



Australian Marine Sciences Association Inc.

ABN: 35 279 182 164
Email: president@amsa.asn.au
Website: www.amsa.asn.au

Michael Marren
Senior External Relations Advisor Santos Ltd
100 St Georges Terrace PERTH WA 6000

By email: Michael.Marren@santos.com

Dear Mr Marren

Re: Barossa Offshore Gas Project: Development Drilling & Completions – Stakeholder consultation

The Australian Marine Sciences Association Inc. (AMSA) is Australia's peak professional body for marine scientists from all disciplines and for over 50 years has promoted all aspects of marine science in Australia. Including "dissemination of knowledge about the marine environment to the wider public."¹ It also has a long history of providing expert scientific advice to Federal and State/Territory governments, industry and other key marine environmental stakeholders, on a wide range of scientific and environmental issues and activities in the marine environment (including environmental impact assessments, marine pollution, Marine Parks, marine threatened species, marine biodiversity and climate change). All of our Submissions are publicly available here: <https://www.amsa.asn.au/submissions>.

The AMSA Northern Territory Branch is based in Darwin and in recent years has been active in providing technical input to the management of the North Marine Parks Network in northern Australia, as well as providing formal submissions on a range on marine science, marine environmental, Indigenous sea country and marine industry-related issues.

We confirm that the following formal comments are provided on behalf of the AMSA-NT Branch – in response to your email outlining stakeholder consultation in relation to development drilling and completions activities the subject of a draft Environment Plan (Drilling EP) as part of the Barossa Offshore Gas Project (Project).

1. Confirmation of AMSA-NT as "relevant persons"

As noted in the Information Brochure (p.4), Santos is obliged to undertake consultation on the Drilling EP with "relevant persons", as defined by clause 11A(1) of the Environment Regulations. Which defines "relevant persons" to include:

- (d) "a person or organisation whose functions, interests or activities may be affected by the activities to be carried out under the environment plan";
- (e) "any other person or organisation that the titleholder considers relevant."

AMSA-NT confirms its request for formal recognition and consultation as "relevant persons" by Santos on any draft Environment Plans (EPs) in relation to the Barossa Offshore Gas Project.

2. Improved Industry Practice

AMSA-NT notes that the oil-gas industry and its regulator, NOPSEMA, focus on developing and assessing 'activity-based' EPs for all exploration and development activities. In accord with the Commonwealth's policy shift for a Strategic Environmental Impact Assessment approach for large-scale projects and development areas, AMSA-NT believes this 'activity-based' approach is inadequate for assessing and addressing the potential cumulative impacts and interactions of a range of individual activities. With impacts potentially operating at multiple spatial scales (local, national, and international) and in combination with other concurrent stressors, we believe greater consideration and oversight is

¹<https://www.amsa.asn.au/mission-objectives-and-values>

necessary. We believe this to be an opportunity for Santos to lead a best practice approach to address potentially complex impacts and implement the sustainability principles incorporated into the EPBC Act (as per the Convention for Biological Diversity).

RECOMMENDATION 1: Consider complexities of cumulative pressures, multiple stressors, and various spatial and temporal scales in EP to lead industry best practice.

3. Environmental Assessment

AMSA-NT considers that the Proposed Consultation and 4-page Information Brochure currently does not provide sufficient information for AMSA-NT (with its recognized areas of marine science, environment and marine resources interests) to provide appropriate technical input and make an 'informed assessment' of the possible and potential negative consequences of the drilling activities - particularly under the "anticipated worst case oil spill scenario" outlined in relation to the activities (page 3)². The Information Brochure does not outline the external context, "acceptable levels" or thresholds of environmental impact and risk, risk mitigation and impact avoidance, and implementation of appropriate control measures.

RECOMMENDATION 2: Expand or supplement the 4-page Information Brochure with information upon which AMSA-NT can provide expert comment, including external context, thresholds of acceptable impact and risk, risk mitigation strategies, and implementation of control measures.

4. AMSA-NT Request for Further Information

Having regard to the requirements of cl.11A(2) of the Environment Regulations, and the EP Content Guidance, Consultation Guideline and EP Decision Guideline, AMSA-NT were not able to adequately assess the potential impacts to the marine environment. For AMSA-NT and the broader public to be able to engage with and provide comment on the project the following information should be made public:

- The draft Drilling EP.

If the draft Drilling EP is not yet prepared, then information, including any reports, analyses, assessments, modelling and/or other documents, in relation to the potential environmental impacts and risks of activities, including in relation to a 'Worst Case Oil Spill'. These include:

- a) A description of the environment that may be affected by the activities.
- b) The potential extent and area of the area that may be affected by the activities.
- c) The potential environmental impacts and risks of the activities.
- d) The potential impacts and risks to any species listed under the *Environment Protection and Biodiversity Conservation Act 1999*³, including the Olive Ridley Turtle⁴, Pygmy Blue Whale and Bryde's Whale⁵.

² "A loss of well control could result in a well blowout and release of Barossa reservoir fluids, which includes natural gas and condensate" (Worst Case Oil Spill).

³ An EPBC Protected Matters search identified 18 listed threatened fauna species and 29 listed migratory species (17 of which are also listed as threatened species) that may occur or have habitat in the area. This includes 4 threatened and 12 migratory cetaceans.

⁴ The Tiwi Islands' Western coastline is recognised as a biologically important inter-nesting area for Olive Ridley turtles (*Lepidochelys olivacea*) and Green turtles (*Chelonia mydas*). A 10-year study of all turtle species on the Tiwi Islands found that the highest number of recordings occur along the southwestern corner of Bathurst Island (Cape Fourcroy), directly opposite the closest point to the proposed Gas export pipeline (Chatto & Baker 2008). Critical information is also required on the feeding grounds and also prey of this important cultural species, to assess potential impacts.

⁵ The (endangered) migratory Pygmy Blue Whale (*Balaenoptera musculus brevicauda*), and Bryde's Whale (*Balaenoptera brydei*) are most likely to occur in the project area. Significantly, both species were recorded in the project area during noise monitoring undertaken for the project in 2014/2015 (Day et al. 2019). The Barossa Offshore Gas Project is also in close proximity to the Timor Trough, one of the three major outflow

- e) The potential environmental impacts and risks to key fisheries in the region that may be affected by the activities⁶ - including the NT Spanish Mackerel, Northern Prawn and Timor Reef and Demersal Fisheries, including research on potential risk and impacts to commercially important species (including Saddletail and Crimson Snapper), and potential impact mitigation strategies.
 - f) The potential impacts and risks of the activities on the habitats, ecosystems and conservation values of the Oceanic Shoals Marine Park and any other Marine Protected Area, significant marine ecosystem or key ecological features in the region.
 - g) The potential impacts and risks in relation to Tiwi Islands Sea Country and other areas of marine or terrestrial Aboriginal Cultural significance and/or heritage.
 - h) The total greenhouse gas emissions associated with the activities and the potential impacts and risks of the activities' greenhouse gas emissions in relation to global warming and climate change, including whether and how those emissions would fit within a carbon budget and emissions reduction scenarios aligned with the temperature goals of the Paris Agreement.
 - i) The proposed greenhouse gas emissions control measures, including details of any proposal for carbon capture and storage.
 - j) The potential cumulative impacts or risks considered in the context of existing and proposed developments and/or activities in the vicinity of the area.
 - k) The potential cumulative impacts of upstream and downstream activities associated with the Project as a whole, including transport of gas via undersea pipeline and onshore processing of gas at the Wickham Point LNG Facility.
- Information, including any reports, assessments and/or other documents that assess the potential international and transboundary environmental and social-ecological impacts and risks of activities, including in relation to a 'Worst Case Oil Spill'. These include:
 - a) Predictive and stochastic modelling studies on the potential area and nature of impact of any marine pollutants on the coastal and marine habitats and ecosystems of the 'semi-enclosed' Arafura-Timor Seas (ATS)⁷
 - b) Modelling studies on the potential socio-economic impacts of any marine pollutants on the livelihoods of coastal communities in the ATS, particularly small-scale fisheries, aquaculture and 'subsistence' coastal communities
 - c) Environmental risks and impacts on current and proposed MPAs, under the regional Arafura Timor Seas Marine Protected Areas System
 - d) Environmental risks and impacts and potential conflicts with existing marine protected species legislation, regulations and the objectives, activities and implementation of relevant management plans in the ATS
 - e) Environmental risks and impacts and potential conflicts with the objectives, activities and implementation of the proposed Arafura Timor Seas Regional Plan of Action for Sea Turtles

channels of the Indonesian Throughflow, and one of the most important 'marine megafauna migration corridors' in the Western Indo-Pacific. Surveys of the Timor Trough in 2007-2008 (conducted by ENI Australia) recorded up to 10-12 Pygmy Blue Whales a day (including mothers with small calves) passing through during the peak of their southern migration (Burton 2011).

⁶ AMSA-NT notes that there is currently a Senate enquiry into the 'Impact of Seismic Testing on Fisheries and the Marine Environment' to report by 14 May 2020. On 26 March 2020, the reporting date was extended from 14 May 2020 to the second sitting Wednesday of 2021. Further, the Australian Institute of Marine Science (AIMS) Shoals to Shore has also been examining the impacts of seismic testing on Pearl Oysters and Red Emperor in the Northwest bioregion. However, the program does not examine the impact of seismic testing on zooplankton populations (a major gap in understanding potential impacts) due to a lack of funding.

⁷ Situated in the Timor Sea, the Barossa Offshore Gas Project is currently not only located in a region with a controversial and unresolved seabed maritime boundary between Australia and Indonesia, but it is also located in waters legally defined as a 'semi-enclosed seas' under UNCLOS (Article 122) – which include, significantly, international responsibilities and obligations to cooperate with other bordering littoral nations (ie. Indonesia, Timor-Leste, Papua New Guinea) in understanding, protecting and managing the globally significant marine ecosystems, biodiversity and resources of these 'semi-enclosed seas' (Article 123).

- f) Potential risks and environmental and socio-economic impacts to known shared, straddling commercial fish stocks in the ATS
- Information, including any reports, analyses, assessments and/or other documents, that:
 - a) Demonstrates that the environmental impacts and risks of the activities will be reduced to as low as reasonably practicable.
 - b) Demonstrates that the environmental impacts and risks of the activities will be of an acceptable level.
 - c) Details the environmental performance outcomes, environmental performance standards and measurement criteria to be adopted in relation to the activities.
 - d) Details the implementation strategy and monitoring, recording and reporting arrangements in relation to the environmental impacts and risks of the activities.

RECOMMENDATION 3: Publicly release information related to potential environmental impacts and risks, including a 'Worst Case Oil Spill', as well as mitigation and avoidance strategies.

AMSA-NT looks forward to reviewing the information outlined above and the opportunity to provide technical comment on the Drilling EP enabling adequate consultation.

Yours Sincerely

A handwritten signature in cursive script, appearing to read 'K Edyvane', written in black ink.

Karen Edyvane, PhD

On behalf of Australian Marine Science Association (NT)