

Acceptance of Barossa Gas Export Pipeline Installation Environment Plan

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) provides the following statement of reasons for its decision to accept the Barossa Gas Export Pipeline Installation Environment Plan (EP), in accordance with regulation 10 of the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009.

Relevant terms

1. In this statement, the words and phrases have the following meaning:
 - 1.1. The *Offshore Petroleum and Greenhouse Gas Storage Act 2006* is referred to as the OPGGS Act.
 - 1.2. The National Offshore Petroleum Safety and Environmental Management Authority is referred to as NOPSEMA.
 - 1.3. The Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 are referred to as the Environment Regulations.
 - 1.4. Barossa Gas Export Pipeline Installation Environment Plan (BAA-100 0329, Revision 3, dated 7 February 2020) is referred to as the EP.
 - 1.5. The *Environment Protection and Biodiversity Conservation Act 1999* is referred to as the EPBC Act.
 - 1.6. ConocoPhillips Australia Barossa Pty Ltd is referred to as the titleholder, in accordance with regulation 9.
 - 1.7. The term 'petroleum activity' (as defined in regulation 4 of the Environment Regulations and hereafter referred to as the activity) means the installation of the Barossa Gas Export pipeline and support operations as described in section 3 of the EP.
 - 1.8. The term 'environment' means:
 - (a) ecosystems and their constituent parts, including people and communities; and
 - (b) natural and physical resources; and
 - (c) the qualities and characteristics of locations, places and areas; and
 - (d) the heritage value of places; and includes
 - (e) the social, economic and cultural features of the matters mentioned in paragraphs (a), (b), (c) and (d).
 - 1.9. The term 'environmental impact' means any change to the environment, whether adverse or beneficial, that wholly or partially results from an activity.
 - 1.10. The term 'control measure' means a system, an item of equipment, a person or a procedure, that is used as a basis for managing environmental impacts and environmental risks.
 - 1.11. The term 'environmental management system' includes the responsibilities, practices, processes and resources used to manage the environmental aspects of an activity.

- 1.12. The term 'environmental performance' means the performance of a titleholder in relation to the environmental performance outcomes and environmental performance standards mentioned in an environment plan.
- 1.13. The term 'relevant person' has the meaning provided under regulation 11A of the Environment Regulations.
- 1.14. The term 'environmental performance outcome' means a measurable level of performance required for the management of environmental aspects of an activity to ensure that environmental impacts and risks will be of an acceptable level.
- 1.15. The term 'environmental performance standard' means a statement of the performance required of a control measure.
- 1.16. The term 'operational area' is taken to be the operational area for the petroleum activity as defined in section 3.3 of the EP.

Decision

2. On 9 March 2020, NOPSEMA made the decision pursuant to regulation 10 of the Environment Regulations to accept the EP. In accordance with regulation 11 of the Environment Regulations NOPSEMA provided notice of its decision to the titleholder.
3. Acceptance of the EP permits the titleholder to undertake the activity described in the EP, which is the installation of a 262 km long gas pipeline in Commonwealth waters subject to meeting the requirements of the Offshore Petroleum and Greenhouse Gas Storage (Safety) Regulations 2009. The pipeline extends from the Barossa Gas Field, approximately 227 km north of the Northern Territory (NT) mainland, to a proposed tie-in point on the existing Bayu-Undan to Darwin pipeline, approximately 100 km north of the NT mainland.

Authority

4. The decision maker for acceptance of an EP under regulation 10 is the 'regulator'. Where the decision relates to a petroleum activity, the regulator is defined as NOPSEMA under regulation 4.
5. I, [REDACTED], was the responsible decision maker for this decision. I hold the position of the Manager, Assessment and Inspection – Drilling and Developments within NOPSEMA. I was empowered to make the decision pursuant to a valid instrument of delegation made by Stuart Smith, Chief Executive Officer (CEO) of NOPSEMA. Pursuant to subsection 666(2) of the OPGGS Act, anything done by the CEO in the name of NOPSEMA is taken to have been done by NOPSEMA.
6. A copy of the relevant instrument of delegation is available from NOPSEMA on request.
7. In the following sections of this Statement of Reasons, when I refer to NOPSEMA having made a request, or having regard to a matter, or similar phrasing, I am referring to a step that I took exercising delegated authority in making this decision. Where appropriate, in taking such steps I took advice from the assessment team within NOPSEMA.



The assessment process

8. NOPSEMA’s assessment team comprised of appropriately experienced environment technical specialists with expert knowledge in environmental and marine science relevant to offshore oil and gas activities and their associated impacts and risks. The assessment was scoped to examine higher order impacts and risks, with a general assessment of the whole EP completed and the following two detailed topic assessments of the EP content:
 - matters protected under Part 3 of the EPBC Act, focusing on:
 - acceptability of impacts/risks posed by the activity to marine turtles, and appropriateness of controls to manage those; and
 - acceptability of impacts posed by benthic disturbance, and appropriateness of controls to manage those,
 - consultation with relevant persons.
9. The EP was submitted to NOPSEMA for assessment on 2 August 2019. The assessment team completed a full assessment of the EP. The findings and conclusions of the general assessment and each topic assessment were evaluated together to form a view as to whether the EP, as a whole, met the criteria for acceptance.
10. At the conclusion of the assessment, the team made a recommendation to me (as the delegated decision-maker) that the EP met the criteria for acceptance under regulation 10A. For the reasons set out in this Statement of Reasons, I accepted that recommendation as detailed in the attached acceptance letter (Attachment 1).

Background

11. On 2 August 2019 the titleholder submitted the Barossa Gas Export Pipeline Installation Environment Plan (Revision 0) to NOPSEMA in accordance with regulation 9 of the Environment Regulations.
12. On 6 August 2019 NOPSEMA requested the titleholder to make changes to the submission under subregulation 9AC regarding completeness of the Barossa Gas Export Pipeline Installation Environment Plan (Revision 0).
13. On 7 August 2019 the titleholder provided a complete version of the Barossa Gas Export Pipeline Installation Environment Plan (Revision 1).
14. On 9 September 2019 NOPSEMA requested the titleholder to provide further written information under subregulation 9A(1) of the Environment Regulations that included the nature and scale of the activity, benthic habitat and seabed disturbance, impacts to the commonwealth marine area, impacts to marine turtles, planned discharges, light and noise emissions, consultation.
15. On 17 September 2019 NOPSEMA agreed to extend the timeframe for the titleholder to provide the requested information following a request by the titleholder, in accordance with subregulation 9A of the Environment Regulations.
16. On 31 October 2019 the titleholder provided the requested further written information which was incorporated into the Barossa Gas Export Pipeline Installation Environment Plan (Revision 2).

17. On 2 December 2019 NOPSEMA notified the titleholder that they were required to modify and resubmit the EP, as NOPSEMA was not reasonably satisfied that the EP met the acceptance criteria as set out in subregulation 10A of the Environment Regulations. A modified EP was required to address deficiencies including but not limited to the nature and scale of the activity, impacts to marine turtles, impacts to the Commonwealth marine area, benthic habitat and seabed disturbance, noise impacts and consultation.
18. On 16 December 2019 NOPSEMA agreed to extend the timeframe for the titleholder to provide the requested information following a request by the titleholder, in accordance with subregulation 9A of the Environment Regulations.
19. On 7 February 2020 the titleholder resubmitted the Barossa Gas Export Pipeline Installation Environment Plan (Revision 3) to NOPSEMA under subregulation 10(4) of the Environment Regulations.
20. On 9 March 2020 NOPSEMA accepted the EP in accordance with regulation 10. A notice of this decision was provided to the titleholder on 9 March 2020, in accordance with regulation 11 of the Environment Regulations.

Key materials considered in making the decision

21. In making this decision, NOPSEMA considered documents and information making up the EP submission in accordance with legislative requirements and NOPSEMA's assessment policies and procedures. The material that NOPSEMA had regard to in making this decision included:
 - Barossa Gas Export Pipeline Installation Environment Plan (BAA-100 0329, Revision 3, dated 7 February 2020);
 - Barossa Gas Export Pipeline Installation Oil Pollution Emergency Plan (BAA-100 0330, Revision 1, dated 31 October 2019);
 - Supporting Environment Plan documentation provided by the titleholder:
 - Barossa Pipelay Light Modelling, Pendoley Environmental, 11 February 2020;
 - ConocoPhillips Barossa Project – Potential Impacts of Pipeline Installation Activities on Marine Turtles - literature update, Pendoley Environmental, 5 July 2019;
 - Technical note - Assessment of survey equipment and positioning equipment for the Barossa Gas Export Pipeline Installation, Jasco Applied Sciences, 22 January 2020;
 - EPBC Act Protected Matters Reports (4 January 2020 & 20 March 2019); and
 - Sensitive Information provided in Appendix E;
 - Relevant published, peer-reviewed scientific literature, including the scientific literature cited in the EP;
 - The OPGGS Act;
 - The Environment Regulations;
 - NOPSEMA Environment plan assessment policies, guidance and guidelines (available at <https://www.nopsema.gov.au/environmental-management/environment-resources/>):

Policies

- PL0050 – Assessment – Revision 15, August 2019;
- PL1347 - Environment plan assessment – Revision 7, April 2019;

Guidelines

- GL1721 - Environment plan decision-making – Revision 6, November 2019;

Guidance Notes

- GN1344 - Environment plan content requirements – Revision 4, April 2019;
- GN1785 - Petroleum activities and Australian marine parks – Revision 0 – July 2018.
- NOPSEMA’s Environment plan assessment standard operating procedure (N-04750 - SOP1369) – Revision 14, 2019;
- Other relevant requirements:
 - Director of National Parks (2018), *Australian Marine Parks – North Marine Parks Network Management Plan*.
 - Department of Sustainability, Environment, Water, Population and Communities (2012), *Marine Bioregional Plan for the North Marine Region*.
 - Department of the Environment, Water, Heritage and the Arts (2013), *Matters of National Environmental Significance - Significant Impact Guidelines 1.1 - Environment Protection and Biodiversity Conservation Act 1999*.
 - Department of the Environment and Energy (2020), *National Light Pollution Guidelines for Wildlife: Including Marine Turtles, Seabirds and Migratory Shorebirds*
 - Department of the Environment and Energy (2017), *Recovery Plan for Marine Turtles in Australia*.
 - Relevant policies, plans of management, recovery plans, conservation advice and other guidance for matters protected under the EPBC Act, as well as other additional relevant scientific literature.
- Recorded findings of NOPSEMA’s assessment team regarding assessment of how the EP met the relevant criteria of the Environment Regulations.

Legislative framework

22. The Environment Regulations provide relevantly:

- 22.1. Subregulation 9(1) states that before commencing an activity, a titleholder must submit an environment plan for the activity to the Regulator.
- 22.2. Subregulation 9(2) states that an applicant for a petroleum access authority, petroleum special prospecting authority, pipeline licence, greenhouse gas search authority or greenhouse gas special authority:

- a. May submit an environment plan for an activity under the authority or licence to the Regulator; and
 - b. Is taken to be a titleholder for the purposes of this Division and Divisions 2.2A, 2.2B and 2.3.
- 22.3. Regulation 9AA states that within 5 business days after an environment plan is submitted to the Regulator under regulation 9, resubmitted in response to an invitation under regulation 9AC or resubmitted under subregulation 11C(2), the Regulator must decide provisionally whether the plan includes material apparently addressing all the provisions of Division 2.3 (Contents of an environment plan).
- 22.4. Regulation 9AB states that if the Regulator’s provisional decision under regulation 9AA is that the environment plan includes material apparently addressing all the provisions of Division 2.3 (Contents of an environment plan), the Regulator must publish on the Regulator’s website as soon as practicable:
 - a. the plan with the sensitive information part removed; and
 - b. the name of the titleholder who submitted the plan; and
 - c. a description of the activity or stage of the activity to which the plan relates; and
 - d. the location of the activity; and
 - e. a link or other reference to the place where the accepted offshore project proposal (if any) is published; and
 - f. details of the titleholder’s nominated liaison person for the activity.
- 22.5. Regulation 9AC states that if the Regulator’s provisional decision under regulation 9AA is that the environment plan does not include material apparently addressing all the provisions of Division 2.3 (Contents of an environment plan), the Regulator must give the titleholder who submitted the plan a written notice:
 - a. Identifying the provisions of that Division that appear not to be addressed by the plan; and
 - b. Inviting the titleholder to modify the environment plan and resubmit it to the Regulator.
- 22.6. Subregulation 9A(1) states that if a titleholder submits an environment plan, the Regulator may request the titleholder to provide further written information about any matter required by these Regulations to be included in an environment plan.
- 22.7. Subregulation 9A(3) states that if a titleholder receives a request and provides information requested by the Regulator within the period specified or within a longer period agreed to by the Regulator:
 - a) the information becomes part of the environment plan; and
 - b) the Regulator must have regard to the information as if it has been included in the submitted environment plan.
- 22.8. Paragraph 10(1)(a) states that if the Regulator is reasonably satisfied that the environment plan meets the criteria set out in regulation 10A, the Regulator must accept the environment plan.

- 22.9. Paragraph 10(1)(b) states that if the Regulator is not reasonably satisfied that the environment plan meets the criteria set out in Regulation 10A, the Regulator must give the titleholder notice in writing under subregulation 10(2).
- 22.10. Paragraph 10(1)(c) states that if the Regulator is unable to make a decision on the environment plan within the 30 day period, the Regulator must give the titleholder notice in writing and set out a proposed timetable for consideration of the plan.
- 22.11. Subregulation 10(2) states that a notice to a titleholder under this subregulation must:
- a) state that the Regulator is not reasonably satisfied that the environment plan submitted by the titleholder meets the criteria set out in regulation 10A; and
 - b) identify the criteria set out in regulation 10A about which the Regulator is not reasonably satisfied; and
 - c) set a date by which the titleholder may resubmit the plan.
- 22.12. Regulation 10A provides the criteria for acceptance of an environment plan and states that, for regulation 10, the criteria for acceptance of an environment plan are that the plan:
- a. is appropriate for the nature and scale of the activity; and
 - b. demonstrates that the environmental impacts and risks of the activity will be reduced to as low as reasonably practicable; and
 - c. demonstrates that the environmental impacts and risks of the activity will be of an acceptable level; and
 - d. provides for appropriate environmental performance outcomes, environmental performance standards and measurement criteria; and
 - e. includes an appropriate implementation strategy and monitoring, recording and reporting arrangements; and
 - f. does not involve the activity or part of the activity, other than arrangements for environmental monitoring or for responding to an emergency, being undertaken in any part of a declared World Heritage property within the meaning of the EPBC Act; and
 - g. demonstrates that: the titleholder has carried out the consultation required by Division 2.2A; and the measures (if any) that the titleholder has adopted, or proposes to adopt, because of the consultation are appropriate; and
 - h. complies with the Act and regulations.

Consideration and findings of material facts

23. Following an assessment of the EP undertaken in accordance with the Environment Regulations and NOPSEMA's assessment policies and procedures, NOPSEMA provides the following considerations and findings of material fact which contributed to the decision to accept the EP in the attached acceptance letter.

Environmental assessment – description of the petroleum activity

24. NOPSEMA considered the description of the activity in the EP and found that:

- A comprehensive description of the activity had been provided in the EP which was relevant for the consideration of environmental impacts and risks of the activity. Key aspects of the description included the following:
 - the activity described in the EP is the installation of the Barossa Gas Export pipeline and supporting subsea infrastructure and construction operations, located in Commonwealth waters off the coast of NT;
 - the pipeline extends from the Barossa Gas Field, located approximately 227 km north of NT mainland, to a proposed tie-in point on the existing Bayu-Undan to Darwin pipeline, approximately 100 km north of the NT mainland;
 - the activity will be undertaken using a pipelay vessel and support vessels, all equipped with dynamic positioning systems. Up to 15 vessels may be used during the activity;
 - a 500 m radius Petroleum Safety Zone (PSZ) will be imposed around the pipelay and construction vessels where support vessels engaged in the activity may be present; and
 - the location of the activity is clearly set out by diagrams, figures and coordinates depicting the Barossa Gas Export pipeline route, subsea infrastructure locations, operational area (a 3000m radius around the PLET locations and a 2000m buffer along the gas export pipeline route), and the environment that may be affected from unplanned activities.
- Information considered relevant for the consideration of environmental impacts and risks (such as the operational details of the activity and proposed timetable) was included in the EP, specifically that:
 - the gas export pipeline is described as being 262 km long with a 26-inch outer diameter
 - the EP describes the pipeline as traversing two zones of the Commonwealth Oceanic Shoals Marine Park, being a 30 km section of the Multiple Use Zone and 31.5 km through the Habitat Protection Zone
 - the EP describes elements of the activity overlapping with parts of areas identified as important to marine turtles
 - a statement in the EP that the proposed activity is planned to occur at any time between Q3 2021 and Q2 2023 with pre-lay survey activities commencing up to nine months earlier than pipeline installation
 - the activity duration, which is approximately nine months
 - hours of operation, which is 24 hours a day
 - that pipelay vessel will operate in a linear fashion moving at a nominal rate of 3 km/day as it lays the pipe
 - the water depths of the activity location, which vary between 33 m and 254 m
 - general details of the support vessels to be used for the activity; and

- a statement in the EP that confirms the activity or any part of the activity, including under emergency conditions will not be undertaken in any part of a declared World Heritage property within the meaning of the EPBC Act.

Environmental assessment – description of the environment that may be affected

25. NOPSEMA considered the description of the environment in section 4 of the EP that may be affected by the activity including relevant values and sensitivities and found that:

- The description includes the physical environment features and biological habitats, ecosystems and their constituent parts in the area that may be affected by the activity.
- Social, economic and cultural features of the environment relating to the Commonwealth marine area, Australian Marine Parks (in this case, the Oceanic Shoals Marine Park), reef protection areas, cultural and heritage values, defence areas, tourism and recreational activities, commercial shipping, Commonwealth and Territory managed commercial fisheries and petroleum industry activities, have been identified and described.
- Cultural and heritage environment features and values have been identified and described.
- The Department of the Environment and Energy’s Protected Matters Search tool was used by the titleholder to understand the presence of matters of national environmental significance in the environment that may be affected by the activity. The results of this search were that 22 listed threatened species, 43 listed migratory species within the meaning of the EPBC Act have been identified and described as being in the environment that may be affected by the activity.
- The qualities and characteristics and values and sensitivities of the north marine bioregion within the Commonwealth marine area have been identified and described, including by having regard to the Marine Bioregional Plan for the North Marine Region.
- Values of the Oceanic Shoals Marine Park have been identified and described with regard to the major conservation values identified in the North Marine Parks Network Management Plan (2018) and other relevant marine scientific research carried out in and around the Park.
- No threatened ecological communities, World Heritage Properties, National Heritage Places or Ramsar wetlands are within the area that may be affected by the activity.

Environmental assessment – requirements

26. NOPSEMA considered the description of requirements in the EP, including legislative requirements that apply to the activity and are relevant to the environmental management of the activity and found that:

- a suitable description of the relevant legislative requirements that apply to the activity including, but not limited to, relevant plans of management and recovery plans under the EPBC Act has been provided in the EP; and
- a suitable demonstration of how these requirements will be met by the titleholder has been provided by integrating these requirements as criteria for demonstrating that impacts and risks of the activity will be of an acceptable level.

27. In relation to requirements that apply to the activity in the Oceanic Shoals Marine Park under the North Marine Parks Network Management Plan (2018), the EP describes the relevant class approval applying to

'mining' activity in the Multiple Use Zone and a Commercial Activity License issued by the Director of National Parks authorising construction and operation of the pipeline in the Habitat Protection Zone.

Environmental assessment – evaluation of environmental impacts and risks

28. NOPSEMA considered the details of the environmental impacts and risks for the activity provided in section 5 of the EP and found:

- A sufficiently robust method, consistent with internationally recognised standards ISO 14001: Environmental Management Systems and ISO 31000: 2009 Risk Management has been applied for the identification and evaluation of environmental impacts and risks of the activity. This included describing the context, defining criteria for evaluation, identifying and analysing impacts and risks, conducting an evaluation and application of control measures.
- The environmental impacts and risks detailed as resulting from the activity are appropriately identified, given the description of the activity and environment that may be affected by the activity. These include impacts and risks associated with:
 - interactions between activity vessels, the gas export pipeline and other marine users
 - seabed disturbance
 - noise, light and atmospheric emissions
 - pipeline and dewatering discharges
 - activity vessel discharges.
- The environmental impacts and risks detailed as resulting from potential emergency conditions are appropriately identified. These include impacts and risks associated with:
 - introduction of invasive marine pests
 - collision with marine fauna
 - subsea release from an unplanned pipeline event
 - dry natural gas release from the nearby Bayu-Undan pipeline loss of containment
 - loss of hazardous and non-hazardous waste
 - vessel collision (diesel spill)
 - chemical and oil spill support vessels
 - dropped objects.
- NOPSEMA considered the evaluation of environmental impacts and risks and found that the evaluation was appropriate to the nature and scale of each impact and risk given a sufficiently robust method has been applied by the titleholder to demonstrate that environmental impacts and risks of the activity will be reduced to as low as reasonably practicable (ALARP), and the implementation of additional control measures would be grossly disproportionate to the benefits gained, by evaluating all impacts and risks against one or a combination of the following criteria:
 - hierarchy of controls



- decision making criteria considering ALARP tolerability criteria, the type of activity, degree of uncertainty associated with the assessed impact or risk and stakeholder influence
 - comparison with good industry practice control measures, engineering risk assessment and precautionary approach
 - comparative options assessment of risks, costs and benefits
 - the titleholder's risk assessment process.
- A sufficiently robust method has been applied by the titleholder to demonstrate that each environmental impact and risk of the activity will be of an acceptable level by evaluating all against the following criteria:
 - environmental management in accordance with all relevant international, Commonwealth and State legislation and industry standards and best practice guidance
 - consistency with relevant species' recovery plans, Australian marine park management plans and species conservation advices
 - appropriateness of the environmental management measures consistent with the nature/sensitivity of the receiving environment
 - consistency with the principles of ecologically sustainable development as set out in section 3A of the EPBC Act
 - demonstrating that impacts and risks have been reduced to ALARP.
 - The evaluation considered the impacts and risks using a consistent method with and without implementation of control measures;
 - The analysis undertaken and conclusions drawn by the titleholder regarding environmental impacts and risks have been sufficiently supported with scientific literature. The literature has been considered alongside relevant context including environmental guidance, policy statements, management plans, and recovery plans with greater emphasis placed on supporting the evaluation where there is a higher degree of uncertainty and/or higher potential consequences. Appropriate additional studies were provided by the titleholder to support the evaluation of impacts and risks, including but not limited to the use of light and underwater acoustic modelling to predict received levels in the marine environment.

29. The EP has provided an evaluation of environmental impacts and risks in a manner appropriate to the nature and scale of each impact and risk, and demonstrated that these will be reduced to an acceptable level, and ALARP for the following reasons:

In relation to seabed disturbance

- The EP has defined acceptable levels of direct and indirect impacts from seabed disturbance activities for the key marine fauna and benthic habitat values of the Oceanic Shoals Marine Park, shelf break and slope of the Arafura Shelf Key Ecological Feature (KEF), carbonate bank and terrace system of the Van Diemen Rise KEF and the Commonwealth marine area;
- The titleholder's assessment of the impacts and risks associated with seabed disturbance was informed by:

- a comprehensive description of the seabed characteristics and habitats that may be present in the vicinity of the pipeline route and a broader area, drawing on results of seabed and benthic habitat surveys as well as benthic habitat modelling
- sediment modelling for mass flow excavation activities.
- The titleholder considered a range of relevant control measures and proposed to adopt sufficient control measures to ensure that the predicted levels of impact did not exceed the defined acceptable levels of impact. The control measures adopted by the titleholder included:
 - the gas export pipeline route to be surveyed and confirmed prior to installation
 - the use of a dynamically positioned pipelay vessel
 - pipeline installation activities restricted to areas beyond biologically important areas (BIA)
 - development of initiation structure and span-specific rectification plans
 - sequencing activities to minimise the time pipelay, and associated activities, are performed within peak internesting periods in important habitat for listed marine turtles.
- After taking into consideration all of the environmental management requirements in place, NOPSEMA was reasonably satisfied that the activity would be managed so that impacts from seabed disturbance activities would not be inconsistent with the North Marine Parks Network Management Plan (2018) and the Recovery Plan for Marine Turtles (2017).
- After taking into consideration the environmental impact assessment and management measures for seabed disturbance, NOPSEMA was reasonably satisfied that the activity will be managed so that impacts to key marine fauna and benthic habitats, which may be affected by the activity, will be managed to ALARP and acceptable levels.

In relation to marine turtles

- The EP identifies six species of listed, threatened marine turtles as being potentially present within the operational area. The southern section of the operational area in the vicinity of the Tiwi Islands overlaps areas of habitat critical to the survival of olive ridley and flatback turtles identified in the Recovery Plan for Marine Turtles (2017). The EP also identifies that the operational area overlaps an internesting BIA for flatback turtles and is adjacent to an internesting BIA for olive ridley turtles.
- The EP defines an acceptable level of impact for marine turtles, taking into account relevant context from the Recovery Plan for Marine Turtles (2017) and the National Light Pollution Guidelines (2020).
- The titleholder undertook a comprehensive assessment of the impacts and risks of the activity to marine turtles, with the highest order impacts and risks being light and noise emissions from the activity.
- The environmental impact assessment considers relevant, contemporary scientific literature, the outcomes of a light modelling study conducted by Pendoley Environmental which included lighting inputs based on actual vessels that may be engaged, and source level estimates for noise emissions and noise exposure thresholds for marine turtles from peer-reviewed published scientific literature.

- The evaluation of impacts to turtles from underwater noise indicate the potential for physiological impacts from continuous noise within 100 m of the vessel, similar to the extent of possible behavioural disturbance. The potential for these impacts to be realised is based on a 24 hour cumulative scenario which would require a turtle to remain within 100 m of the vessel for 24 hours. Based on studies of marine turtle responses to anthropogenic sound and vessel presence, it was concluded in the EP that this is a highly unlikely scenario and turtles are likely to self-mitigate to noise exposure through natural avoidance of vessels. This evaluation is supported by context from the literature review conducted by Pendoley Environmental.
- The environmental impact assessment also considers the likely occurrence of turtles within the operational area given the proposed depths within the pipeline corridor. While the olive ridley and flatback turtle internesting habitat critical to survival overlaps with the operational area, tagging studies have demonstrated that internesting flatback and olive ridley turtles remain close to the coastline and in relatively shallow waters (<30 m) during the internesting period. Given the shallowest point along the proposed pipeline route is deeper than 30 m, the likelihood of high numbers of marine turtles within the operational area is deemed to be low.
- Light modelling predicts that light received at nesting beaches will not be at a biologically relevant level based on peer-reviewed thresholds, and consequently while it may be visible, it is not expected to result in behavioural disturbance to nesting turtles, or result in disorientation or misorientation of emerging hatchlings. Advice provided by Pendoley Environmental in the form of a scientific literature review indicated that there was no scientific evidence that internesting behaviours were adversely affected by light, supporting the outcome of the impact evaluation.
- The outputs of the light modelling study conducted by Pendoley Environmental indicate that the farthest distance at which light of biologically relevant wavelengths may be received is 3.4 km. Given the nearest nesting beach is at its closest proximity around 6 km from the pipeline route, light glow and light spill are not expected to disrupt the behaviour of nesting marine turtles or attract emerging hatchlings.
- The evaluation of potential light impacts has taken into consideration the swimming abilities of marine turtle hatchlings and prevailing current conditions around nesting beaches that may inadvertently wash hatchlings into light spill. Based on the short period of time that the pipelay vessel may be present in the identified habitat critical to survival, the continual movement of the pipelay vessel parallel to prevailing currents, and the adopted management control measures, the titleholder concluded it was highly unlikely that a hatchling would be carried into close enough proximity to the vessel to be attracted to its light spill and become trapped.
- The titleholder considered reasonably practicable control measures and adopted a series of control measures to ensure that the predicted levels of impact would not exceed the defined acceptable level of impact, including:
 - no pipelay activities to be conducted inside the olive ridley turtle internesting habitat critical to survival
 - sequencing pipeline installation activities to minimise the overlap of pipe lay activities with habitat critical to survival for marine turtles during peak nesting and hatchling emergence periods

- shielding and orienting lights on the pipelay vessel to limit light spill to the environment
- adopting housekeeping measures including requiring all crew to keep shutters on windows closed at night to limit light emissions from vessels operating within 10 km of nesting beaches
- only conducting crew transfers during daylight hours for vessels located within 10 km of turtle nesting habitat during peak nesting and hatchling emergence season.
- The EP has defined an acceptable level of environmental performance for the activity and committed to no displacement of marine turtles from habitat critical to survival during the conduct of pipeline installation activities, and to managing noise and light emissions such that biologically important behaviour can continue to occur within biologically important areas. It is demonstrated that this will be achieved based on the presented noise modelling results that indicate the potential for behavioural disturbance is limited to tens of metres from the slowly moving pipelay vessel which constitutes a relatively small area of the habitat critical at any one time. This is further supported by context in the literature review provided by Pendoley Environmental that indicates the pipeline route itself is unlikely to constitute important interesting habitat.
- After taking into consideration the environmental impact assessment, advice provided by Pendoley Environmental, and proposed management measures, NOPSEMA was reasonably satisfied that the activity will be managed such that impacts from the activity will not be inconsistent with the Recovery Plan for Marine Turtles (2017), and will be managed consistent with the principles of the National Light Pollution Guidelines (2020).

In relation to benthic habits of the Commonwealth Marine Area, including the Oceanic Shoals Marine Park

- The operational area for the activity is within the Commonwealth Marine Area and includes areas within the Oceanic Shoals Marine Park. Specifically, the proposed Barossa gas export pipeline route traverses a 30 km section of the Multiple Use Zone and 31.5 km through the Habitat Protection Zone, within the Marine Park.
- The EP explains that the Director of National Parks issued a Commercial Activity Licence in April 2019. The Management Plan for the North Marine Parks Network (2018) provides for the Director of National Parks to issue an activity licence authorising construction and operation of a petroleum pipeline within the Habitat Protection Zone of the Oceanic Shoals Marine Park. The EP explains that licensed activities under the licence issued by the Director of National Parks include the construction, installation, operation, inspection, maintenance, repair and decommissioning of the Gas Export Pipeline, and the related capture of images, video and sound within the marine park. The License area includes the pipeline installation corridor and with a 2000 m buffer on either side.
- The Director of National Parks has issued a ‘mining’ class approval that authorises allowable petroleum activities to occur in approved zones of the North Marine Parks network, including a Special Purpose and Multiple Use Zones of the Oceanic Shoals Marine Park. The class approval is subject to a number of conditions, including that the activity must be conducted in accordance

with an Environment Plan accepted under the Environment Regulations, the EPBC Act, the EPBC Regulations and the North Network Marine Management Plan (2018).

- The existing mining Class Approval and the Commercial Activity License issued for the Barossa pipeline provide important context for defining the acceptability of environmental impacts and risks of the activity on Oceanic Shoals Marine Park and considering the EP in the context of the North Marine Parks Network Management Plan (2018).
- The EP identifies the potential for pipe-laying activities to result in seabed disturbance, noise, and light emissions, as well as increased vessel activity that may result in impacts to the marine environment, including the values of the Oceanic Shoals Marine Park.
- The titleholder commissioned a number of studies to inform the description of the environment that may be affected and environmental impact and risk assessment. These included a number of surveys along the pipeline route including geophysical surveys and an environmental survey to characterise plankton, water quality, sediment quality and infauna communities along a section of the pipeline route. These surveys have provided an appropriate level of understanding of the environmental setting for the activity and baseline information to inform the evaluation of impacts and risks for the activity.
- The titleholder's impact evaluation was informed by habitat modelling and mapping that allowed it to describe and also make informed predictions of the benthic communities across large areas of the Commonwealth marine area, including those present within the pipeline corridor as well as outside of it and associated with key seabed formations.
- The EP has defined acceptable levels of impact as a result of pipe-laying activities to the marine environment, including for the key values of the Oceanic Shoals Marine Park. These acceptable levels of impact are considered appropriate noting that the process for defining them has regard to key context including the Significant Impact Guidelines (2013) and the North Marine Parks Network Management Plan (2018).
- The titleholder undertook a comprehensive assessment of the potential for impacts from seabed disturbance to the benthic habitats and communities in the Commonwealth marine area. This assessment included quantifying the total expected area of seabed disturbance (approximately 28.7 ha) and evaluating the risk that this disturbance would impact on the ecological integrity of benthic habitats and communities. The assessment also considered the potential for impacts to marine fauna and benthic communities from potential increases in turbidity and sediment deposition in the pipeline corridor.
- The impact evaluation considered the value of specific benthic communities and habitat types and their representation throughout the region. The benthic habitat information presented in the EP describes the benthic habitat along the pipeline corridor as being comprised primarily of sandy sediments, with approximately 24% comprised of patches of harder substrate supporting sessile filter feeders. Information was provided to indicate these habitats are well represented throughout the region, and it was demonstrated that the activity would only result in localised disturbance of benthic habitats and short-term changes to benthic communities in the immediate vicinity of the pipeline route. Consequently the representativeness of habitats and habitat

diversity would be maintained, and the natural processes and life support systems of the Oceanic Shoals Marine Park will be sustained.

- The impact evaluation supports specific environmental performance outcomes for seabed disturbance that allow for a quantified level of environmental disturbance which is not serious, or irreversible, and allows for the maintenance of biological diversity and essential ecological processes at relevant spatial scales.
- Sediment sampling was conducted along the pipeline route to inform sediment dispersion modelling and allow for the assessment of impacts and risks from mass flow excavation. The sediment dispersion modelling used literature-based thresholds, and sediment size distributions from in-situ measurements. Based on the modelling conducted, the amount of sediment that would be released into the water column and the extent of sediment deposition were well understood, and demonstrated to not have an unacceptable impact on benthic communities or the values of the Oceanic Shoals Marine Park or Commonwealth marine area.
- Sediment deposition was predicted to be restricted primarily to within 400 m of the pipeline route with short term elevations of suspended sediment concentrations. Suspended sediment concentrations were predicted to return to background levels within one tidal cycle and consequently were not predicted to impact on the coral communities of Mesquite Shoals, Goodrich Bank, Marie Shoal or Shepparton Shoal, all of which are located outside of the operational area.
- After assessing the titleholder's evaluation of environmental impacts and risks and its proposed management measures, including design measures to minimise seabed intervention, limiting mass flow excavation duration, using dynamically positioned vessels, and placement of the pipeline initiation structure to prevent dragging, NOPSEMA was reasonably satisfied that the activity will be managed such that impacts from the activity will be limited to short term, localised changes in suspended sediment, ambient noise and light conditions and seabed disturbance that will not constitute a significant impact on ecological diversity or integrity.
- Consequently, NOPSEMA was reasonably satisfied that the activity can be managed in a manner that is not inconsistent with the North Marine Parks Network Management Plan (2018), and that impacts and risks to the values of the Oceanic Shoals Marine Park and Commonwealth marine area will be managed to an acceptable level and reduced to ALARP.

For all additional impacts and risks arising directly and indirectly from the activity

- In addition, the EP included an evaluation of all the impacts and risks arising directly or indirectly from the activity, including under potential emergency conditions appropriate to the nature and scale of each impact or risk. The impacts and risks included displacement of marine users, noise, light and atmospheric emissions, vessel discharges, pipeline hydrotest and dewatering discharges, introduction of marine pests, vessel collision with marine fauna and unplanned discharges during an emergency event.
- The EP has defined an acceptable level of impact for each of these aspects, taking into account suitable context by describing the values and sensitivities, and given consideration to the values

outlined in the North Marine Parks Network Management Plan (2018), and the Commonwealth marine area.

- The titleholder undertook an assessment of the impacts and risks associated with these aspects that was appropriate to the nature of scale of the activity.
- The titleholder considered all reasonably practicable control measures and the EP adopts control measures which ensure that the predicted levels of impact will not exceed the defined acceptable levels of impact.
- The titleholder gave adequate consideration to additional possible controls, and carried out an appropriate evaluation to demonstrate that risks were reduced to ALARP.
- After taking into consideration all of the environmental management requirements in place in the EP, NOPSEMA was reasonably satisfied that the activity would be managed so that impacts and risks associated with the activity, including under potential emergency conditions, would be acceptable and reduced to ALARP.

Environmental assessment – details of control measures

30. NOPSEMA considered the details of the control measures that will be used to reduce the environmental impacts and risks of the activity, including those under potential emergency conditions, to ALARP and acceptable levels and found that:

- control measures in the form of systems, equipment, persons and procedures have been clearly identified;
- the control measures will be appropriate for managing each of the environmental impacts and risks of the activity, given a clear demonstration has been provided by the titleholder through application of the above method of risk analysis, treatment and evaluation; and
- the control measures applied will be effective in reducing the environmental impacts and risks to ALARP and acceptable levels.

Environmental assessment – environmental performance outcomes and standards

31. NOPSEMA considered the environmental performance outcomes, environmental performance standards and measurement criteria and found that:

- environmental performance standards provide statements of performance for control measures identified as being necessary to manage the environmental impacts and risks of the activity, including those under potential emergency conditions;
- environmental performance outcomes have been appropriately defined to provide measurable levels of performance for the management of the environmental aspects of the activity, including those under potential emergency conditions, to ensure that environmental impacts and risks of the activity will be of an acceptable level; and
- measurement criteria provided will allow the titleholder to determine whether each environmental performance outcome and environmental performance standard is being met for the duration of the activity.

Implementation strategy for the environment plan

32. NOPSEMA considered the implementation strategy for the activity including monitoring, recording and reporting arrangements and found that:
- the EP included an oil pollution emergency plan (OPEP) and provides for the updating of the plan;
 - the EP includes suitable arrangements for reporting the titleholder's environmental performance of the activity to NOPSEMA, with reporting submitted within three months of completion of the petroleum activity;
 - the environmental management system described is consistent with recognised standards (AS/NZS ISO 14001: Environmental Management Systems and AS/NZS ISO 31000: Risk Management - Principles and Guidelines). Further the environmental management system contains specific measures to ensure that the control measures detailed in the EP will be effective in reducing the environmental impacts and risks of the activity to an acceptable level and ALARP; and that the environmental performance outcomes and standards in the EP will be met;
 - the environment management system includes measures to ensure that environmental impacts and risks of the activity will continue to be identified and reduced to ALARP and to an acceptable level;
 - a clear chain of command is established in the EP, with set roles and responsibilities of personnel in relation to the implementation, management and review of the EP, including during emergencies or potential emergencies, with the titleholder responsible for ensuring the activity is undertaken in the manner described in the EP;
 - there are suitable measures in place to ensure that each employee or contractor working on, or in connection with, the activity is aware of his or her responsibilities in relation to the EP, including during emergencies or potential emergencies, and has the appropriate competencies;
 - sufficient arrangements are in place for monitoring, recording, audit, management of non-conformance and review of the titleholder's environmental performance and the implementation strategy to ensure that the environmental performance outcomes and standards in the EP are being met;
 - sufficient arrangements are in place to allow monitoring of emissions and discharges by maintaining a quantitative record (whether occurring during normal operations or otherwise), such that the record can be used to assess whether the environmental performance outcomes and environmental performance standards in the EP are being met;
 - the OPEP provided is consistent with the national system for oil pollution preparedness and response and includes arrangements for responding to and monitoring oil pollution, including:
 - the control measures necessary for timely response to an emergency
 - the arrangements and capability in place, for the duration of the activity, to ensure timely implementation of the control measures, including arrangements for ongoing maintenance of response capability

- the arrangements and capability in place for monitoring the effectiveness of the control measures and ensuring that the environmental performance standards for the control measures are met
- arrangements and capability for monitoring oil pollution to inform response activities are in place.
- arrangements for testing of the response arrangements in the OPEP include scheduled tests when arrangements are introduced or significantly amended; if a new location or activity is added to the EP after response arrangements have been tested, and before the next test is conducted; and an IMT desktop exercise conducted at least annually.
- monitoring of impacts to the environment from oil pollution and response activities has been provided for in the OPEP. The scope of the monitoring program and the arrangements to implement the program are appropriate to the nature and scale of the oil spill risk for the activity and will be sufficient to inform any remediation activities.
- ongoing consultation arrangements are in place with relevant authorities of the Commonwealth, Territory and other relevant interested persons or organisations with the titleholder developing a stakeholder communication and consultation plan and a communication and enquiry management process. Consultation processes provide for notifications three weeks prior to the commencement of the activity, weekly status report notifications and activity cessation notifications.
- The implementation strategy complies with the OPGGS Act, the regulations and environmental legislation applicable to the activity.

Details of titleholder and liaison person

33. NOPSEMA considered the details of the titleholder and liaison person provided in the EP and found that details of all titleholders' including the names, business addresses and ACNs' (within the meaning of the Corporations Act 2001), and the titleholder's nominated liaison person, their business address, telephone number and email met requirements.

Other information in the EP

34. NOPSEMA considered other information provided in the EP and found that:
- the titleholder's corporate health, safety and environment policy was provided
 - details of all reportable incidents, meaning those that have the potential to cause moderate to significant environmental damage relating to the activity, are to be reported to NOPSEMA.

Consultation undertaken in the course of preparing the EP

35. NOPSEMA considered the consultation carried out by the titleholder as required by division 2.2A of the Environment Regulations; and the measures that the titleholder has adopted, or proposes to adopt because of the consultations and found that:
- in preparing the EP, the titleholder consulted with each of the following (a relevant person):
 - each department or agency of the Commonwealth, to which the activities to be carried out under the EP, may be relevant

- each department or agency of a state, to which the activities to be carried out under the EP, may be relevant
- the department of the responsible State Minister, or the responsible Northern Territory Minister
- each person or organisation whose functions, interests or activities may be affected by the activities to be carried out under the EP
- any other persons and organisations that the titleholder considers relevant.
- the titleholder has demonstrated that each relevant person has been provided with sufficient information and a reasonable period to make an informed assessment of the possible consequences of the activity on the functions, interest or activities of the relevant person, given:
 - information gathered from consultation has been used to inform the preparation of the EP
 - as part of consultation, the titleholder has provided sufficient information to relevant persons to allow them to make an informed assessment of the possible consequences of the activity on their functions, interests or activities
 - sufficient time has been given to relevant persons for them to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.
- a report on all consultations between the titleholder and relevant persons undertaken in the course of preparing the EP (Section 8.6 and Appendix E) is appropriate as it includes:
 - a summary of each response made by a relevant person
 - an assessment of the merits of any objection or claim about adverse impact of each activity to which the EP relates
 - a statement of the titleholder's response, if any, to each objection or claim, and
 - a copy of the full text of any response by a relevant person.
- the objections and claims raised by relevant persons and assessed by the titleholder include:
 - impacts to recreational and commercial fishing activities
 - impacts to the Oceanic Shoals Marine Park and Habitat Protection Zone
 - displacement of other marine users and impacts to their activities
 - impacts to matters of national environmental significance
 - biosecurity management.
- objections and claims have been sufficiently addressed by the titleholder. Due consideration has been given to each objection and claim made by relevant persons
- appropriate responses have been provided to relevant persons for each objection and claim made and
- the consultation undertaken has met the requirements of division 2.2A and the titleholder has adopted appropriate measures to reduce impacts and risks to an acceptable level.



Financial assurance

36. As at the time of making the decision, NOPSEMA considered that in accordance with regulation 9(2), the pre-condition to acceptance in regulation 11 to be reasonably satisfied that the titleholder is compliant with subsection 571(2) in relation to the activity did not apply to the applicant for a pipeline licence and as such, this requirement will therefore apply to the titleholder at a later date.

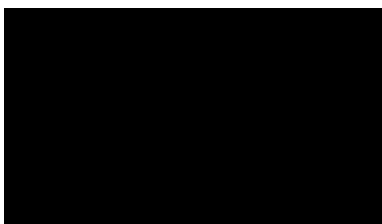
Findings on criteria for acceptance of environment plan

37. NOPSEMA was reasonably satisfied that the EP:

- is appropriate for the nature and scale of the activity; and
- demonstrates that the environmental impacts and risks of the activity will be reduced to as low as reasonably practicable and will be of an acceptable level; and
- provides for appropriate environmental performance outcomes, environmental performance standards and measurement criteria; and
- includes an appropriate implementation strategy and monitoring, recording and reporting arrangements; and
- does not involve the activity or part of any activity being undertaken in any part of a declared World Heritage property; and
- demonstrates that the titleholder has carried out the required consultations and that the measures that they propose to adopt because of the consultations are appropriate; and
- complies with the OPGGS Act and the regulations;

and therefore meets the requirements set out in the Environment Regulations.

Signed



Manager - Assessment and Inspection – Drilling and Developments

1 May 2020

ATTACHMENT 1

NOPSEMA letter – acceptance of Environment Plan

(9 March 2020)

Our ref: ID: RMS 4937 A719928

Your ref: BAA-100 0329

Contact: [REDACTED]

Email: [REDACTED]

[REDACTED]
[REDACTED]
ConocoPhillips Australia Exploration Pty Ltd
53 Ord Street
WEST PERTH WA 6005
[REDACTED]

Dear [REDACTED]

RE: ENVIRONMENT PLAN ACCEPTANCE – BAROSSA GAS EXPORT PIPELINE INSTALLATION

Please be advised that the Barossa Gas Export Pipeline Installation environment plan (EP), comprising:

- Barossa Gas Export Pipeline Installation Environment Plan (Document No. (BAA-100 0329, Revision 3, dated 7 February 2020);
- Barossa Gas Export Pipeline Installation Oil Pollution Emergency Plan (Document No. (BAA-100 0330, Revision 1, dated 31 October 2019);
- Appendices including:
 - Barossa Pipelay Light Modelling, Pendoley Environmental, 11 February 2020;
 - ConocoPhillips Barossa Project – Potential Impacts of Pipeline Installation Activities on Marine Turtles - literature update, Pendoley Environmental, 5 July 2019;
 - Technical note - Assessment of survey equipment and positioning equipment for the Barossa Gas Export Pipeline Installation, Jasco Applied Sciences, 22 January 2020;
 - EPBC Act Protected Matters Reports (4 January 2020 & 20 March 2019); and
- Sensitive Information provided in Appendix E

has been accepted in accordance with regulation 10 of the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Environment Regulations).

An assessment of the EP was conducted in accordance with the Environment Regulations and NOPSEMA's assessment policies. This included a general assessment of the whole EP and two detailed topic assessments of the EP content, as follows:

- Matters protected under Part 3 of the EPBC Act
- Appropriateness of Consultation

This acceptance is based on the document submissions provided in accordance with the Environment Regulations. Please note that the responsibility for the ongoing environmental performance of the Barossa Gas Export Pipeline Installation activity remains, at all times, with ConocoPhillips Australia Exploration Pty Ltd.

ConocoPhillips Australia Exploration Pty Ltd is reminded that once a title for the activity is granted, titleholders have a duty under section 571 of the Offshore Petroleum and Greenhouse Gas Storage Act 2006 to maintain sufficient financial assurance. NOPSEMA may seek evidence of compliance with the duty through its compliance monitoring activities which may include ConocoPhillips Australia Exploration Pty Ltd providing demonstration of financial assurance compliance. For further information, see NOPSEMA's Guideline N-04750-GL1381 Financial assurance for petroleum titles.

NOPSEMA will communicate this acceptance decision on its website and will publish the final environment plan, excluding the sensitive information part, in accordance with regulation 9(2A).

You are reminded that in accordance with regulation 29, ConocoPhillips Australia Exploration Pty Ltd must notify NOPSEMA at least ten days before commencement and within ten days after completion of any activity described in the EP.

Should you have any queries regarding the above, please contact [REDACTED].

Yours sincerely

[REDACTED]
Environment Manager, Drilling & Developments

SAN: wA298003

09 March 2020

SAN: All regulatory correspondence issued by NOPSEMA, including this letter, bear a signature authorisation number (SAN) in place of a traditional signature. The SAN is a unique, secure identifier applied to the letter upon approval by the named signatory. If you wish to enquire further about SAN and its use in this or other correspondence, please contact information@nipsema.gov.au quoting the reference provided above.