



**Australian Government**

**Geoscience Australia**

27 August 2024

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**Re: Inquiry into the Offshore wind industry consultation process**

Dear Secretary

Thank you for the opportunity to make a submission to the Environment and Communications References Committee's Inquiry into the offshore wind industry consultation process.

I am pleased to submit a response from Geoscience Australia outlining our involvement in the consultation process and our ongoing partnership with the Department of Climate Change, Energy, the Environment and Water.

Yours sincerely

Dr James Johnson  
Chief Executive Officer

# Submission for Inquiry into the Offshore Wind Industry Consultation Process

Geoscience Australia

28 August 2024

## Introduction

Geoscience Australia is Australia's national geoscience organisation. Our work covers the Australian landmass, marine jurisdiction and external territories. We deliver advice and data of enduring value that helps government, industry, and communities to address challenges and enhance opportunities facing Australia now and into the future.

Geoscience Australia's work plays a fundamental role in supporting the development of Australia's offshore wind industry. As the trusted source of information on Australia's Earth sciences, we provide data, information, services, and advice that support government, industry and community decision-making.

Our timely, relevant and accessible information supports improved understanding by government and policy decision makers, regulators, industry and communities regarding the varied and possibly competing interests in, and adjacent to, offshore renewable energy areas.

Geoscience Australia has undertaken offshore scientific activities for decades as part of precompetitive offshore energy programs and research collaborations with the Australian marine science community. This work has generated significant offshore legacy data holdings and sample collections of enduring value. Using this information, Geoscience Australia supports the Government's regulatory and policy frameworks for offshore petroleum and greenhouse gas storage, environmental protection, and more recently, offshore wind. Today, Geoscience Australia is able to use this legacy information to assess the suitability of potential areas for offshore energy infrastructure, giving consideration to the surrounding marine environment. This submission outlines Geoscience Australia's marine geoscience and geospatial activities and capabilities that have and are contributing to the Australian Government consultation process. With regards to the Terms of Reference, our work supports the consultation process through:

(b) community engagement within the existing Australian Government offshore wind industry regulatory and legislative frameworks

- updates to the Australian Marine Spatial Information System (AMSIS) to support Ministerial announcements about proposed and declared offshore renewable energy areas.
- participation in community engagement sessions in Southern Ocean (Vic), Illawarra (NSW), Bass Strait (Tas) and Indian Ocean (WA) to demonstrate digital decision-support tools.

(d) the impact of the offshore wind industry on marine life and marine environments in Australian waters, including strategies for impact minimisation and management.

- delivery of marine geoscience information through digital portals.

## Community engagement

Geoscience Australia has supported the Department of Climate Change, Energy, the Environment and Water (DCCEEW) with the offshore wind industry consultation process by:

- providing publicly accessible information and tools through the Australian Marine Spatial Information System (AMSIS)<sup>1</sup>
- participating in public consultation sessions.

AMSIS is the Australian Government's digital mapping and decision support tool providing access and visualisation of official marine information in Australia's marine jurisdiction. AMSIS contains spatial information on the geography, use, rights and restrictions within Australia's marine jurisdiction, including maritime boundaries, marine and coastal infrastructure, energy resources, fishing, shipping lanes, physical geography and marine parks. In total, AMSIS exposes 134 data layers from over 11 government authorities and regulators. Designed to support effective marine planning, management, administration and regulation of Australia's marine

<sup>1</sup> [www.ga.gov.au/AMSIS](http://www.ga.gov.au/AMSIS)

jurisdiction, AMSIS provides a mechanism to visualise overlapping interests and competing uses, and helps users understand and manage interactions between activities and environmental values.

As an easy-to-use, publicly available platform, AMSIS enables community users to access official government information, improving transparency of government decision-making and increasing understanding and public awareness of the complexities and considerations in areas with competing interests.

Geoscience Australia, in collaboration with Department of Climate Change, Energy, the Environment and Water, supported the Australian Government's offshore renewable energy consultation process by making specific and timely updates to the AMSIS platform. This included creating a dedicated Offshore Renewable Energy tab on the AMSIS home page (Figure 1) and within this tab, dedicated pages were created with pre-built maps for each of the proposed and declared offshore renewable energy areas.

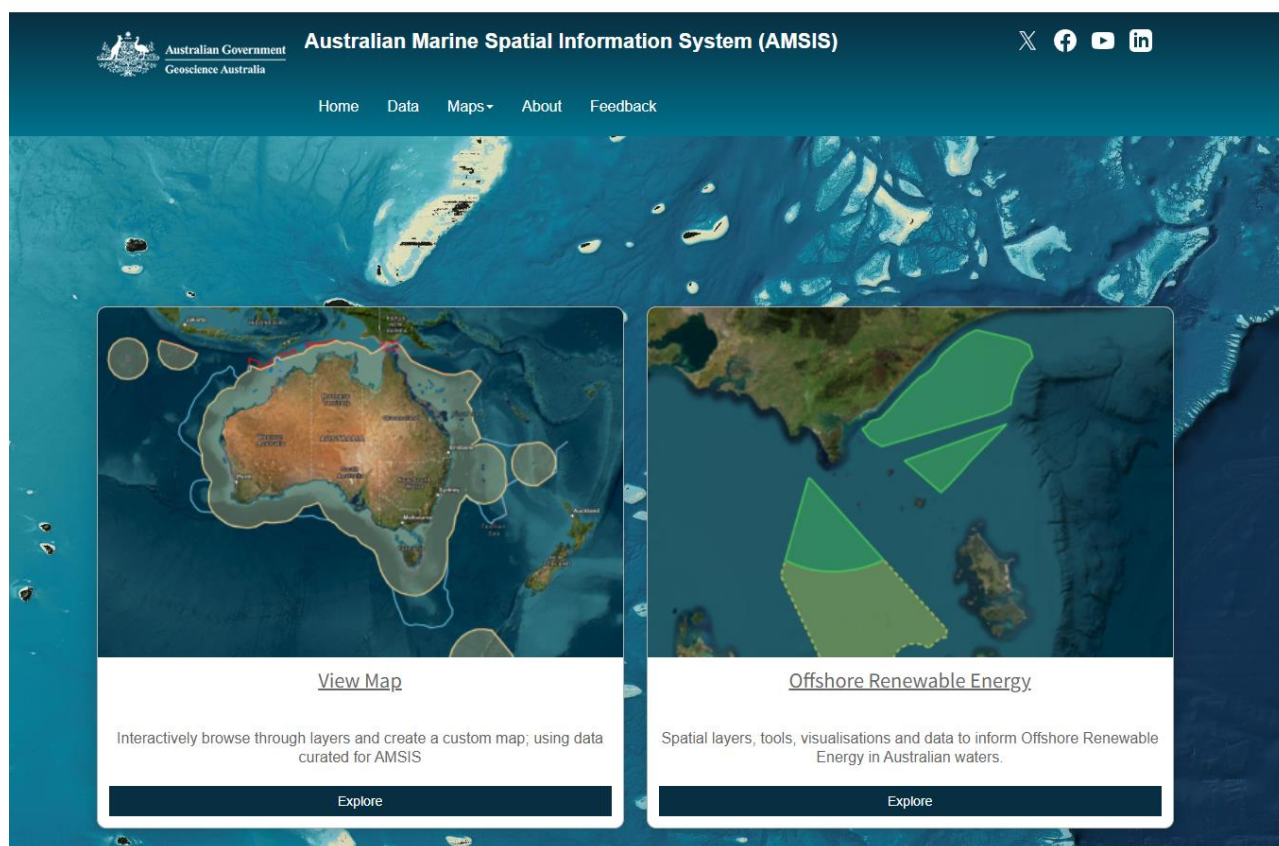


Figure 1: AMSIS home page showing Offshore Renewable Energy tab ([www.ga.gov.au/AM SIS](http://www.ga.gov.au/AM SIS))

Geoscience Australia updated this information at the time of each announcement on proposed or declared areas for offshore renewable energy by the Minister for Climate Change and Energy. Links to the AMSIS portal have also been added to the DCCEE Offshore Wind webpages for each of the areas at the time of the Ministerial announcements.<sup>2</sup> By working collaboratively with DCCEE, Geoscience Australia has ensured that official marine information is available to communities to explore as soon as the areas are made public, further improving transparency and supporting community understanding of the activities and values in each area.

AM SIS has proven to be an essential source of official information to support community consultation, with over 10,000 users accessing the Offshore Renewable Energy pages in 2023-24. Analytics show a spike in views of the renewables pages to coincide with Ministerial announcements for proposed and declared areas (Figure 2), demonstrating the importance of the timely updates made by Geoscience Australia.

<sup>2</sup> For example: <https://www.dcccew.gov.au/energy/renewable/offshore-wind/areas/gippsland>

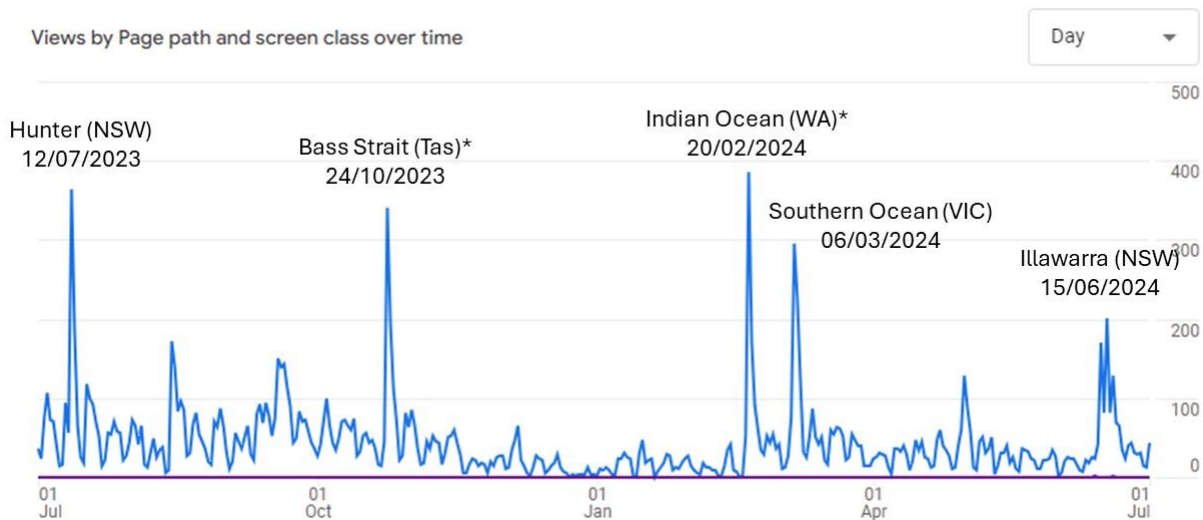


Figure 2: Views of the AMSIS renewables page during 2023-24 and timing of declarations for offshore renewable energy areas (\* indicates announcement of proposed areas). Source: Google Analytics

Geoscience Australia’s marine spatial experts also participated in the Initial Consultation and Regional Zoning community drop-in sessions for 4 of the proposed areas (Southern Ocean, Bass Strait, Illawarra and Indian Ocean) alongside representatives from DCCEEW and the Offshore Infrastructure Regulator (OIR) from the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA).

At the sessions, Geoscience Australia officials demonstrated the AMSIS portal to attendees, using simple visualisations to convey the complexities in balancing competing interests in each proposed area. This proved a useful communication tool for enhancing public engagement, often diffusing tensions and increasing understanding and awareness of the complexities and considerations in the planning phase for offshore wind.

The engagement process emphasised the importance of clear, consistent communication and providing timely and accurate information to all stakeholders. Critically, AMSIS was used in both the government and community consultation process, thereby improving transparency and building trust by providing public access to the same official information used by Government in the decision-making process.

## Impacts on marine environments

Geoscience Australia contributes to building the strong scientific evidence base needed to underpin effective decision making and ensure offshore developments are socially and ecologically sustainable. With expertise in marine geoscience, Geoscience Australia maps and characterises the seabed and sub-seabed environment around Australia and delivers this information to support decisions on the sustainable use of the marine environment.

Geoscience Australia creates marine geoscience products, including maps of bathymetry, seabed features (geomorphology), and offshore geology to improve understanding of marine environments and suitability for offshore infrastructure and development. These maps depict the depth, shape and composition of the seabed and sub-seabed, and can be used to identify processes such as sediment transport and mass movement. Our mapping:

- helps identify and sustainably manage living and non-living resources
- supports monitoring and conservation of vulnerable marine habitats and ecosystems
- contributes to better understanding of natural hazards, including submarine landslides, and geohazards associated with offshore energy infrastructure such as wind turbines

- supports scientific research in oceanography, geology, and marine biology.

Geoscience Australia provides marine geoscience information and advice to DCCEEW as part of the government consultation process for offshore wind, including on potential impacts of offshore wind developments on the marine environment. Further, we provide robust baseline information by applying a nationally consistent approach to support effective assessment, monitoring and management of potential impacts.

The seabed is important for determining potential environmental impacts from offshore wind infrastructure. For example, bathymetry data is a key input to oceanographic modelling, and combined with seabed composition information, can be used to identify areas where seabed disturbance may cause large sediment plumes that have the potential to impact biological communities. Further, seabed features can be used as abiotic surrogates of biodiversity, and aid identification of valuable habitats for endangered or commercially valuable species (i.e. biodiversity hotspots).

Offshore wind turbines are developed as either fixed bottom support structures in shallow water areas (generally up to 70 m water depth) or floating turbines in deeper water areas. Fixed bottom wind turbines are often anchored into the seabed using either gravity base foundations, monopile foundations or jacket foundations depending on the water depths. Monopile and jacket foundations require penetrating the sub-surface to install the supporting piles, which may expose them to sub-surface geohazards during installation and operational phases. The Star of the South offshore wind project off the south coast of Gippsland in eastern Victoria, for example, proposes to drill boreholes up to 80 m below the seabed using a jack-up platform to install the fixed bottom foundations.

Potential geohazards associated with the installation and potentially operational phases of fixed bottom wind turbines include:

- shallow faults
- soft sediment areas
- slumps
- shallow gas (thermogenic migrating from deep basin areas or shallow biogenic)
- boreholes, e.g. both active and plugged petroleum wells.

Our geoscientific studies and supporting data sets will also provide important information for offshore wind project developments through:

- identifying areas where geohazard, geological, environmental and resource conflict risks can be minimised for the installation and long-term operation of infrastructure associated with offshore wind (such as the foundations, wind turbines and underwater power transmission cables)
- identifying offshore areas with potential for migrated thermogenic gas which may result in shallow gas hazards beneath the seabed
- identifying offshore areas where there is potential for an influx of fresh groundwater through aquifers beneath the seabed which connect back to onshore areas and could impact regional aquifer pressure if penetrated
- providing sub-surface data that can be used to identify shallow faults and slumps, and/or potential risks of these reactivating/occurring in the target areas
- identifying the location and status of boreholes
- identifying areas of potential resource conflict with offshore wind (e.g. areas suitable for greenhouse gas storage, gas exploration, marine protected areas), and assessing the potential impacts of co-located resource use, such as greenhouse gas storage beneath an offshore wind farm

- providing public access to open-file data, studies and information for target areas, as well as fundamental information about the geology and geography of the areas and data collection and appraisal techniques.

Geoscience Australia's marine geoscience data is made publicly available via online portals, including AMSIS, the AusSeabed Marine Data Portal,<sup>3</sup> the Digital Atlas of Australia,<sup>4</sup> or through Geoscience Australia's Data Portal<sup>5</sup> and product catalogue.<sup>6</sup> Further, Geoscience Australia also delivers digital data layers from other government sources through these platforms, including biologically important areas and key ecological features. This enables communities to access to timely, relevant and accurate marine information to aid decision making about the potential impacts of offshore wind developments.

Geoscience Australia has made several products to improve communication of our information with public audiences. This includes 3D flythrough visualisations of the seabed, e.g. in Bass Strait.<sup>7</sup> These types of communication products, whilst not specifically developed for the community consultation process for offshore wind, are a powerful tool for informing communities about the marine environment.

Geoscience Australia also contributes to efforts by the research community to address the challenges presented by the new offshore renewable energy industry. As a partner in the National Environmental Science Program (NESP), Geoscience Australia has contributed to Project 3.3 - Guiding the sustainable development of offshore renewables and other emerging marine industries in Australia.<sup>8</sup> This project has established a data inventory of existing environmental and cultural data and best-practice monitoring standards to support efficient and legally compliant regulatory decision-making for offshore wind developments.

The Australian Government's landmark Resourcing Australia's Prosperity (RAP) initiative, a 35-year, \$3.4 billion investment in precompetitive geoscience, to be delivered by Geoscience Australia will re-examine and identify potential areas for energy infrastructure in Australia's offshore waters. Geoscience Australia will utilise its vast array of legacy offshore data and will seek to add new seabed mapping data to identify these areas and better understand the opportunities to support Australia's commitment to a net zero economy.

## Opportunities

Geoscience Australia has found that delivering timely, relevant and accurate data and information through publicly available, interactive and user-friendly digital platforms is hugely beneficial to effective community engagement. Providing an online platform such as AMSIS, targeted toward non-expert users so they can access official, comprehensive and timely information about proposed government decisions and potential impacts, improves transparency and trust in the work of government.

Through the public consultation sessions for offshore wind, we have observed several common challenges, including public confusion over the rationale for the proposed regions, the need for contextual information, negative public perception of the process, distribution of mis- and dis-information, and consultation fatigue.

The use of data delivery and spatial tools, such as AMSIS, has helped address some of these challenges by providing interactive mapping and visualisation tools to clarify and contextualise the proposed areas for offshore renewable development. These allow for information to be streamlined, targeted, and accessible to communities, enhancing overall engagement and understanding.

Delivery of RAP will further augment Geoscience Australia's offshore activities and knowledge, providing the platform to accelerate investment and growth in Australia's offshore wind industry. It will allow for new insights into Australia's offshore areas through re-analysis and integration of legacy and new data using modern techniques. RAP will enable evidence-based decisions to be made that are fit for purpose and reflect

<sup>3</sup> <https://portal.ga.gov.au/persona/marine>

<sup>4</sup> <https://digital.atlas.gov.au/>

<sup>5</sup> <https://portal.ga.gov.au/>

<sup>6</sup> <https://ecat.ga.gov.au/geonetwork/srv/eng/catalog.search#/home>

<sup>7</sup> [https://www.dropbox.com/s/n3piroha8actbsw/BassStrait\\_LandBridge\\_GeoscienceAustralia.mp4?e=1&dl=0](https://www.dropbox.com/s/n3piroha8actbsw/BassStrait_LandBridge_GeoscienceAustralia.mp4?e=1&dl=0)

<sup>8</sup> <https://www.nespmarinecoastal.edu.au/project/3-3/>

Australian community expectations of robust environment, social and governance arrangements, and will ultimately provide communities with an understanding and acceptance of this emerging energy sector.

We recommend Geoscience Australia and DCCEEW continue to work closely together to enable effective and informed community consultation processes. Leveraging data delivery and decision-support tools will be important to alleviate confusion, diffuse tensions and increase overall community understanding and awareness of the complexities of the marine environment during the development of Australia's offshore wind industry.