oceanic processes.

Modern offshore wind projects occupy vast areas and extract energy continuously over many decades. As turbine size and project footprints increase, so too does the scale of their interaction with the atmosphere and marine environment. While wind deficits may appear small on an annual basis, their cumulative effects over time and across multiple projects remain uncertain.
Importantly, uncertainty should not be confused with evidence that impacts are insignificant.

**According To**
International studies have demonstrated that offshore wind farms create wake effects extending well beyond the boundaries of individual projects. Researchers have observed changes in wind speed, atmospheric mixing and sea surface conditions downwind of large developments.

Studies published in *Nature* and *Frontiers* have reported that wind farm wakes can extend for tens of kilometres and may influence ocean mixing processes, sea surface temperatures and sediment transport. Scientists continue to investigate the significance of these effects and their implications for marine ecosystems.

**Supporting Evidence**
The Gippsland Renewable Energy Zone contains multiple offshore wind developments, with the potential for cumulative wake effects over extensive areas of Bass Strait.

Environmental systems respond not only to the intensity of change, but also to scale, duration and spatial extent. Small alterations occurring continuously over approximately thirty years and across hundreds of square kilometres may produce consequences that are difficult to predict using relatively short-term studies. The conclusion that no mitigation measures are required should therefore be treated with caution. The absence of mitigation may simply reflect an absence of proven solutions rather than evidence that impacts are negligible.

The figure illustrates how the size and capacity of wind turbines have evolved over the past decade. The largest turbines currently have a capacity of 15 MW, but turbine sizes are expected to reach capacities of 30 MW, with heights of 400 meters. Larger blades create a bigger spinning circle (swept area). This circle aligns with where many seabirds travel.

## 15. Sediment Transport

Sediment transport is a natural process driven by wind, waves, tides and ocean currents. These processes shape coastlines, maintain beaches and influence the health of marine ecosystems. Even relatively small changes to these processes can produce consequences that may only become apparent over long periods.

**They Say**
The EIS concludes that impacts on sediment transport and coastal processes are expected to be negligible and that no mitigation measures are required. Residual risks are considered low following construction.

**Counterargument**
The conclusion that no mitigation measures are required should not be interpreted as evidence that impacts are impossible. Rather, it may reflect the limited understanding of how large offshore developments interact with oceanographic processes over long periods and across extensive areas.

The proposed project consists of up to 147 turbines, offshore substations and associated infrastructure. Multiple projects within the Gippsland Renewable Energy Zone would further increase the scale and spatial extent of seabed disturbance and physical structures interacting with waves and currents.
Sediment transport is inherently dynamic and influenced by numerous environmental variables. Consequently, long-term effects may be difficult to predict and may not become apparent until many years after construction.

**According To**
International research has demonstrated that offshore wind farms are capable of influencing ocean mixing, wave patterns and sediment dynamics. Studies published by Helmholtz-Zentrum Hereon and in *Frontiers* have identified measurable changes to hydrodynamic processes associated with large offshore wind developments. Researchers continue to investigate the significance of these changes and their potential implications for marine ecosystems and coastal processes. Scientific understanding in this field continues to evolve.

**Supporting Evidence**
Sediment transport is not simply a question of seabed disturbance during construction. The interaction between turbine foundations, ocean currents, waves and atmospheric processes may continue throughout the operational life of the project.

Environmental systems respond to scale, spatial extent and time. Small changes occurring continuously over approximately thirty years and across multiple offshore developments may produce cumulative effects that are difficult to detect in the short term.
Importantly, the absence of mitigation measures does not necessarily demonstrate that impacts are insignificant. It may simply indicate that practical mitigation options are limited or that long-term consequences remain uncertain.

Once changes to sediment transport and coastal processes become apparent, restoration may prove difficult or impossible. This is particularly relevant to dynamic environments such as Ninety Mile Beach and the Gippsland coastline, where natural processes operate over large areas and long timeframes.

# Call for Comment; Star of the South “Offshore Wind Farm”

**Visual Evidence;** The foundation of offshore wind turbines has a larger impact on the marine environment than previously thought. They change the mixing of the water far beyond their own location, as model simulations by researchers at the Helmholtz-Zentrum Hereon have now shown. Their results were published in the scientific journal *Frontiers*. Another effect of the turbulence is a reduced current speed downstream, that is, in the direction of the tidal current, which is decisive for sediment transport.

**CAPTION;** turbid or tidal wakes extending several kilometres behind each wind turbine.

**NOAA Report**

Sean A. Hayes, PhD Chief of Protected Species NOAA NEFSC said “*Unlike vessel traffic and noise, which can be mitigated to some extent, oceanographic impacts from installed and operating turbines cannot be mitigated for the 30-year lifespan of the project, unless they are decommissioned*”.

## 16. Benthic Habitats

The seabed beneath Bass Strait supports a diverse range of benthic communities that play a fundamental role in maintaining marine ecosystem health. Although largely unseen, these habitats provide food, shelter and nursery areas for numerous species and contribute to nutrient cycling and ecological productivity.

**They say** the 147 turbines will be spaced around one kilometre apart with up to 5-substations inside the array and multiple export cables connecting the project to the Giffard substation.

**Counterargument**
The effects of offshore wind developments are often considered in terms of visible species such as birds and whales. However, benthic habitats represent the foundation upon which many marine ecosystems depend. Construction activities, cable installation, foundation placement and alterations to sediment dynamics have the potential to affect seabed communities both directly and indirectly. While some impacts may be localised, the cumulative effects of multiple projects operating over several decades remain uncertain.

**Supporting Evidence**
Benthic ecosystems are inherently linked to ocean currents, sediment transport and water quality. Consequently, changes to one component of the marine environment may influence others in ways that are difficult to predict and may only become apparent over long periods.
Importantly, recovery times for benthic communities can vary considerably. Some habitats may recover relatively quickly, while others may require decades or may not return to their original condition.

Scale matters.
Space matters.
Time matters.
Uncertainty matters.
Place matters.
Inheritance matters.

Environmental systems do not respond to single events, but to persistent influences acting across time and space. Consequently, the absence of immediate impacts should not be interpreted as evidence that long-term consequences will be insignificant.

**Seabed Trenching**
Before developers can begin pile driving and laying the cables, they must first remove all of the boulders in the area and scrape away a wide roadway on the seafloor. This allows the trenching machine to operate unobstructed.

Such activities may substantially disturb benthic habitats and displace species that depend upon seabed communities, including spawning grounds used by fish and crustaceans.

# PART V

## HUMAN SYSTEMS

### Communities, Industries and Public Infrastructure

8. Fishing (Commercial and Recreational)
9. Tourism and Visual Amenity
10. Radar Interference

## 17. Fishing (commercial and recreational)

Commercial and recreational fishing have formed an important part of the Gippsland region's economy, culture and identity for generations. Bass Strait supports a diverse range of fisheries and recreational activities that contribute to local communities and provide social and economic benefits extending well beyond the immediate coastline.

**They Say**
The EIS concludes that impacts on commercial and recreational fishing can be managed through consultation, coexistence measures and ongoing stakeholder engagement. Residual impacts are considered acceptable following mitigation and management strategies.

**Counterargument**
The introduction of large-scale offshore infrastructure into areas that have historically supported fishing activity represents a significant change to the marine environment and to the communities that depend upon them. While coexistence may be achievable in some circumstances, uncertainty remains regarding the cumulative effects of multiple offshore wind developments operating continuously over several decades. Changes to access, navigation, fish behaviour, habitat use and commercial viability may occur gradually and may not become fully apparent until many years after construction.

Importantly, fisheries are dynamic systems influenced by environmental conditions, species abundance and human activity. Consequently, separating the effects of offshore wind developments from other factors may prove difficult, particularly where impacts are incremental and cumulative.

**According To**
International experience has shown mixed outcomes regarding interactions between offshore wind developments and fisheries. Some studies suggest that artificial reef effects may provide benefits for certain species, while others report concerns relating to displacement, exclusion zones, changes in fishing patterns and increased operating costs.

Scientific understanding continues to evolve, and no long-term Australian experience currently exists for offshore wind developments operating at the scale proposed within Bass Strait.

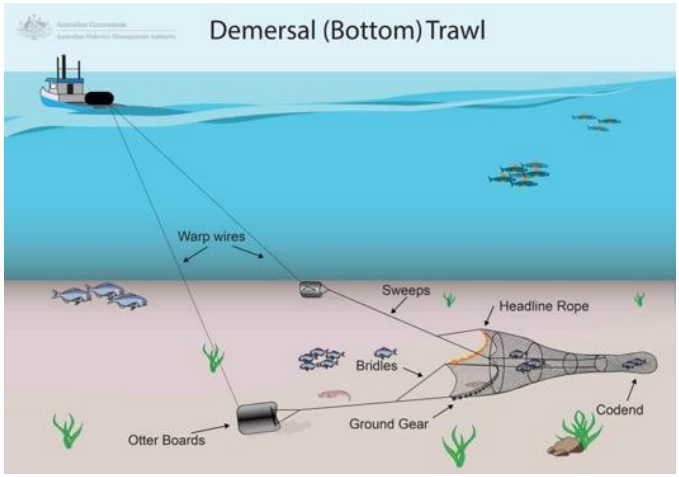
**Supporting Evidence**
Commercial fishers and recreational anglers possess generations of local knowledge regarding species distribution, seasonal movements and productive fishing grounds. Such knowledge represents an important resource that should not be discounted simply because it may not be fully captured within scientific studies.

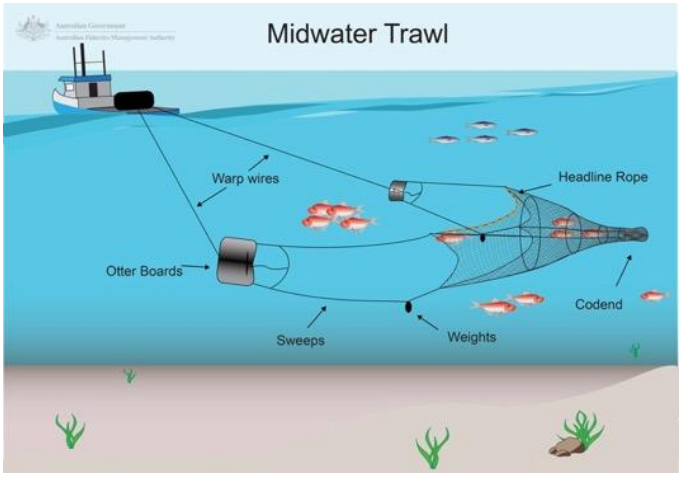
The lower Gippsland Renewable Energy Zone contains multiple projects occupying extensive areas of Bass Strait. The cumulative footprint of turbines, cables, substations and vessel activity may influence both access and marine ecosystems over approximately thirty years.

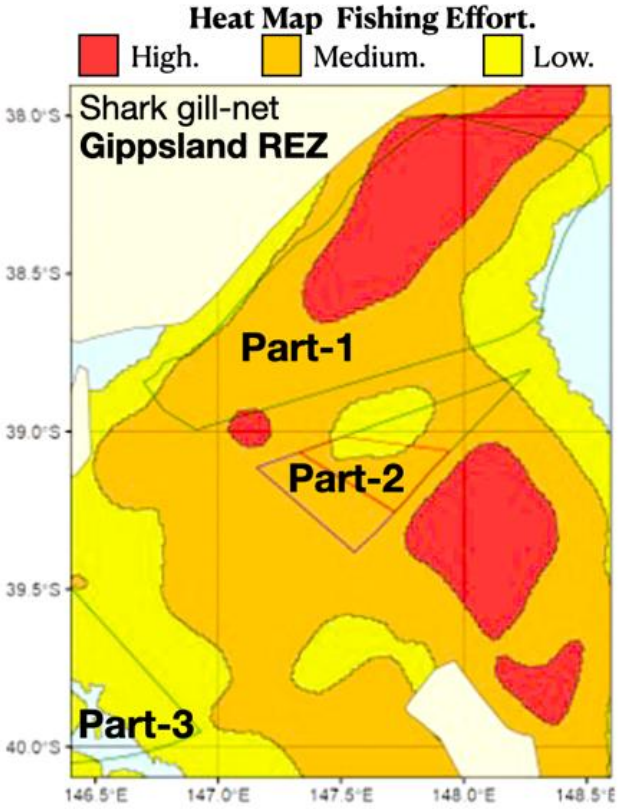
The challenge is not simply whether fishing can continue around a single project. The more important question is whether commercial and recreational fisheries can coexist with several large-scale developments occupying vast areas of Bass Strait over multiple decades.

# Call for Comment; Star of the South “Offshore Wind Farm”

**Scale matters. Space matters. Time matters. Uncertainty matters.**
Industries and communities that have developed over generations should not be expected to demonstrate that harm will occur before their concerns are considered. Where uncertainty exists and the consequences of error may be irreversible, the burden of proof should rest with the proponent to demonstrate that environmental, economic and social values can be protected, rather than with the community to prove that they cannot.




The offshore waters along the Gippsland coast are primary grounds for both commercial and recreational fishing.

The massive underwater sand patches off Ninety Mile Beach are teeming with sand crabs, which are a favourite food for gummy sharks.

The lower wester quarter of Part-1 REZ in the image left is the site of the proposed Star of the South project.

Commercial fishing for gummy shark of the Gippsland coast is a highly regulated and sustainable industry**.**

Fish caught by this sector is supplied to local markets as the classic fish-and-chips staple known as flake.

## 18. Tourism and Visual Amenity

The Gippsland coast, Ninety Mile Beach and surrounding communities are recognised for their natural beauty, open horizons and relatively undeveloped coastal landscapes. These attributes contribute to the region's identity and support tourism, recreation and local businesses.

**They Say**
The EIS concludes that visual impacts will be limited by distance from shore and that tourism impacts are expected to be negligible. The project is also expected to provide economic benefits through investment and employment opportunities.

**Counterargument**
Visual amenity and tourism values are inherently difficult to quantify. However, their subjective nature does not diminish their importance.
People are attracted to the Gippsland coast because of its natural character, expansive seascapes and sense of remoteness. These qualities contribute to the visitor experience and form part of the social and economic fabric of the region. Changes to these values may not be easily measured, but they should not be dismissed simply because they are difficult to express in financial terms.

Importantly, perceptions of landscape change vary between individuals and communities. What one person regards as acceptable may be considered undesirable by another. Consequently, claims that visual impacts are negligible should be treated with caution.

**According To**
Studies published in *Landscape and Urban Planning* have demonstrated that public attitudes towards wind turbines and landscape change are influenced by proximity, setting and personal values. Researchers have found that visual responses are subjective and can vary considerably among individuals and communities. Tourism authorities and local governments recognise that the natural landscapes of Gippsland and Ninety Mile Beach represent important assets supporting recreation, visitation and regional identity.

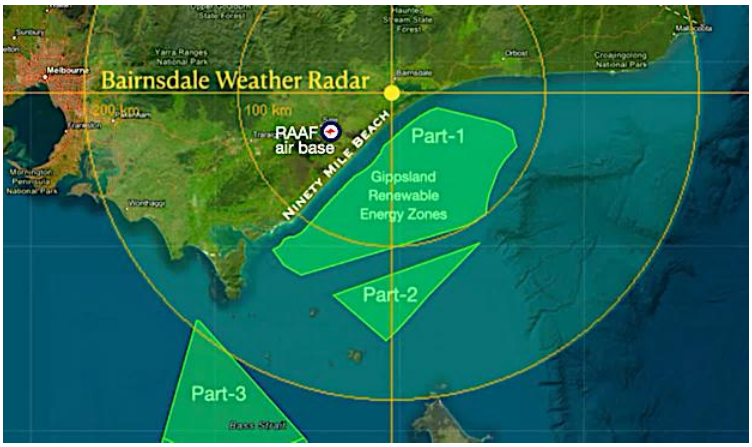
**Supporting Evidence**
Tourism and visual amenity involve more than economics. They reflect a sense of place and the relationship between communities and the landscapes they value. The issue is not simply whether turbines can be seen from shore. Rather, it is whether industrial developments occupying extensive areas of Bass Strait may alter the character and identity of a coastline that has remained largely unchanged for generations.

Unlike infrastructure that can be removed or relocated, changes to the character of landscapes and seascapes may influence communities and visitor perceptions for decades. Such impacts are difficult to reverse and may not become fully apparent until long after development has commenced. Below is the developer's artist impression of the proposed "Star of the South" wind farm 31km away from the village or township of Seaspray. Project is just 10 kilometres offshore of the southern townships of Woodside Beach & McLoughlins Beach:

**Star of the South** is Australia's most advanced proposed offshore wind project, located in the Bass Strait off the Gippsland coast of Victoria. It features a maximum power capacity of 2.2 GW (Southerly Ten). **Caption;** Star of the South offshore wind farm site (FL-006) is adjacent to the Corner Inlet Ramsar Site.

## 19. Radar Interference

Modern radar systems provide essential services for aviation safety, marine navigation, weather forecasting and emergency management. These systems play a critical role in protecting lives and property and are relied upon by communities, emergency services and government agencies.




**They Say**

The EIS concludes that potential impacts on radar systems can be managed through consultation with relevant authorities and the implementation of mitigation measures. Residual risks are considered acceptable.

**Counterargument**

Large rotating wind turbine blades are known to interact with radar signals and have the potential to create interference, clutter and signal distortion. While mitigation measures continue to evolve, the effectiveness of these solutions depends upon the characteristics of individual radar systems and environmental conditions. Importantly, radar systems are designed to detect and monitor atmospheric conditions, vessels and aircraft. Even relatively small reductions in performance or accuracy may have consequences extending beyond the boundaries of the project itself.

The challenge is not simply whether interference can be reduced, but whether the long-term reliability of critical systems can be maintained throughout the operational life of multiple offshore wind developments.

**According To**

The Australian Bureau of Meteorology has previously expressed concerns regarding the effects of offshore wind developments on weather radar systems. International experience has demonstrated that wind turbines can produce clutter and interference capable of affecting the interpretation of meteorological data. Researchers and radar specialists continue to develop mitigation technologies; however, scientific and operational understanding continues to evolve. No Australian offshore wind developments currently exist at the scale proposed within Bass Strait.

**Supporting Evidence**

Weather forecasting, marine navigation and aviation safety rely upon systems that communities often take for granted. Their importance becomes most apparent during emergencies and severe weather events.

The issue is not simply whether radar interference can be detected or compensated for under normal conditions. The more important question is whether multiple offshore developments operating continuously over approximately thirty years may influence the reliability of systems relied upon during the most demanding and critical circumstances.

The absence of immediate problems should not be interpreted as evidence that risks are insignificant. Nor should the existence of mitigation measures be assumed to guarantee that all consequences have been eliminated. Precaution is warranted where long-term consequences remain unresolved.

# PART VI

## STEWARDSHIP

### Governance and Risk

20. Knowledge Gaps and Adaptive Management
21. The Precautionary Principle
22. Conclusion
23. Final Reflection

## 20. Knowledge Gaps and Adaptive Management

Environmental assessments are necessarily based upon the information available at the time they are undertaken. However, ecosystems are complex, and scientific understanding continues to evolve. Consequently, uncertainty and knowledge gaps are an unavoidable part of environmental decision-making, particularly for developments of unprecedented scale and duration.

**They Say**
The EIS acknowledges a number of knowledge gaps and proposes adaptive management as a mechanism for addressing uncertainty. Monitoring programs, mitigation measures and ongoing review processes are intended to identify unforeseen impacts and allow management responses to be adjusted over time. Residual risks are therefore considered acceptable.

**Counterargument**
Adaptive management should not be viewed as a substitute for knowledge that does not yet exist. While monitoring and management programs are important, they are inherently reactive rather than preventative. Their effectiveness depends upon impacts being detected before irreversible changes occur and upon practical mitigation measures being available once problems are identified.

For some environmental processes, such as changes to migration pathways, ecosystem interactions, oceanographic conditions or long-term population declines, impacts may emerge slowly and may not become apparent for many years. By the time adverse effects are recognised, opportunities for prevention may have been lost. Importantly, adaptive management cannot guarantee that solutions will exist for every unforeseen consequence. Monitoring alone does not eliminate uncertainty.

**According To**
Environmental scientists and regulatory agencies recognise that adaptive management is most effective when uncertainties are relatively small and when impacts are reversible. Where ecological thresholds, cumulative effects or long-term ecosystem responses remain poorly understood, adaptive management may have limitations. International experience demonstrates that many environmental effects only become evident after extended periods of operation. Scientific understanding continues to evolve, particularly regarding cumulative impacts associated with large offshore wind developments.

**Supporting Evidence**
The Gippsland Offshore Renewable Energy Zone represents a new form of industrial development within Australian waters. No Australian experience currently exists with multiple offshore wind projects operating simultaneously over several decades.

Environmental systems do not always respond immediately to disturbance. Small changes may accumulate gradually until thresholds are exceeded, after which recovery may be difficult, slow or impossible.

Adaptive management is valuable, but it should not become a justification for proceeding first and understanding the consequences later. Where important questions remain unresolved, caution should prevail over assumptions.

## 21. The Precautionary Principle

The Precautionary Principle recognises that scientific uncertainty should not be used as a reason for postponing measures designed to prevent environmental degradation where there are threats of serious or irreversible harm. It is a principle embedded within Australian environmental policy and widely recognised internationally.

**They Say**
The EIS concludes that residual impacts associated with the Star of the South project are acceptable following the implementation of mitigation measures, monitoring programs and adaptive management strategies. Remaining uncertainties are considered manageable.

**Counterargument**
The existence of uncertainty does not automatically imply that development should not proceed. However, where uncertainties involve potentially irreversible consequences affecting ecosystems, protected species and community values, caution becomes a responsibility rather than an obstacle to progress. Many conclusions contained within the EIS rely upon modelling, assumptions and mitigation measures whose long-term effectiveness under Australian offshore conditions remains unproven. Knowledge gaps are acknowledged throughout the assessment, particularly in relation to cumulative impacts, ecosystem responses and the interaction of multiple projects operating simultaneously over several decades.

Importantly, the absence of observable impacts today should not be interpreted as evidence that long-term consequences are insignificant. Environmental systems often respond gradually, and some effects may only become apparent over generations.

**According To**
The Intergovernmental Agreement on the Environment and the Environment Protection and Biodiversity Conservation Act 1999 recognise the Precautionary Principle as a fundamental element of environmental decision-making. The principle states that a lack of full scientific certainty should not be used as a reason for postponing measures to prevent serious or irreversible environmental damage. This principle does not require proof that harm will occur. Rather, it recognises that where the consequences of error may be irreversible, prudence should guide decision-making.

**Supporting Evidence**
Progress and environmental stewardship need not be opposing objectives. However, where uncertainty exists and the consequences of error may be irreversible, prudence requires that the burden of proof rest with the proponent to demonstrate that environmental, social and economic values can be protected.

The issue before us is not whether renewable energy should be pursued. It is whether this proposal, in this location, and at this scale, has demonstrated with sufficient confidence that the inheritance entrusted to future generations will not be diminished.

**Where uncertainty remains and the consequences of error may be irreversible, precaution is not an obstacle to progress. It is a responsibility.**

## 22. Conclusion

No individual issue examined in this submission necessarily determines the outcome. Rather, it is the cumulative interaction between scale, space, time and uncertainty that warrants a precautionary approach. Throughout this submission, six recurring themes emerge:

**Scale**
**Space**
**Time**
**Uncertainty**
**Place**
**Inheritance.**

Individually, many of the impacts associated with offshore wind development may appear manageable. However, environmental systems do not respond to individual events in isolation. They respond to persistent influences acting across time and space. Consequently, the cumulative interaction of these factors over approximately thirty years and across vast areas of Bass Strait cannot be assumed to be insignificant simply because they are difficult to measure.

Many conclusions contained within the Environmental Impact Statement rely upon assumptions, modelling and mitigation measures whose effectiveness under Australian offshore conditions remains uncertain. In several areas, acknowledged knowledge gaps persist. The absence of immediate or observable impacts should not be interpreted as evidence that long-term consequences will be insignificant.

Where uncertainty exists and the consequences of error may be irreversible, the burden of proof should rest with the proponent to demonstrate that impacts can be avoided, rather than with the community to prove that harm will occur. The issue before us is not merely what we choose to build, but what we choose to inherit and what we choose to pass on.

Migratory birds have followed the East Asian–Australasian Flyway for thousands of years. Whales have returned to these waters’ generation after generation. Fisheries have supported coastal communities for decades. The landscapes and seascapes of Gippsland have shaped the identity and character of the region and contribute to its environmental, cultural and economic value.

These are not simply resources to be managed. They represent an inheritance entrusted to the present generation. Progress and environmental stewardship need not be opposing objectives. However, where scientific uncertainty remains and the consequences of error may be irreversible, caution is not an obstacle to progress, it is a responsibility.

Accordingly, approval should not be granted until the outstanding uncertainties, cumulative impacts and long-term consequences have been independently assessed and demonstrated to be acceptable.

## 23. Final Reflection

**The issue before us is not merely what we choose to build, but what we choose to inherit and what we choose to pass on.**

*Scale • Space • Time • Uncertainty • Place • Inheritance*

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