Australian Government
Department of Climate Change, Energy, the Environment and Water

Statement of Reasons for Approval under the *Environment Protection and Biodiversity Conservation Act 1999*

I, KYLIE CALHOUN, Branch Head of Environment Assessments West Branch, Nature Positive Regulation Division, Department of Climate Change, Energy, the Environment and Water (the **department**), delegate for the Minister for the Environment and Water (the **Minister**), provide the following statement of reasons for my decision of 15 March 2024, under subsection 130(1) and section 133 of the *Environment Protection and Biodiversity Conservation Act 1999* (**EPBC Act**), to approve the proposed action by Santos NA Barossa Pty Ltd (the **proponent**) to install, pre-commission, operate and decommission a gas export pipeline and associated infrastructure in Commonwealth waters and in Northern Territory waters and on land (EPBC 2022/09372) (**proposed action**).

Legislation

1) Annexure A sets out a copy of relevant provisions of the EPBC Act to this Statement of Reasons. This legislation is not part of my reasons but provides contextual background to my decision.

Evidence or other material on which my findings were based

2) In making my decision under subsection 130(1) and section 133 of the EPBC Act as to whether to approve the proposed action, I considered the information in the final approval decision brief dated 15 March 2024 (**approval decision brief**) and its attachments as set out in Annexure B.

Background

Description of proposed action

3) The proposed action area covers a total of 756 hectares (ha), which comprises a 50 m corridor along the pipeline route and onshore footprint (131 ha), and the spoil disposal ground (625 ha).

4) To assist my decision-making, the department subdivided the proposed action area into four 'regions' that corresponded to the main habitat types and levels of assessment required:

   a) Offshore Commonwealth waters – waters between the Northern Territory (NT) waters boundary and the seaward boundary of the economic exclusion zone, as described in section 24 of the EPBC Act.

   b) Offshore NT waters – waters between outer Darwin Harbour and the NT waters boundary. I noted that this includes the proposed spoil disposal ground, which is approximately 15 km from the mainland and 20 km from City of Darwin.

   c) Darwin Harbour – waters within the Darwin Harbour Region Management Boundary.

   d) The shore crossing location within the existing Darwin Liquified Natural Gas (LNG) facility (including the short onshore section of the proposed action).

Proposed action

5) The proposed action is to install, pre-commission, operate and decommission a gas export pipeline and associated infrastructure across Commonwealth waters and NT waters and land.

6) The proposed action is part of a larger project that will enable natural gas from the approved Barossa Development to be transported to the existing Darwin LNG facility, which has been operational since 2006. The Barossa Development will supply backfill natural gas once the nearby (and existing) Bayu-Undan facility ceases to produce. I noted that the proponent proposes to commence works for the proposed action in 2024 with gas production commencing in 2025.

7) The proposed pipeline will be installed parallel to (within approximately 50-100 m), and hence is effectively a 'duplication' of, a portion of the existing Bayu-Undan to Darwin pipeline. The proposed action will include surveys, pipeline pre-lay work (including pipeline trenching and spoil disposal), pipeline installation and pre-commissioning, commissioning, operation and decommissioning.

8) The seabed along the pipeline route and shoreline within the Darwin LNG facility footprint will be disturbed through pre-lay activities and pipeline installation, which will include trenching of the seabed, laying of the pipeline (approximately 100 km of pipeline in NT waters and land, and 23 km in Commonwealth waters), placement of associated equipment, span supports and rocks and vessel anchoring. There will also be seabed disturbance from installing the Pipeline End Termination (PLET) foundation and associated infrastructure.

9) Trenching and pipeline installation will occur within a nominal disturbance corridor of 50 m (encompassing a total area of 131 ha). The anticipated volume of spoil removed through trenching is approximately 255,000 m^3 and up to 500,000 m^3. The spoil disposal ground, with an area of approximately 625 ha, will be located 12 km north-west of Lee Point in NT waters. Up to 30,000 tonnes (t) of rock is expected to be required for trench backfill. All onshore temporary facilities, including shore pull, laydown and ancillary facilities will be on NT land within the existing approved DLNG facility footprint.

10) Vessels, vehicles, helicopters, and equipment working within the proposed action area will create air, noise and light emissions. Water quality will be temporarily impacted by pre-lay work (including trenching of the seabed and spoil disposal), pre-commissioning discharges at and near the PLET location and operational discharges from vessels supporting construction and operational activities. I noted that the proposed activity is expected to include 19 vessels operating within the proposed action area at any given time, over the 15-month construction period.

Procedural history

Referral history

11) On 8 November 2022, the proponent submitted a valid referral for the proposed action to the department. On the same date and as required by section 74(3) of the EPBC Act, the proposal was published on the department's website and public comments were invited until 22 November 2022.

Public comments

Three public comments were received on the referral. These comments raised the following matters:

Greenhouse gas emissions

12) All public comments received raised concerns regarding the contribution that greenhouse gas (GHG) emissions associated with the larger action will make to anthropogenic climate change and associated impacts. The Environment Centre NT (ECNT) submitted that I should consider all impacts from the larger project, including assessing the impacts from scope 1, 2 and 3 GHG emissions, and impacts to the Great Barrier Reef Marine Park, and World and National Heritage places. ECNT submitted that impacts from the GHG emissions associated with the larger Barossa Area Development are consistent with the definition of "impact" in section 527E of the EPBC Act, and that the larger project, of which the proposed action 'is a necessary and indispensable component,' is likely to have a significant impact on certain Matters of National Environmental Significance (MNES) because of its contributions to climate change by the total scope 1, 2 and 3 GHG emissions. ECNT also commented about the climate change impacts to various MNES and referred to material, including Commonwealth and international reports, relating to climate change impacts.

Other protected matters

13) The ECNT comments also raised the following concerns:

a) The information provided in the referral is inaccurate and de-emphasises important environmental values associated with Darwin Harbour, including the extent of hard coral habitat.

b) Information provided in the Ichthys monitoring program, which was relied on in the referral for determining impacts of project activities on marine ecosystems, may be inadequate to assess impacts on marine turtles and migratory mammals because the report is out-dated and lacking in certain information.

c) A significant increase in underwater noise and increased shipping traffic may have an impact on the Australian Humpback, Australian Snubfin and Spotted Bottlenose dolphins within Darwin Harbour.

d) Construction works may impact on marine conservation areas including the Charles Point Reef Fish Protection Area and Weed Reef, which have not been specifically addressed.

e) Impacts on some threatened and migratory species, that have been recorded in Darwin Harbour, were not considered in the referral, including:

- Largetooth (Freshwater) Sawfish (*Pristis pristis* Indo-West Pacific subpopulation) – vulnerable, migratory
- Green Sawfish (*Pristis zijsron*) – vulnerable, migratory
- Dwarf Sawfish (*Pristis clavata*) – vulnerable, migratory
- False Killer Whales (*Pseudorca crassidens*) – cetacean
- Dwarf Spinner Dolphins (*Stenella longirostris roseiventris*) – cetacean

- Humpback Whale (*Megaptera novaeangliae)* – migratory, cetacean

f) Pre-lay activities (including trenching and pipelay) may impact Commonwealth waters.

Controlling provisions and assessment approach

14) On 6 December 2022, a delegate of the Minister determined the proposed action to be a controlled action under section 75 of the EPBC Act due to likely significant impacts on the following controlling provision:

a) Listed threatened species and ecological communities (sections 18 and 18A);

b) Listed migratory species (sections 20 and 20A); and

c) Commonwealth marine areas (sections 23 and 24A).

15) On the same date, the delegate also decided under section 87(1) of the EPBC Act that the proposed action would be assessed by preliminary documentation.

Assessment documentation and consultation

16) On 23 December 2022, the department wrote to the proponent requesting further information for assessment of the relevant impacts on listed threatened and migratory marine turtles, listed migratory inshore dolphins, and the Commonwealth marine environment.

17) On 10 October 2023, the proponent provided a draft preliminary documentation package. Following provision of feedback from the department, subsequent revisions were received on 13 October 2023 and 26 October 2023.

18) On 1 November 2023, and in accordance with section 95A(3) of the EPBC Act, the department directed the proponent to publish the draft preliminary documentation package of 26 October 2023.

19) The proponent published the preliminary documentation package of 26 October 2023 for public consultation for 25 business days, from 13 November to 15 December 2023.

Public comments

20) One public comment was received from the ECNT on the proponent's draft preliminary documentation.

21) I noted that the proponent addressed the public comment from the ECNT in the response-to-submissions document provided to the department on 18 January 2024. The proponent determined that no amendments were necessary to the preliminary documentation from matters raised in the public comment.

22) The ECNT comment raised the following concerns:

a) Any assessment of the proposed action requires an assessment of the lifetime GHG contribution and resulting climate impacts of the Barossa Gas Project.

b) The delegate's decision does not address the proponent's failure to assess the potential climate related impacts of the proposed action, which are high in number and complexity. The decision also belies the need for a more comprehensive environmental impact statement for a project of this size and scale, considering that it underpins one of the largest and most carbon-intensive offshore gas projects in Australia's history.

c) Approval of the proposed action would be inconsistent with the principles of ecologically sustainable development, including the principle of inter-generational equity, the precautionary principle, and the principle of conserving biodiversity and ecological integrity.

d) The referral information and preliminary documentation is tainted by inaccuracies and deficiencies, which means the Minister lacks sufficient information to make an informed decision under Part 9. Further, the proposed action will cause unacceptable risks to MNES. For these reasons, the Minister should not approve the taking of this controlled action.

e) The proponent must provide sufficient information about the impact on relevant MNES of the indirect GHG emissions from the proposed action. The proponent has also failed to demonstrate that the GHG emissions from the proposed action will have no unacceptable impacts on the relevant MNES.

f) It is neither accurate nor relevant to state that this proposal "does not include extractive activities," when its sole purpose is to enable extractive activities as part of the Barossa development.

g) The proponent has no credible plan to avoid, mitigate, or offset the emissions from the Barossa Gas Project and, consequently, the significant indirect impacts of the proposed action. ECNT submitted that the proponent has provided insufficient evidence that it will be able to meet the requirements of the Safeguard Mechanism.

h) In the assessment documentation, the proponent fails to identify all direct and indirect emissions from the proposed action, analyse any adverse impacts on the relevant MNES, or assess whether those emissions are a substantial cause of any such impacts.

23) I noted that the proponent responded to the ECNT's comments. That response included the following information:

a) The proposed action is not a substantial cause of the lifecycle emissions from the Barossa Project. The proposed action does not involve extractive activities and is therefore not a substantial cause of emissions from the consumption of gas extracted because of the Barossa Gas Project within the meaning of s527E of the EPBC Act. The proponent noted that, in the Statement of Reasons for the referral decision under section 87 of the EPBC Act, the Minister's delegate accepted this position. As such, direct/indirect impacts of GHG emissions were not part of the information required to be included in the preliminary documentation, relevant to the impacts of the proposed action.

b) The proponent does not accept that there are any inaccuracies and deficiencies in the PD and considers the ECNT submission fails to establish any such inaccuracies or deficiencies. The proponent considers the PD, which also attached the Referral information and comprehensive Supplementary Environmental Report (NT EPA assessment documentation), provides the Minister with sufficient information to make an informed decision.

c) The Barossa Gas Project will be a designated large facility under the Safeguard Mechanism and required to comply with an emissions baseline, as set by the Australian Government in line with is 2030 and 2050 emissions reduction targets. It is a matter for the proponent to determine how it will meet its baseline and it will have a legal obligation to procure offsets if it cannot meet its baseline, with significant penalties applying if it does not do so.

d) The proposed action will be appropriately managed and mitigated and that will not have a significant residual impact on species of national environmental significance once all relevant control measures are implemented.

e) The assessment considers the type and area of habitat either directly or indirectly disturbed by the proposed action within the context of the broader region, and the potential significance of these habitat types to matters under the EPBC Act. The assessment concludes that residual impacts from the proposed action will not be significant.

24) I accepted the department's advice that all matters raised during the public consultation period were adequately addressed by the proponent's responses, summarised above.

25) I noted that the final preliminary documentation, response-to-submission document and a notice were published on the proponent's website and placed on public exhibition for 25 business days from 9 February to 15 March 2024.

Territory assessment and approval

26) The department informed me that the Northern Territory Environment Protection Authority (NT EPA) assessed the proposed action by supplementary environmental report (SER) separate to the department's assessment of the proposed action. I noted that the proposed action was referred to the NT EPA to only include activities within NT waters and varies from the proposed action referred to the department which includes 23 km of pipeline located in Commonwealth waters.

27) On 16 November 2023, the NT EPA invited the department to provide comment on the environmental approval conditions of the Darwin Pipeline Duplication (DPD) (name of the project referred to the NT EPA) in accordance with the NT *Environment Protection Act 2019* (EP Act).

28) On 19 October 2023, the department provided comments to the NT EPA regarding the NT EPA's environmental approval conditions and their relevance to matters considered under the EPBC Act.

29) I noted that, on 22 December 2023, the Northern Territory Minister for Environment, Climate Change and Water Security granted environmental approval for the DPD project.

30) I also noted that the associated Barossa Area Development, which includes the Barossa gas field and gas export pipeline, is being assessed by the NOPSEMA on behalf of the Commonwealth under Part 10 of the EPBC Act.

Findings on material questions of fact

31) In deciding whether to approve the proposed action, I considered all impacts that the proposed action would have or would likely have on each matter protected by the controlling provisions for the proposed action (being sections 18 and 18A, 20 and 20A, and 23 and 24A of the EPBC Act).

32) I considered that the information before me was sufficient to decide whether or not to approve the proposed action.

Listed threatened species and ecological communities (sections 18 and 18A) and listed migratory species (sections 20 and 20A)

33) I noted that the species discussed below are protected as listed threatened species and/or listed migratory species under the EPBC Act.

Marine Turtles

- Flatback Turtle (*Natator depressus*) - vulnerable, migratory
- Green Turtle (*Chelonia mydas*) – vulnerable, migratory
- Olive Ridley Turtle (*Lepidochelys olivacea*) – endangered, migratory
- Hawksbill Turtle (*Eretmochelys imbricat*a) – vulnerable, migratory

Description

34) I noted the department's advice that Marine Turtles are found throughout Australia's marine environment and are most common across northern Australia. I observed that the *Marine bioregional plan for the North Marine Region (2012)* (**bioregional plan**) indicates that the region supports globally significant breeding populations of Green Turtle, Hawksbill Turtle and Flatback Turtle.

35) Marine Turtles are highly migratory animals utilising widely dispersed habitats throughout their lifecycles. The *Recovery Plan for Marine Turtles in Australia (2017)* (**marine turtle recovery plan**) states that the number of females nesting fluctuates widely between years. Turtle hatchlings have late maturation and a high juvenile mortality which means that they are slow to recover from population declines.

36) Adult Flatback Turtles inhabit soft bottom habitats over the continental shelf of northern Australia, extending into Papua New Guinea and west Papua. The species is the most widely spread nesting marine turtle in the Northern Territory, nesting on a wide variety of beach types around the entire coastline. Nesting occurs year-round, peaking from June-September. Females lay on average two to six clutches per season. The period between each successive clutch is known as the internesting period. During internesting, Flatback Turtles feed in turbid, shallow inshore waters within 60 km of nesting beaches.

37) Juvenile green turtles are pelagic, drifting on the surface of the water, and are usually associated with drift lines and floating sargassum rafts. In maturity, Green Turtles move to shallow benthic foraging habitats such as coral and rocky reefs, seagrass beds and algal mats, where they feed primarily on seagrass and algae. Adult green turtles will occasionally eat other items including mangroves, fish-egg cases, jellyfish and sponges.

38) I noted that there is currently no data on the distribution and diet of post-hatchling Olive Ridley Turtles in the Australian region, but post-hatchlings are thought to drift in offshore continental shelf and oceanic surface waters, feeding on plankton. Immature and adult Olive Ridley Turtles are carnivorous, feeding principally on gastropod molluscs and small crabs. The marine turtle recovery plan states that Australian populations of Olive Ridley Turtles spend a substantial part of their immature and adult lives foraging over benthic habitats of the continental shelf.

39) Hawksbill Turtle are believed to follow an oceanic, surface-water-dwelling, pelagic life, although the distribution and biology of this age class is poorly understood in Australian waters. Juvenile Hawkbill Turtles settle in feeding areas on the continental shelf, foraging in rocky and coral reefs, primarily feeding on sponges and algae. They have also been found, less frequently, in seagrass

habitats of coastal waters, as well as the deeper habitats of trawl fisheries. Adult Hawksbill Turtles are omnivorous, eating a variety of animals and plants including sponges, hydroids, cephalopods (octopus and squid), gastropods (marine snails), cnidarians (jellyfish), seagrass and algae. Hawksbill Turtles exhibit strong fidelity to foraging areas and nesting beaches.

40) I noted that further detailed information on the characteristics, status and habitat requirements for these species can be found in the following statutory documents:

a) *Recovery Plan for Marine Turtles in Australia 2017* (**marine turtle recovery plan**)

b) *National Light Pollution Guidelines for Wildlife Including marine turtles, seabirds and migratory shorebirds (2020)* (**light pollution guidelines**)

c) *Marine bioregional plan for the North Marine Region* (**bioregional plan**)

d) *Threat abatement plan for predation, habitat degradation, competition and disease transmission by feral pigs (Sus scrofa) 2017* (**threat abatement plans for feral pigs**)

e) *Threat abatement plan for predation by the European red fox 2008* (**threat abatement plans for European fox**)

f) *Threat abatement plan for predation by feral cats 2015* (**threat abatement plans for feral cats**), *and*

g) *Threat Abatement Plan for the impacts of marine debris on the vertebrate wildlife of Australia's coasts and oceans 2018* (**threat abatement plans for marine debris**).

41) I considered that, of these plans, the threat abatement plans for feral pigs, feral cats and the European red fox are unlikely to be relevant to the proposed action because these predators occur terrestrially, and the proposed action is primarily being undertaken in a marine environment and is not expected to increase risks associated with terrestrial pest species.

Proposed Action Area

42) I observed that the Flatback Turtle, Green Turtle, Olive Ridley Turtle and Hawksbill Turtle are known to occur within the proposed action area.

43) Flatback Turtle habitat critical to survival is mapped as all waters within a 60 km buffer of important nesting sites. I noted that the proposed action area is entirely within mapped nesting habitat critical to the survival of Flatback Turtle and an internesting Biologically Important Area (**BIA**), as it is within 60 km of important nesting sites on Melville and Vernon Islands. Benthic habitat mapping provided by the proponent indicated that suitable internesting foraging habitat is present throughout the proposed action area, including proposed dredging areas.

44) I noted that, as part of the referral submission, the proponent identified and classified three Flatback Turtle nesting sites in the vicinity of the proposed action area:

a) Casuarina Beach – Located 8 km to the east of the proposed action area. Identified as the main nesting site within the proposed action area vicinity.

b) Cox Peninsula beaches – Located 2-8 km to the west of the proposed action area. These beaches are identified as 'infrequently used for nesting'.

c) Mandorah Beach – Located 2-8 km to the west of the proposed action area. This beach is identified as 'infrequently used for nesting'.

45) However, I noted advice provided from a co-author of the mapping used to identify habitat critical to survival of the species, which indicated that, from a regional context, the three identified nesting beaches do not represent important nesting sites relative to other nesting beaches within the region.

46) The department considered, and I agreed, that although some Flatback Turtle nesting is recorded on Casuarina Beach, Mandorah Beach and the Cox Peninsula beaches, the contribution (fewer than 20 individuals annually) of nesting turtles from these beaches to the total Arafura stock (approx. 18,000 nesting females) is very low and does not represent significant Flatback Turtle nesting sites.

47) I also considered that the proposed action does not intersect habitat critical to survival or BIA for Green Turtle, Olive Ridley Turtle and Hawksbill Turtle.

48) I noted that Olive Ridley Turtle nesting was recorded within proximity to the proposed action area (Casuarina Beach, Mandorah Beach and the Cox Peninsula beaches). However, these areas are very infrequently used and are not considered important nesting sites. I noted that the nearest nesting habitat critical to the survival of the Olive Ridley Turtle is located 4.3 km to the north of the proposed action area, and that the nearest BIA (internesting) for the Olive Ridley Turtle occurs around the Bare Sand, Quail and Indian islands near the mouth of Bynoe Harbour, located 9.5 km south of the proposed action area. Based on benthic habitat surveys and modelling provided by the proponent, the department considered, and I agreed that the proposed action area provides suitable foraging habitat for Oliver Ridley Turtle.

49) I noted that the nearest nesting habitat critical to the survival and BIA (internesting) for the Hawksbill Turtle occurs around the Cobourg Peninsula, approximately 140 km east of the proposed action area. Based on benthic habitat surveys and modelling provided by the proponent, the department considered, and I agreed, that the proposed action area provides suitable foraging habitat for Hawksbill Turtle.

50) I observed that Green Turtle nesting was recorded within proximity to the proposed action area (Casuarina Beach, Mandorah Beach and the Cox Peninsula beaches), however these areas are very infrequently used and are not considered important nesting sites. I noted that the nearest Green Turtle BIA (internesting) is located approximately 75 km from the proposed action area. Based on benthic habitat surveys and modelling provided by the proponent, the department considered, and I agreed that, although Green Turtle may transit through the proposed action area, the proposed action area is unlikely to contain suitable habitat for Green Turtle, being rocky reef or inshore seagrass beds.

<u>Potential impacts</u>

51) I noted that the marine turtle recovery plan identifies several key threats to these Marine Turtles, which are relevant to the proposed action, including habitat modification, vessel disturbance, light pollution, and noise pollution.

52) I considered that the proposed action has potential to injure or displace Marine Turtles through direct impacts associated with construction activities, including:

a) seabed disturbance from trenching and anchoring activities;

b) acoustic disturbance from all construction activities;

c) artificial light emissions from construction vessels;

d) chemical discharges from pipeline flushing;

e) vessel collision or entrainment in construction equipment; and

f) accidental release of toxicants into the marine environment during unplanned events.

53) I also considered that indirect impacts may occur from the proposed action to marine turtle habitat and foraging areas due to increased turbidity and sedimentation resulting from dredging, spoil disposal, pipe lay, and rock placement.

Seabed disturbance

54) I observed that the proposed action has the potential to directly impact approximately 756 ha (131 ha pipeline footprint and approximately 625 ha spoil disposal ground footprint) of suitable marine turtle habitat, including Flatback Turtle internesting habitat critical to survival and BIA, through dredging, pipelay and spoil disposal activities. I also noted that approximately 1.25 ha (within a 12.5 km stretch of pipeline in NT waters) is proposed to be trenched.

55) I noticed that most (95 ha) of this area will consist of sponge or sponges/filterers/octocoral habitat, 5 ha consists of macroalgae habitat, with the remaining disturbed area (31 ha) classified as bare ground.

56) I considered that trenching and trawling can cause physical damage through direct removal of important habitat or indirectly through changing water quality, which is particularly problematic for Marine Turtles in important foraging and internesting areas. I noted that loss of habitat and/or foraging resources in internesting habitat could result in slowed turtle growth or females being unable to obtain sufficient body condition to make breeding migrations.

57) I noted that benthic habitats directly disturbed by the proposed action are well represented within the Darwin Harbour region. The proponent calculated that trenching and infrastructure footprints combined will impact less than 1% of the benthic habitats across Darwin Harbour. The department informed me that, specifically, the proposed action is expected to result in a loss of <0.18% of sponges/filterers/octocoral habitat, <0.12% of macroalgae habitat and approximately 0.12% of bare ground habitat found across Darwin Harbour. The department also indicated, and I accepted, that the hard-surfaced pipeline is likely to provide some habitat value over time, as new organisms colonise these areas.

58) As with the trenching and infrastructure footprints, surveys and modelling within the spoil disposal ground indicated that the area is dominated by low density sponge, filter feeder and octocoral habitat and bare ground. The department informed me, and I accepted, that there are no unique, or sensitive habitats (such as seagrass, hard corals or mangrove communities) and the habitats present are well represented regionally. Therefore, I considered that, while the habitats present will be directly impacted during the disposal of spoil, the spoil itself will provide similar habitat for marine species to colonise. I also noted that no contaminants of concern were found in sediment along the pipeline route or at the potential spoil disposal ground.

59) In considering the relatively small proportion of available suitable marine turtle habitat being impacted and the avoidance of high-value habitat features (including seagrass, hard corals, and mangrove communities), I was satisfied that the proposed action is unlikely to result in significant changes to the availability of suitable marine turtle habitats.

Acoustic disturbance

60) I recognised the potential for Marine Turtles to be adversely affected by acoustic disturbance during construction activities, due to the operation of vessels and equipment (including trenching), operation of survey and positioning equipment and from helicopters supporting the installation activity. I noted that the marine turtle recovery plan discusses the impacts of acute noise on Marine Turtles, noting that the impacts of noise interference are currently unknown. The noise modelling undertaken by the proponent indicates that noise pollution associated with construction activities has the potential to result in:

   a) permanent threshold shifts (permanent injury) to Marine Turtles within a 50 m radius, or 100 m radius where backhoe dredge rock breaking with hydraulic hammer (impulsive noise).

   b) temporary threshold shifts (temporary injury) to Marine Turtles within between 40-160 m radius, or 950 m radius where backhoe dredge rock breaking with hydraulic hammer (impulsive noise).

61) I noted that behavioural changes to Marine Turtles were categorized as (worst case) medium risk. However, I noted that this estimate was based on the highest astronomical tide, which is not considered representative of works over a 24-hour period. I therefore accepted the department's advice that a low risk is more realistic.

62) I considered that Marine Turtles are mobile species that would be expected to avoid construction areas and, if present during soft starts, to move away from the affected area before sound reaches levels that could cause physical harm. However, I noted that there is a risk of physical injury through temporary or permanent hearing loss if piling activities start at high intensity and there are individuals located near the noise source.

Artificial light emissions

63) As detailed above at [42] – [60], I was satisfied that the proposed action is not within proximity of important nesting beaches for any listed Marine Turtles.

64) I also considered that the proposed action's light modelling included consideration of existing terrestrial lighting and indicated that a worst-case light spill would be unlikely to disrupt the breeding cycle of the Flatback Turtle.

Chemical discharges

65) Chemical discharges associated with pipeline flushing activities are discussed below under the 'Commonwealth marine areas' heading at [144]-[152] and [164]-[166].

Vessel collision or entrainment

66) I noted that the marine turtle recovery plan identifies vessel collision as a threat to Marine Turtles, as increased commercial and recreational boat traffic can result in increased turtle/vessel interactions and disruption to important benthic feeding and internesting behaviours. The marine turtle recovery plan also states that impact from vessels can cause serious injury and/or death to individual Marine Turtles.

67) I observed that a number of vessels will be required to complete the proposed activities, with estimates of up to 12 vessels operating within the proposed action area at any one time. I noted

that most project vessels will be operating at low speeds, which reduces the likelihood of collision. However, I also considered that trenching vessels pose an increased risk of turtle entrainment and death during operation.

Accidental release of toxicants into the marine environment during unplanned events.

68) I noted that Marine Turtles are susceptible to the effects of hydrocarbon spills during all life stages. They are in frequent contact with the sea surface and show little avoidance behaviour in response to the presence of surface hydrocarbons, which makes them vulnerable to coating and inhalation of toxic vapours. Contact with surface slicks or entrained hydrocarbon can therefore result in hydrocarbon adherence to body surfaces causing irritation of mucous membranes in the nose, throat and eyes leading to inflammation and infection. I also considered that oiling can also irritate and injure skin which is most evident on pliable areas such as the neck and flippers.

Sedimentation

69) I noted that sediment disturbance from trenching and spoil disposal activities is likely to result in increased turbidity. This has the potential to indirectly impact habitats through the settling of suspended particles (sedimentation), or by reducing the availability of light to photosynthetic biota on the seabed (hard corals, seagrasses, algae). I noted that excessive sedimentation and/or prolonged reduction in light have the potential to cause mortality for these biota types.

70) I noted the sediment dispersal modelling provided by the proponent that predicted sedimentation impacts under a range of scenarios. Three broad impact zones were defined:

a) Zone of High Impact (ZoHI) - where direct impact from trenching and disposal will occur, such as removal or smothering of substrate. This zone includes the trench footprint and disposal area with a 20 m buffer extending outwards from these areas.

b) Zone of Moderate Impact (ZoMI) - where sensitive receptor communities are predicted to be indirectly impacted by elevated suspended sediment concentrations (SSC) and sedimentation due to trenching and disposal activities. Damage/mortality of sensitive receptor communities may occur, but the disturbed areas are considered to have good potential for recovery. Sensitive receptors are within the ZoMI if their respective ecological tolerance limits for SSC are exceeded for 10% of the time or where the simulated sedimentation thickness exceeds their respective sedimentation tolerance limits at the end of the simulation.

c) Zone of Influence (ZoI) - where sensitive receptor communities are predicted to be indirectly influenced by elevated SSC and sedimentation. Sensitive receptor communities may, at some time experience detectable elevations in SSC and sedimentation (beyond expected background levels). However, no sublethal stress or mortality of benthic communities is expected to occur.

71) I therefore considered that sedimentation is likely to indirectly impact suitable habitat for Marine Turtles in the form of soft-bottomed benthic habitat. I also considered that indirect impacts from sedimentation to seagrass, hard corals and mangrove communities is not expected to occur, as these habitats are outside all three modelled impacts zones.

72) Having considered the relatively small proportion of available suitable marine turtle habitat being impacted and the avoidance of high-value habitat features (including seagrass, hard corals, and

mangrove communities), I was satisfied that the proposed action is unlikely to result in significant changes to the availability of suitable marine turtle habitats.

Avoidance, mitigation and management measures

73) I noted that the proponent detailed avoidance, mitigation and monitoring measures in the preliminary documentation and prepared several action management plans, which detailed how construction will be undertaken and how potential impacts and risks to MNES will be managed. The action management plans provided included:

a) Trenching, Spoil Disposal Management and Monitoring Plan (TSDMMP).

b) Acid Sulphate Soil and Dewatering Management Plan (ASSDMP).

c) Onshore Construction Environmental Management Plan (CEMP).

d) Offshore Construction Environmental Management Plan (CEMP).

e) Marine Megafauna Noise Management Plan (MMNMP).

Seabed disturbance

74) I noted that the pipeline corridor and shore crossing were selected due to the proximity to the pre-disturbed Bayu-Undan to Darwin pipeline and the previously disturbed Darwin LNG facility shore crossing location, to avoid additional environmental and social impacts in previously undisturbed terrestrial and marine areas. Similarly, I noted that the proposed spoil disposal ground is adjacent the spoil disposal ground approved for the Ichthys project (EPBC 2008/4208; approved 26 June 2011).

75) I took into account that dedicated geophysical and benthic habitat surveys were conducted and used to refine the pipeline route, including avoiding hard and protruding seabed features of environmental significance.

76) I noted that the proponent had committed to the following avoidance, mitigation, and management measures relevant to addressing impacts resulting from seabed disturbance:

a) In shallower waters, anchor exclusion areas will be implemented to avoid sensitive habitats and heritage sites.

b) Placement of pipe to be based on subsea heritage and habitat assessment studies to enable the avoidance of designated sensitive benthic habitats, and heritage and culturally sensitive areas.

c) Adaptive management process is defined within the TSMMP. Environmental monitoring of water quality with management measures applied if water quality exceeds trigger levels.

d) Spoil will not be disposed of in a single location, to avoid developing a single large mound at the spoil disposal ground.

e) Anchor Management Plan to be developed to allow safe anchoring of vessels undertaking pipelay, trenching and pile driving activities in the vicinity of nearshore heritage or sacred sites.

f) Use of Differential Global Positioning System (DGPS) for pipelay vessel to maintain accurate vessel position during installation.

g) Based on subsea heritage and habitat assessment studies, span-specific rectification plans to be developed that include:

   i) Pre-span method selection.

   ii) Real-time monitoring of span rectification.

   iii) Post-rectification inspections.

   iv) Permanent rock installation to be limited to only those pipeline sections requiring stabilisation and/or anchor protection.

Acoustic disturbance

77) I noted that the proponent had committed to the following avoidance, mitigation, and management measures relevant to addressing impacts resulting from acoustic disturbance:

a) Personnel trained in marine fauna observation (MFO) present on pipelay, trenching and rock installation vessels during daylight hours, including one crew member with MFO training on the bridge at all times.

b) Standard protocols for managing trenching vessel noise impacts included within the Marine Megafauna Noise Management Plan.

c) Observation and shut-down zones for marine fauna have been developed based on noise modelling results and standard protocols. For trenching activities, excluding hydraulic hammering this includes:

   i) An Observation Zone of 150 m and an Exclusion Zone of 50 m for marine mammals and turtles will be in place around trenching vessels for trenching activities.

   ii) Observation Zone monitored for 10 minutes prior to commencing trenching during daylight hours only.

d) Increased Observation and Exclusion Zones for hydraulic hammering based on noise modelling results will be applied as follows:

   i) If up to 8 hours of rock breaking is required, an increased Observation Zone of 2.5 km (marine mammals) and 1 km (marine turtles) will apply and an increased Exclusion Zone of 150 m for marine mammals and turtles will apply.

   ii) If up to 6 hours of rock breaking is required, an increased Observation Zone of 2 km (marine mammals) and 750 m (marine turtle) will apply and an increased Exclusion Zone of 100 m for marine mammals and turtles will apply.

   iii) If up to 4 hours of rock breaking is required, an increased Observation Zone of 1.5 km (marine mammals) and 750 m (marine turtles) will apply and an increased Exclusion Zone of 100 m for marine mammals and turtles will apply.

   iv) If up to 2 hours of rock breaking is required, an increased Observation Zone of 1 km (marine mammals) and 500 m (marine turtles) will apply and an increased Exclusion Zone of 50 m for marine mammals and turtles will apply.

e) A separate vessel with MFO onboard will be required to patrol the Observation Zone prior to and during hydraulic hammering.

f) Soft start (ramp-up) procedures for hydraulic tools and trenching equipment, where practical.

g) Hydraulic hammering for no greater than 8 hrs over a 24-hr period and no hydraulic hammering to be undertaken at night.

h) All marine fauna interactions and observations to be appropriately recorded and reported to the department, as required.

i) Vessels and helicopters to abide by Part 8 of the *Environment Protection and Biodiversity Conservation Regulations 2000* (**Regulations**), which includes controls for minimising interactions with marine fauna.

Artificial light emissions

78) I noted that the proponent had committed to the following avoidance, mitigation, and management measures relevant to addressing impacts resulting from artificial light emissions:

a) Vessel searchlights will only be operated in an emergency situations.
b) Housekeeping measures will be adopted, including requiring all crew to keep shutters on windows closed at night, to limit light emissions from vessels.
c) The proponent will document vessel light spill on Darwin Harbour turtle nesting beaches as part of the DPD Project's environmental monitoring program.

Chemical discharges

79) Chemical discharges are discussed in detail below under the 'Commonwealth marine areas' heading [144]-[152] and [164]-[166].

Vessel collision or entrainment

80) I noted that the proponent had committed to the following avoidance, mitigation, and management measures relevant to addressing impacts resulting from vessel collision or entrainment:

d) Use of turtle 'tickler' chains on the trailing arms of the TSHD.
e) Vessels to adhere to Port of Darwin vessel speed limits.
f) All marine fauna interactions and observations to be appropriately recorded and reported to relevant authorities.

Accidental release of toxicants or objects into the marine environment during unplanned events.

81) I noted that the proponent had committed to the following avoidance, mitigation, and management measures relevant to address impacts resulting from accidental release of toxicants or objects into the marine environment during unplanned events:

a) No Intermediate Fuel Oil (IFO) and heavy Fuel Oil (HFO) will be used in the proposed action area.

b) Chemicals and hydrocarbons will be transferred and stored in accordance with standard maritime practices as per vessel SOPEP.

c) Vessel-specific bunkering procedures and equipment consistent with the proponent's marine vessel vetting requirements including:

i) Use of bulk hoses that have quick connect 'dry break' couplings.

ii) Correct valve line-up.

iii) Defined roles and responsibilities, and the specific requirement for bunkering to be completed by trained personnel only.

iv) Visual inspection of hoses prior to bunkering to confirm they are in good condition.

v) Testing of the emergency shutdown mechanism on the transfer pumps.

vi) Assessment of weather/sea state.

vii) Maintenance of radio contact with Vessel during bunkering operations.

viii) Bunkering checklist.

ix) Visual monitoring during bunkering.

d) Spill clean-up kits available in all areas, including high risk areas.

e) Implement tiered spill response in the event of a hydrocarbon spill as outlined in an oil pollution emergency plan for DPD Project construction and operations.

f) Oil spill tracking buoys will be made available on primary project vessel/s with Santos CSR/s and/or at local supply base for immediate deployment to assist with tracking of an oil spill.

g) Operational and scientific monitoring to be undertaken in event of a hydrocarbon spill as outlined in the oil pollution emergency plan for DPD Project construction and operations.

h) Dropped objects recovered where safe and practicable to do so.

i) Identification of no lift zones where relevant in proximity to subsea assets and infrastructure as documented in relevant lifting and operational procedure/s.

j) Emergency response implemented to minimize potential for impacts in the event of a loss of containment from the Bayu-Undan to Darwin gas export pipeline or other gas pipeline as a result of a dropped object during the proposed action installation.

Indirect impacts – Sedimentation

82) I noted that, in addition to the measures detailed under the subheading "Seabed Disturbance" at [74]-[76], the proponent had committed to reduction of fine sediment dispersal through an adaptive management process.

<u>Proposed outcomes and conditions</u>

83) The department recommended and I agreed to impose conditions of approval that require the implementation of the action management plans submitted during the assessment, including the Offshore Pipeline Construction Environmental Management Plan, Trenching and Spoil Disposal Management Plan, and Marine Megafauna Noise Management Plan.

84) The department considered, and I agreed that the proposed avoidance and mitigation measures provided in the preliminary documentation and draft management plans were broadly sufficient to ensure no residual significant impacts occur. However, I agreed with the following approval conditions recommended by the department to strengthen these commitments:

a) To avoid and mitigate impacts on the environment of Commonwealth marine areas and avoid harm to protected matters within the proposed action area, the approval holder must:

i) Ensure that no significant impact to protected matters occurs from potentially harmful substances released into the marine environment during any pre-construction and/or construction activities.

ii) Ensure that a suitably qualified Marine Fauna Observer is present at all times during pre-construction and construction operations and is equipped to continuously monitor and record marine fauna present in the observation zone.

iii) Cease any hydraulic hammering or operation of trenching equipment from the direction and authority of a Marine Fauna Observer if marine fauna is sighted within the exclusion zone.

iv) Ensure that if operations have ceased in accordance with condition a.iii), that hydraulic hammering or operation of trenching equipment does not recommence until marine fauna have moved away from the exclusion zone and have not been observed for a minimum of 30 minutes.

v) Initiate a soft start procedure during any initial or subsequent startup activities involving hydraulic hammering or operation of trenching equipment.

Conclusion

85) Based on the nature and scale of the impacts, and after the implementation of the avoidance and mitigation measures and approval conditions including implementation of approved action management plans, I was satisfied that the proposed action is unlikely to result in residual significant impacts to Flatback Turtle, Green Turtle, Olive Ridley Turtle and Hawksbill Turtle, and that compensatory measures for these Marine Turtles are not required. I was therefore satisfied that the proposed action will not have unacceptable impacts on Marine Turtles.

Inshore Dolphins

- Australian Snubfin Dolphin (*Orcaella heinsohni*) – migratory
- Australian (Indo-Pacific) Humpback Dolphin (*Sousa sahulensis*) – migratory
- Spotted Bottlenose Dolphin (*Tursiops aduncus*) – migratory

Description

86) I observed that the Australian Snubfin Dolphin, Spotted Bottlenose Dolphin, and Australian Humpback Dolphin occur in coastal and estuarine waters of northern Australia. I noted that Australian Snubfin Dolphin and Australian Humpback Dolphin generally occur in shallow (less than 20 m depth) waters, while Spotted Bottlenose Dolphin occurs in depths up to 200 m. These species are generalist feeders, preying on a variety of fish and cephalopods. I noted that global population sizes of these species are unknown; however, they generally occur in small pods (fewer than 100 individuals) and relatively isolated populations.

87) I noted that further detailed information on the characteristics, status and habitat requirements for inshore dolphins can be found in the department's Species Profile and Threats Database (SPRAT) and the bioregional plan.

Proposed Action Area

88) I noted that BIAs for inshore dolphins are defined in the bioregional plan as areas that are particularly important for the conservation of protected species and where aggregations of

individuals display biologically important behaviour, such as breeding, foraging, resting or migration. I also noted that no habitat critical to the survival of inshore dolphins has been defined.

89) I observed that the proposed action area intersects Australian Snubfin Dolphin, Spotted Bottlenose Dolphin, and Australian Humpback Dolphin BIAs for breeding, calving and foraging. I considered the advice provided by the department's Migratory Marine Species (MMS) Section, that indicated that these important biological behaviours are performed year-round.

90) I noted the benthic habitat mapping undertaken by the proponent that identified some suitable inshore dolphin foraging habitat, including soft corals and sponges within the proposed trenching areas. I noted that foundation forming habitats which are considered of high importance, such as seagrass, mangrove, and hard coral habitats, were not identified along the proposed pipeline route, but were identified within the broader Darwin Harbour area.

Impact

91) I considered that the bioregional plan identifies several "pressures of potential concern" which are relevant to the proposed action, including noise pollution, physical habitat modification, collision with vessels, and chemical and nutrient pollution.

Acoustic disturbance

92) I took into account advice provided by the MMS Section at the referral stage of the proposed action which raised concerns about the threat of acoustic disturbance, given noise pollution generated by the proposed action is within the hearing sensitivities of inshore dolphins (up to 180 kHz) and consequently could have potential to disrupt important biological activities, such as breeding, calving and foraging. Given the importance of the Darwin Harbour as a BIA, and the relatively small and isolated populations, I accepted that advice and found that any actions which are likely to permanently displace or injure inshore dolphins are likely to seriously disrupt the lifecycle (breeding, feeding, migration or resting behaviour) of an ecologically significant proportion of the population of a migratory species.

93) I noted that inshore dolphins are highly mobile species that would be expected to, in most cases, avoid proposed work areas and, if nearby during soft starts, to move away from the affected area before sound reaches levels that could cause physical harm. However, I considered that there is still a risk of physical injury if dredging or piling activities start at high intensity and there are individuals located near the noise source. Additionally, as biologically important behaviours are performed year-round, I found that behavioural changes in response to construction noise has the potential to reduce breeding, calving and foraging success.

94) I noted that the noise modelling undertaken by the proponent indicates that noise pollution associated with construction activities has the potential to result in:

a) Permanent threshold shifts (permanent injury) to inshore dolphins within a 50 m radius, or 130 m radius where backhoe dredge rock breaking with hydraulic hammer (impulsive noise).

b) Temporary threshold shifts (temporary injury) to inshore dolphins within a 100 to 350 m, or 1,830 m radius where backhoe dredge rock breaking with hydraulic hammer (impulsive noise).

c) Behavioural changes to inshore dolphins within a (worst case) 20 km radius of works. I noted that this estimate is based on the highest astronomical tide and is not considered representative of works over a 24-hour period. Therefore, the department considered, and I agreed, that a 3.2 km radius is considered more realistic.

95) I noted that the proponent also provided data on the existing vessel traffic and associated underwater noise within Darwin Harbour. Trenching vessels are expected to produce noise intensities similar to large commercial vessels that use Darwin Harbour on a daily basis, including cargo ships, LNG tankers, cruise ships and offshore oil and gas vessels. The department considered, and I agreed, that increased vessel traffic associated with the proposed action is not likely to substantially increase ambient noise levels within Darwin Harbour.

Seabed disturbance/Sedimentation

96) I noted that inshore dolphins are particularly susceptible to impacts from habitat degradation and displacement because their populations are small and localised, and their low reproductive rate has potential to result in a slow population recovery from threatening processes. Depending on the area and extent, the removal of bottom material can reduce or eliminate elements of benthic communities important to inshore dolphin populations, primarily seagrass, mangrove, and reef habitats. Benthic habitats directly disturbed by the proposed action (e.g. pipelay) are generally well represented within the Darwin Harbour region and contain sparse biota. Seagrass, mangrove and hard coral reef habitats are not expected to be impacted.

97) The department advised, and I agreed, that benthic habitats directly disturbed by the proposed action are well represented within the Darwin Harbour region. The proponent calculated trenching and infrastructure footprints combined will impact less than 1% of the benthic habitats across Darwin Harbour. Specifically, the proposed action is expected to result in a loss of <0.18% of sponges/filterers/octocoral habitat, <0.12% of macroalgae habitat and approximately 0.12% of bare ground habitat found across Darwin Harbour. The department also advised, and I accepted, that the hard-surfaced pipeline is likely to provide some habitat value over time, as new organisms colonise these areas.

98) I further noted that water quality will be temporarily impacted by pre-lay work, through increased sedimentation associated with seabed trenching. Dispersal, settlement and accumulation of suspended sediment has the potential to impact important reef and seagrass habitats by reducing light penetration and subsequently photosynthesis. Monitoring undertaken for the nearby Ichthys gas pipeline project, which had a larger dredging footprint than the proposed action, recorded only small increases in the median daily average turbidity during its dredging periods compared to baseline data, and no measurable impact to coral, mangrove or seagrass habitats as a result of dredging activity. Given that these dolphin species are well adapted to foraging in turbid marine environments, the existing high turbidity within the Darwin Harbour, and the temporary nature of impacts, the department considered, and I agreed, that the proposed action is unlikely to substantially modify important inshore dolphin habitat as a result of sedimentation.

99) In considering the relatively small proportion of available suitable inshore dolphin habitat being impacted and the avoidance of high-value habitat features (including seagrass, hard corals, and mangrove communities), I agreed with the department's recommendation that the proposed

action is unlikely to result in significant changes to the availability of suitable inshore dolphin habitats.

Vessel collision or entrainment

100) I noted that a number of vessels will be required to complete the proposed activities, with estimates of up to 12 vessels operating simultaneously within the proposed action area at any one time. I noted that most project vessels will be operating at low speeds, which reduces the likelihood of collision with marine fauna.

101) Given the high mobility of inshore dolphins and the relatively low speed of operational vessels, I agreed with the department's conclusion that vessel collisions or entrainment of inshore dolphins are unlikely to occur as a result of the proposed action.

Chemical discharges

102) My findings regarding chemical discharges associated with pipeline flushing activities (as they may relate to inshore dolphins), are discussed under the 'Commonwealth marine areas' considerations, below at [144-152] and [164]-[166].

Accidental release of toxicants into the marine environment during unplanned events.

103) I noted that cetaceans are vulnerable to the effects of surface hydrocarbons due to the need to surface and breathe. Direct contact with surface slicks and inhalation of vapours may irritate eyes, airways and lungs. Lethal or sub-lethal effects depend on the concentration of the hydrocarbons and the duration of exposure.

Avoidance, mitigation and management measures

104) I noted that the avoidance, mitigation and management measures detailed at [73]-[84] in respect of Marine Turtles also apply to inshore dolphins. No additional mitigation measures specific to inshore dolphins are proposed.

Proposed outcomes and conditions

105) I accepted the department's recommendation that any approval should require the proponent to implement the action management plans submitted during the assessment, including the Offshore Pipeline Construction Environmental Management Plan; Trenching and Spoil Disposal Management Plan; and Marine Megafauna Noise Management Plan.

106) I agreed with the department that the proposed avoidance and mitigation measures provided in the preliminary documentation and draft management plans would be sufficient to ensure that no residual significant impacts occur to inshore dolphins. I also agreed with the department to adopt the following conditions in giving an approval to further strengthen the commitments of the preliminary documentation and the management plans just mentioned:

a) To avoid and mitigate impacts on the environment of Commonwealth marine areas and avoid harm to protected matters within the project area, the approval holder must:

i) Ensure that no significant impact to protected matters occurs from potentially harmful substances released into the marine environment during any pre-construction and/or construction activities.

ii) Ensure that a suitably qualified Marine Fauna Observer is present at all times during pre-construction and construction operations and is equipped to continuously monitor and record marine fauna present in the observation zone.

iii) Cease any hydraulic hammering or operation of trenching equipment from the direction and authority of a Marine Fauna Observer if marine fauna are sighted within the exclusion zone.

iv) Ensure that, if operations have ceased in accordance with condition i.c), that hydraulic hammering or operation of trenching equipment does not recommence until marine fauna have moved away from the exclusion zone and have not been observed for a minimum of 30 minutes.

v) Initiate a soft start procedure during any initial or subsequent startup activities involving hydraulic hammering or operation of trenching equipment.

Conclusion

107) Based on the nature and scale of the impacts, and after the implementation of the avoidance and mitigation measures and approval conditions, including implementation of approved action management plans, I was satisfied that the proposed action is unlikely to result in residual significant impacts to Australian Snubfin Dolphin, Spotted Bottlenose Dolphin, and Australian Humpback Dolphin, and that compensatory measures for these inshore dolphins are not required. I was satisfied that the proposed action will not have unacceptable impacts on inshore dolphins.

Dugong (Dugong dugon) – migratory

Description

108) I noted the following background information about the Dugong that was provided by the department:

a) The Dugong is a seagrass-dependent species whose range broadly coincides with the distribution of seagrasses in the tropical and sub-tropical waters.

b) The population biology of dugongs makes them particularly vulnerable to mortality as adults. Unexploited dugong populations are characterised by long lifespans (greater than 70 years), long gestation (12–14 months), single offspring, long intervals between births (more than 2.5 years), prolonged periods until sexual maturity (6–17 years), and high and temporally stable adult survival. Adult survival is the most important determinant of population growth.

Proposed Action Area

109) I accepted the department's advice as to how the proposed action related to the Dugong:

a) The proposed action area is within known distribution of Dugong, with this species occurring within the Darwin Harbour, generally being recorded in shallow waters (0-10 m).

b) The proposed action area does not intersect habitat critical to survival or biologically important areas (BIAs) for Dugong.

c) As mapping of benthic habitat did not identify any established seagrass beds in the disturbance footprint, the department considered, and I agreed that Dugongs are unlikely to occur frequently or reside in the project area for extended periods of time.

Impact

110) I noted that, in the North Marine Region, the pressures assessed as of potential concern for Dugong are bycatch (commercial fishing), extraction of living resources (Indigenous harvest; illegal, unreported and unregulated fishing), marine debris, sea level rise, changes in sea temperature and physical habitat modification (storm events). I agreed with the department's advice that the proposed action is not considered likely to result in any of the above pressures.

111) I agreed with the department's advice that, without mitigation measures, there was a risk of direct impact to Dugong as a result of vessel collision or acoustic disturbance associated with the proposed action.

112) I noted the potential for indirect impacts to Dugong from disturbance to seagrass habitat as a result of increased sedimentation associated with proposed dredging activities. I agreed with the department that, based on sedimentation modelling provided by the proponent, indirect impacts from sedimentation to suitable Dugong habitat (seagrass meadows) should not occur because these habitats are outside all three modelled impact zones.

Avoidance, mitigation and management measures

113) I accepted the department's advice that the avoidance, mitigation and management measures for managing acoustic disturbance and vessel collision/entrainment for "Marine Turtles", set out at [73]-[84] also apply to addressing impacts to the Dugong. No additional mitigation measures specific to the Dugong are proposed.

Proposed outcomes and conditions

114) In considering how potential impacts to the Dugong would be managed, I accepted the department's recommendation that any approval should require the implementation of the action management plans submitted during the assessment, including the Offshore Pipeline Construction Environmental Management Plan; Trenching and Spoil Disposal Management Plan; and Marine Megafauna Noise Management Plan.

115) I considered that the proposed avoidance and mitigation measures provided in the preliminary documentation and draft management plans would ensure that no residual significant impacts occur to the Dugong. However, I agreed with the department's recommendation to apply the following approval conditions to strengthen these commitments:

a) To avoid and mitigate impacts on the environment of Commonwealth marine areas and avoid harm to protected matters within the project area, the approval holder must:

i) Ensure that no significant impact to protected matters occurs from potentially harmful substances released into the marine environment during any pre-construction and/or construction activities.

ii) Ensure that a suitably qualified Marine Fauna Observer is present at all times during pre-construction and construction operations and is equipped to continuously monitor and record marine fauna present in the observation zone.

iii) Cease any hydraulic hammering or operation of trenching equipment from the direction and authority of a Marine Fauna Observer if marine fauna are sighted within the exclusion zone.

iv) Ensure that if operations have ceased in accordance with condition i.c), that hydraulic hammering or operation of trenching equipment does not recommence until marine fauna have moved away from the exclusion zone and have not been observed for a minimum of 30 minutes.

v) Initiate a soft start procedure during any initial or subsequent startup activities involving hydraulic hammering or operation of trenching equipment.

Conclusion

116) Based on the nature and scale of the impacts, and after the implementation of the avoidance and mitigation measures and approval conditions including implementation of approved action management plans, I was satisfied that the proposed action is unlikely to result in residual significant impacts to the Dugong, and that compensatory measures for the Dugong are not required. I was satisfied that the proposed action will not have unacceptable impacts on the Dugong.

Sawfish

Dwarf Sawfish (*Pristis clavata*) – vulnerable, migratory

Green Sawfish (*Pristis zijsron*) – vulnerable, migratory

Freshwater Sawfish (*Pristis pristis*) – vulnerable, migratory

Description

117) I noted the following background information about the Sawfish, which collectively include the Dwarf Sawfish, Green Sawfish and Freshwater Sawfish, that was provided by the department:

a) The Dwarf Sawfish is known to occur only in northern Australia. The dwarf sawfish is primarily a coastal marine and estuarine species but has also been recorded in the Commonwealth marine environment.

b) The Green Sawfish occurs across northern Australia and given the considerable decline in its global (including Australian) range, the North Marine Region may support the last significant populations of the species. The species has predominantly been recorded in inshore coastal areas, including estuaries and river mouths with a soft substrate; however, green sawfish has been recorded in offshore waters up to 70 m deep.

c) The Freshwater Sawfish has been recorded in northern Australia in rivers (including isolated water holes), estuaries and marine environments. The species has also been recorded in offshore waters in northern Australia. Juvenile Freshwater Sawfish primarily occur in the freshwater reaches of rivers and in estuaries, while most adults have been recorded in marine and estuarine environments.

d) Sawfishes are characterised by their late age at maturity, slow growth rate, low fecundity, longevity and low rate of natural mortality, all of which result in low rates of reproduction and capacity to withstand human-induced pressures.

Proposed Action Area

118) I further noted that:

a) While relatively little is known about the distribution and abundance of sawfishes and river sharks in northern Australian waters, the North Marine Region is considered an important area for the species group as the region and adjacent waters contain nationally and globally significant populations of sawfish.

b) Dwarf Sawfish and Green Sawfish are known to occur within the proposed action area. Freshwater Sawfish is likely to occur within the proposed action area. The proposed action does not intersect habitat critical to survival or BIAs for these sawfish species.

Impact

119) Regarding potential impacts to the Sawfish, I noted that:

a) In the North Marine Region, the pressures assessed as of concern for sawfishes and river sharks are bycatch (commercial fishing; recreational fishing), extraction of living resources (illegal, unreported and unregulated fishing) and changes in hydrological regimes. The pressures assessed as of potential concern for sawfishes and river sharks are sea level rise, changes in sea temperature, marine debris, extraction of living resources (commercial fishing [freshwater sawfish only]; Indigenous harvest) and chemical pollution (onshore and offshore mining).

b) Habitat degradation and modification is the only threat identified within relevant statutory documents that has potential to occur to the Sawfish as a result of the proposed action.

c) The proposed action area contains suitable foraging habitat, in the form of muddy benthic substrate, which will be disturbed through trenching activities.

d) Benthic habitats directly disturbed by the proposed action are well represented within the Darwin Harbour region. The proponent has calculated trenching and infrastructure footprints combined will impact less than 1% of the benthic habitats across Darwin Harbour. Specifically, the proposed action is expected to result in a loss of <0.18% of sponges/filterers/octocoral habitat, <0.12% of macroalgae habitat and approximately 0.12% of bare ground habitat found across Darwin Harbour. I noted that the hard-surfaced pipeline is likely to provide some habitat value over time, as new organisms colonise these areas.

120) In considering the relatively small proportion of available suitable sawfish habitat being impacted, I was satisfied that the proposed action is unlikely to result in significant changes to the availability of suitable Sawfish habitats.

Avoidance, mitigation and compensatory measures

121) Despite the low likelihood of significant changes to the availability of suitable Sawfish habitats, I also considered that the avoidance, mitigation and management measures for managing seabed disturbance described for “Marine Turtles” (at [73]-[84]) also apply to addressing impacts to Sawfish.

Proposed outcomes and conditions

122) In considering the evidence before me, I accepted the department’s recommendation that approval should require the proponent to implement the action management plans submitted during the assessment, including the Offshore Pipeline Construction Environmental Management

Plan; Trenching and Spoil Disposal Management Plan; and Marine Megafauna Noise Management Plan. As noted in [120], the proposed action is unlikely to result in significant changes to the availability of suitable Sawfish habitats, and with these plans in place, I did not consider additional relevant conditions were required.

Conclusion

123) Based on the nature and scale of the impacts, and after the implementation of the avoidance and mitigation measures, including implementation of approved action management plans, I was satisfied that the proposed action is unlikely to result in residual significant impacts to Sawfish, and that compensatory measures for these Sawfish are not required. I was satisfied that the proposed action will not have unacceptable impacts on Sawfish.

Threatened and migratory birds

Osprey (*Pandion haliaetus*) - migratory

Streaked Shearwater (*Calonectris leucomelas*) - migratory

Asian Dowitcher (*Limnodromus semipalmatus*) – vulnerable, migratory

Common Sandpiper (*Actitis hypoleucos*) – migratory

Eastern Curlew (*Numenius madagascariensis*) – critically endangered, migratory

Curlew Sandpiper (*Calidris ferruginea*) – critically endangered, migratory

Grey Plover (*Pluvialis squatarola*) - vulnerable, migratory

Oriental Plover (*Charadrius veredus*) – migratory

Bar-tailed Godwit (*Limosa lapponica*) – migratory

Red Knot (*Calidris canutus*) – vulnerable, migratory

Sharp-tailed Sandpiper (*Calidris acuminata*) – vulnerable, migratory

Description

124) I noted that a number of threatened and migratory bird species have the potential to be impacted by the proposed action. I took into account the following information on these species.

a) Eastern Ospreys occur in littoral and coastal habitats and terrestrial wetlands of tropical and temperate Australia and offshore islands. They are mostly found in coastal areas but occasionally travel inland along major rivers, particularly in northern Australia. Eastern Osprey require extensive areas of open fresh, brackish or saline water for foraging. They frequent a variety of wetland habitats including inshore waters, reefs, bays, coastal cliffs, beaches, estuaries, mangrove swamps, broad rivers, reservoirs and large lakes and waterholes. They exhibit a preference for coastal cliffs and elevated islands in some parts of their range, but may also occur on low sandy, muddy or rocky shores and over coral cays. They may occur over atypical habitats such as heath, woodland or forest when travelling to and from foraging sites. Adult Eastern Ospreys are mostly resident or sedentary around breeding territories. They forage more widely but continue to make at least intermittent visits to their breeding grounds in the non-breeding season.

b) The Asian Dowitcher, Common Sandpiper, Eastern Curlew, Curlew Sandpiper, Grey Plover, Oriental Plover, Bar-tailed Godwit, Red Knot, and Sharp-tailed Sandpiper occur in sheltered

coastal Environments, such as embayments, coastal lagoons, estuaries and tidal creeks. These are known to frequent shallow water and exposed mudflats or sandflats.

c) Streaked Shearwater generally occurs in the pelagic environment, offshore waters >18 km from mainland coast, with occasional records closer to the shoreline.

Proposed Action Area

125) In relation to the project area and its vicinity, I took into account the following:

a) With the exception of Streaked Shearwater, all of the above listed threatened and migratory shorebirds are known to occur in proximity to the proposed action, along the Darwin Harbour Coastline, but are not mapped as known to occur within the proposed action footprint.

b) The proposed action footprint is likely to be traversed by these migratory shorebirds during foraging and/or migration.

c) The proposed action does not intersect habitat critical for survival or biologically important areas for threatened and migratory shorebirds.

Impacts

126) Regarding potential impacts to threatened and migratory birds, I noted and agreed with the department's analysis as follows:

a) The proposed action has potential to impact threatened and migratory shorebirds through habitat disturbance and light pollution. The proposed action area is unlikely to contain important habitat for threatened and migratory shorebirds, though may provide some foraging habitat values.

b) Benthic habitats directly disturbed by the proposed action are well represented within the Darwin Harbour region. The proponent has calculated trenching and infrastructure footprints combined will impact less than 1% of the benthic habitats across Darwin Harbour. Specifically, the proposed action is expected to result in a loss of <0.18% of sponges/filterers/octocoral habitat, <0.12% of macroalgae habitat and approximately 0.12% of bare ground habitat found across Darwin Harbour. I noted that the hard-surfaced pipeline is likely to provide some habitat value over time, as new organisms colonise these areas.

c) As detailed in the *National Light Pollution Guidelines for Wildlife 2023, version 2.0,* where nocturnal roosts are artificially illuminated, shorebirds may be displaced, potentially reducing their local abundance if the energetic cost to travel between suitable nocturnal roosts and foraging sites is too great. Artificial lighting could also act as an ecological trap by drawing migratory shorebirds to foraging areas with increased predation risk.

127) Having considered the preliminary documentation light modelling, the relatively small increase in vessels operating at night, and the distance from known and important threatened and migratory bird habitat, I agreed with the department that light pollution associated with the proposed action is unlikely to result in a significant impact to threatened and migratory shorebirds.

Avoidance, mitigation and compensatory measures

128) I considered and accepted the department's advice that the avoidance, mitigation and management measures for managing seabed disturbance and artificial light emissions described for "Marine Turtles" (set out at [76]-[78]) also apply to addressing impacts to threatened and migratory birds.

129) I noted that, in their Preliminary Documentation, the proponent committed to the following avoidance, mitigation, and management measures relevant to addressing impacts resulting from artificial light emissions:

a) Vessel searchlights will only be operated in an emergency situations.

b) Housekeeping measures will be adopted, including requiring all crew to keep shutters on windows closed at night, to limit light emissions from vessels.

Proposed outcomes and conditions

130) To mitigate the potential impacts posed to threatened and migratory birds by the proposed action, I agreed with the department that any approval should require the implementation of the management plans submitted during the assessment, including the Offshore Pipeline Construction Environmental Management Plan and Trenching and Spoil Disposal Management Plan.

Conclusion

131) I considered and agreed with the department that, through the implementation of the avoidance and mitigation measures including the implementation of approved action management plans, the proposed action would be unlikely to result in residual significant impacts to threatened and migratory birds and therefore compensatory measures for these threatened and migratory birds are not required. I was satisfied that the proposed action will not have unacceptable impacts to threatened and migratory birds.

Blue Whale (Balaenoptera musculus) – endangered, migratory

132) I considered that impacts to the Blue Whale are not likely to result from the proposed action because the known and likely distribution of the Blue Whale does not overlap with the proposed action area, which is reflected by the fact that information for this species was not requested as part of the further information request to form the preliminary documentation package. I noted, and agreed with the department's advice that the avoidance, mitigation and management measures in respect of Marine Turtles (set out at [75]-[84]) (which are also relevant for other threatened marine and migratory species) would afford some protection to Blue Whales in the highly unlikely event that they were found outside their plausible habitat areas and were near the project area. On this basis, I was satisfied that compensatory measures were not required for the Blue Whale because the proposed action is highly unlikely to impact Blue Whales.

Conclusion on sections 18, 18A, 20 and 20A

133) In the recommendation report that I considered at the proposed decision stage, there were typographic errors where the incorrect sections of the EPBC Act were referenced in the concluding paragraphs and subheadings relating to listed threatened (sections 18 and 18A) and migratory species (sections 20 and 20A), and to the Commonwealth marine area (sections 23 and 24A). I recognised that the conclusions clearly related to the preceding discussions in the recommendation report, even though the cited sections of the EPBC Act were noted incorrectly.

When making my final decision to approve the action, I noted the department's identification of these earlier typographic issues in their briefing to me, and I remained confident in my understanding of the proposed action's potential sources of environmental impact and also in my understanding that the final approval conditions would achieve robust environmental outcomes and satisfy the statutory requirements of the EPBC Act under which I made my decision.

134) I therefore concluded that there will not be a significant impact to listed threatened species and ecological communities and listed migratory species, provided the proposed action is undertaken in accordance with the conditions that I decided should be imposed. These conditions require the proponent to implement the avoidance and mitigation measures described in their preliminary documentation and management plans, as well as other additional conditions that address gaps in commitment or clarity of the proponent's proposed management measures.

135) In addition, the proposed action is not inconsistent with any applicable in-force conservation advice, recovery plans or threat abatement plans for listed threated species and ecological communities.

Commonwealth marine areas (sections 23 and 24A)

Description

136) I noted the department's advice in relation to the Commonwealth marine area provision as follows:

a) The Commonwealth marine area (CMA) is defined in section 24 of the EPBC Act and comprises any part of the sea, including the waters, seabed, and airspace, within Australia's exclusive economic zone and/or over the continental shelf of Australia, that is not state or Northern Territory waters.

b) Components of the proposed action being taken within the CMA likely to have a significant impact on the environment generally (entire Australian jurisdiction), as per sections 23(1), 24A(1) and 24A(2) of the EPBC Act, must be considered. Additionally, components of the proposed action being taken outside the CMA likely to have a significant impact on the CMA (including CMA values, such as marine species), as per section 23(2) of the EPBC Act, must also be considered in whether or not to approve an action.

c) Specifically, a significant impact on the environment in a CMA is likely if there is a real chance or possibility that a proposed action will:

i) result in a known or potential pest species becoming established in the CMA;

ii) modify, destroy, fragment, isolate or disturb an important or substantial area of habitat such that an adverse impact on marine ecosystem functioning or integrity in a CMA;

iii) have a substantial adverse effect on a population of a marine species or cetacean including its life cycle (for example, breeding, feeding, migration behaviour, life expectancy) and spatial distribution;

iv) result in a substantial change in air quality or water quality (including temperature) which may adversely impact on biodiversity, ecological integrity; social amenity or human health;

v) result in persistent organic chemicals, heavy metals, or other potentially harmful chemicals accumulating in the marine environment such that biodiversity, ecological integrity, social amenity or human health may be adversely affected; or

vi) have a substantial adverse impact on heritage values of the CMA, including damage or destruction of an historic shipwreck.

Proposed Action Area

137) Regarding the proposed action and how it relates to the Commonwealth marine area provision of the EPBC Act, I noted the department's advice that:

a) Habitat modelling and description has been provided along the proposed pipeline route, dredge spoil disposal ground and surrounding areas in section 6.3.2.2.1 of the preliminary documentation, and benthic habitat modelling by the Australian Institute of Marine Science (AIMS) in the Pipeline Route Benthic Survey Report. The department considered, and I agreed, that the values of benthic habitat within, and in proximity to, to the proposed action have been adequately detailed.

b) The proposed action area within the CMA varies in depth from approximately 30-60 m. Benthic habitat within the proposed action area is dominated by bare sand, filter feeders and burrowers/crinoids. The proposed action area is located immediately to the east of Shepparton Shoal, which is a raised seabed feature with a depth up to 30 m with similar benthic habitat as surrounding areas.

c) The proposed action is approximately 4.5 km south-west of the Carbonate Bank Key Ecological Feature (KEF). This feature plays an important role in enhancing biodiversity and local productivity relative to surrounding areas and supports a relatively high species diversity. It is comprised of raised geomorphic features with relatively high proportions of hard substrate which support sponge and octocoral gardens. Further detailed information on the characteristics, status and habitat requirements for this KEF can be found in the bioregional plan. The nearest Australian Marine Park (Oceanic Shoals Marine Park) is over 40 km from the proposed action area and is therefore considered unlikely to be impacted by the proposed action.

d) The traditional owners of the Darwin region are the Larrakia people, whose country runs from Cox Peninsula in the west to Gunn Point in the north, Adelaide River in the east and down to the Manton Dam area southwards. The waters of Darwin Harbour, Bynoe Harbour, Shoal Bay, Adam Bay, and parts of Beagle Gulf also form part of Larrakia country. The Larrakia people maintain an innate connection to the land and sea in the region. Cultural, spiritual and heritage sites of significance are located throughout the region where traditional harvesting remains an important practice. Offshore from Darwin Harbour, the waters around the Tiwi Islands (including Bathurst Island, Melville Island and the Vernon Island) similarly hold a spiritual connection, and a source of food and wellbeing, for the Tiwi people.

e) Several EPBC listed threatened and migratory species are known or likely to occur within the Commonwealth component of the proposed action. I considered potential impacts to these species in my deliberations on whether to approve the proposed action in the reasons given above.

Impact

Result in a pest species becoming established in the CMA

138) I noted that the preliminary documentation recognises the potential for significant impacts to ecosystem health within the CMA from the introduction of an invasive marine species (IMS). The introduction of IMS may result in considerable modification of the environment through out-competing native species and modifying existing habitats. Such modifications may result in significant environmental impacts, including decrease in biodiversity (including listed marine, threatened and migratory species), reduction in coastal aesthetics and overall ecosystem health.

139) Vessels are the most common vector for the translocation of IMS in the marine environment and IMS may be introduced or spread when vessels are mobilised to the proposed action area. IMS may be present as biofouling (i.e. adult sessile organisms) on vessel hulls and submersible equipment, and in vessel ballast water (i.e. as larvae).

Disturbance of an important or substantial area of habitat such that an adverse impact on marine ecosystem functioning or integrity in the CMA results

140) I noted that the total (maximum) area of the pipeline footprint is approximately 131 ha of which 11.5 ha is in Commonwealth waters. Seabed disturbance within the CMA will result from the laying of pipeline and associated structures. Dredging and anchoring will not occur within the CMA, with the exception of anchoring in emergency events.

141) The department considered, and I agreed that the proposed action would only result in localised disturbance of benthic habitats and short-term changes to benthic communities through increased turbidity in the immediate vicinity of the pipeline route. The department therefore considered, and I agreed, that the values of benthic habitat within the CMA will be retained.

142) I noted that I had previously considered the potential adverse effect on a population of a marine species in the reasons that I gave above for deciding to approve the proposed action for the purposes of listed threatened species and listed migratory species, including Marine Turtles, inshore dolphins, the Dugong, Sawfish and the Blue Whale. Based on my conclusions in relation to these species, I decided that significant impacts to important or substantial areas of habitat of marine species or cetaceans, including marine turtles and inshore dolphins, as a result of the proposed action, were unlikely to occur.

Result in a substantial change in air quality or water quality

143) I noted that there may be potential impacts to the environment resulting from emissions associated with the proposed action. I considered whether scope 3 GHG emissions associated with the combustion of gas from the larger action are 'impacts' of the proposed action in accordance with section 527E of the EPBC Act. I concluded that the proposed action, given its place in the supply chain, is not a substantial cause of the scope 3 emissions and any environmental effects that may be associated with those emissions. Therefore, I decided that any environmental effects of the larger action's scope 3 emissions would not be 'impacts' for the purposes of the EPBC Act.

144) Additionally, approximately 57,000 m^3 of treated seawater and approximately 1,000 m^3 of mono-ethylene glycol (MEG) will be discharged at the PLET in the proposed action.

145) Treated seawater will be conditioned with biocide, oxygen scavenger, corrosion inhibitor and leak detection dye. The referral considers these chemicals are biodegradable, with negligible potential for bioaccumulation.

146) The proponent claims that MEG poses little or no threat to the environment and is deemed safe to discharge into the marine environment. Advice from the Environmental Contamination Advice and Standards (ECAS) section of the department during the referral stage indicated that, based on the department's National Pollutant Inventory, there are potential acute and chronic toxicological environmental impacts associated with MEG—also known as ethylene glycol — including: (1) immediate effects of exposure to high concentrations of ethylene glycol can mean death of animals, birds or fish and death or low growth rate in plants; (2) long-term effects on animal life are shortened lifespan, reproductive problems, lower fertility and changes in appearance or behaviour; (3) ethylene glycol has moderate toxicity to aquatic life on both a short term and long-term basis.

147) In response to a request for information, the proponent provided further information regarding the ecotoxicity of all chemicals used during flushing activities, including safety data sheets for chemicals and materials and an evaluation of ecotoxicity thresholds and application of Offshore Chemical Notification Scheme ratings, which may include establishment of an alternative 'pseudo' rating that can be applied to the chemical in accordance with international standard protocols or guidelines (e.g., ISO test guidelines, OECD test guidelines, and OSPAR Guidelines). I took this information into account in my decision.

148) The preliminary documents provided modelling and assessment of the toxicological effects to marine organisms from discharges over a 12-hour period, and found that treated seawater and MEG were of concentrations below impact thresholds for marine organisms.

Result in persistent organic chemicals, heavy metals, or other potentially harmful chemicals accumulating in the marine environment such that biodiversity, ecological integrity, social amenity or human health may be adversely affected

149) I noted that the proponent recognises the risk of accidental release of dry gas from pipeline rupture and diesel from project vessels. Marine fauna are vulnerable to hydrocarbons, as exposure has potential to result in asphyxiation. Mitigation measures are required to reduce the risk of dry gas release into the Commonwealth marine environment.

150) Benthic surveys undertaken for the proposed action concluded that no contaminants of concern were found in the sediments along the pipeline route or at the potential spoil disposal ground, with elevated levels of arsenic recorded, but considered to be naturally occurring.

151) The preliminary documentation identified chemicals which will be discharged into the Commonwealth marine environment during pre-commissioning activities, including approximately 57,650 m^3 of treated seawater and approximately 1,050 m^3 of MEG.

152) The ECAS section provided their comments on the draft conditions relating to chemicals and associated definitions on 9 February 2024, which I have taken into account. , ECAS advised, and I agreed, that the condition outlined at Condition 2(a) was sufficient to protect MNES from potentially harmful substances such as chemicals, NORMS, and other water quality stressors and toxicants, and suggested wording to define 'potentially harmful substances'.

Have a substantial adverse impact on heritage values of the CMA, including damage or destruction of an historic shipwreck

153) Regarding the potential adverse impact on heritage values of the CMA, including damage or destruction of an historic shipwreck, I noted that the preliminary documentation identifies several heritage values in proximity to the proposed action area, including: (1) Larrakeyah Barracks (Commonwealth Heritage places) – adjacent to proposed action area and not considered to be directly or indirectly impacted; (2) Five historic shipwrecks, including four from WWII, listed under the *Underwater Cultural Heritage Act 2018* within proposed action area, all of which will be avoided.

154) The preliminary documentation states that a significant program of heritage site identification, classification, and protection/removal was undertaken for the existing DLNG facility, noting that the terrestrial component of the proposed action will remain within the previously surveyed and cleared envelope. The preliminary documentation also states that the proposed action will not impact any known sacred sites.

155) The National Indigenous Australian Agency (NIAA) provided comment at the referral stage that Traditional Owner groups affected by the proposed action have concerns about its potential impacts, including impacts on the ocean environment, hunting areas and cultural heritage. NIAA noted the need for thorough and sensitive consultation with Traditional Owners about this project while the legal proceedings about the Barossa Development are active, as well as post-decision.

156) I considered internal departmental advice from the Underwater Cultural Heritage Section (UCH) which recommended that: (1) The documentation as supplied to support this proposal appears not to be compliant with the protections of the UCH Act; (2) due to the above, there appears to be a risk of unassessed and unmitigated adverse impact to protected and potential UCH by this proposal; (3) the proponent be advised of their obligations under s40 of the UCH Act and the relevant notifications be submitted by a suitably qualified and experienced underwater archaeologist; (4) the relevant reporting be updated to include all categories of UCH subject to protection and management under the UCH Act; (5) and the relevant UCH impact control and management documentation be submitted to DCCEEW for review, assessment and approval, prior to the commencement of any activities involving seabed impact.

157) This advice was provided to the proponent on 15 January 2024 for their action and to inform them of their obligation under section 40 of the *UCH Act 2018* to notify the Minister of the discovery of any suspected UCH within 21 days of discovery.

158) Further advice was received from the UCH Section which included minor comments relating to correct terms and timeframes required under the *UCH Act 2016*, which I took into account.

159) Regarding GHG emissions, I noted the public comments which raised concerns that the GHG emissions of the larger action are likely to have significant impacts on the CMA because of their contribution to climate change. As I have already concluded above at [143], the proposed action is not a substantial cause of the GHG emissions and therefore the downstream indirect impacts are not potential impacts of the action.

<u>Avoidance, mitigation and management measures</u>

160) I noted, and agreed with, the department's advice that:

a) The proponent has detailed avoidance, mitigation and monitoring measures in section 5 of the preliminary documentation and has prepared several action management plans, which detail how construction will be undertaken and how potential impacts and risks to MNES will be managed. These action management plans include:

i) Trenching, Spoil Disposal Management and Monitoring Plan (TSDMMP)

ii) Acid Sulphate Soil and Dewatering Management Plan (ASSDMP)

iii) Onshore Construction Environmental Management Plan (CEMP)

iv) Offshore Construction Environmental Management Plan (CEMP)

v) Marine Megafauna Noise Management Plan (MMNMP)

Result in a pest species becoming established in the CMA

161) I noted that the proponent has committed to the following avoidance, mitigation, and management measures relevant to addressing invasive marine species (IMS):

a) Vessels will be equipped with effective anti-fouling coatings as required for class.

b) Ballast water management will comply with the International Convention for the Prevention of Pollution from Ships (MARPOL) requirements (as applicable to class), *Australian Ballast Water Management Requirements and Biosecurity Act 2015.*

c) To apply risk-based IMS management for vessels and immersible equipment – vessel and immersible equipment must be assessed as having a low risk of IMS prior to coming onto activity as per Santos IMS procedures.

d) Vessels must have suitable anti-fouling coating (marine growth prevention system) in accordance with the *Protection of the Sea (Harmful Anti-fouling Systems) Act 2006*.

Disturbance of an important or substantial area of habitat such that an adverse impact on marine ecosystem functioning or integrity in the CMA results

162) I am satisfied that the avoidance, mitigation and management measures relating to habitat disturbance detailed for seabed disturbance—as they relate to listed threatened species and ecological communities and listed migratory species (set at out [54]-[59])—apply to all relevant marine species. For this reason, I am satisfied that these measures equally apply to marine ecosystem functionality and integrity.

Result in a substantial adverse effect on a population of marine species

163) I am satisfied that the avoidance, mitigation and management measures of the proposed action in respect of a potential adverse effect on a population of a marine species is sufficient for me to have concluded that a residual significant impact on a marine species is unlikely to result from the proposed action.

Result in a substantial change in air quality or water quality

164) I noted that the proponent has committed to the following avoidance, mitigation, and management measures relevant to addressing impacts resulting from discharges into the marine environment associated with flushing activities:

a) Pipeline installation procedures to be prepared and followed.

b) Shallow water pipelay barge has redundancy in its anchors for stability.

c) Deep water pipelay vessel has redundancy in its station keeping abilities and operates in accordance with approved activity specific operating guidelines.

d) Chemical selection procedure for all chemicals, including treated seawater discharged to the marine environment.

e) Calibrated chemical dosing system in place to ensure accuracy.

f) If contingency use and discharge of treated seawater is required, the lowest required concentration of treatment chemical will be evaluated and used (up to a maximum of 550 ppm) in order to meet pipeline preservation requirements.

g) Maintenance requirements for pipelaying to minimise risk of operational failure.

h) In the unlikely event that the pipeline requires contingency filling and subsequent dewatering of treated seawater in response to a wet buckle event and prolonged repair, water quality monitoring of the dewatering at the discharge location will be conducted to confirm the concentration and dispersion of treatment chemicals.

165) I also noted that an Acid Sulphate Soil (ASS) assessment was undertaken to assess the presence of ASS prior to disturbance test soils within the shore crossing location. The proponent has stated in the Acid Sulfate Soil and Dewatering Management Plan that ASS associated with the naturally occurring soil material is not expected to be present within the onshore zone. I accept ASS is unlikely to be present.

Result in persistent organic chemicals, heavy metals, or other potentially harmful chemicals accumulating in the marine environment such that biodiversity, ecological integrity, social amenity and human health may be adversely affected

166) I noted that the proponent has committed to the following avoidance, mitigation, and management measures relevant to addressing impacts resulting from accidental release of toxicants or objects into the marine environment during unplanned events:

a) No Intermediate Fuel Oil (IFO) and heavy Fuel Oil (HFO) will be used in the Project area.

b) Chemicals and hydrocarbons will be transferred and stored in accordance with standard maritime practices as per vessel SOPEP.

c) Vessel-specific bunkering procedures and equipment consistent with Santos marine vessel vetting requirements including:

i) Use of bulk hoses that have quick connect ‘dry break’ couplings.

ii) Correct valve line-up.

iii) Defined roles and responsibilities, and the specific requirement for bunkering to be completed by trained personnel only.

iv) Visual inspection of hoses prior to bunkering to confirm they are in good condition.

v) Testing of the emergency shutdown mechanism on the transfer pumps.

vi) Assessment of weather/sea state.

vii) Maintenance of radio contact with Vessel during bunkering operations.

viii) Bunkering checklist.

ix) Visual monitoring during bunkering.

d) Spill clean-up kits available in all areas, including high risk areas.

e) Implement tiered spill response in the event of a hydrocarbon spill as outlined in an oil pollution emergency plan for DPD Project construction and operations.

f) Oil spill tracking buoys will be made available on primary project vessel/s with Santos CSR/s and/or at local supply base for immediate deployment to assist with tracking of an oil spill.

g) Operational and scientific monitoring to be undertaken in event of a hydrocarbon spill as outlined in the oil pollution emergency plan for DPD Project construction and operations.

h) Dropped objects recovered where safe and practicable to do so.

i) Identification of no lift zones where relevant in proximity to subsea assets and infrastructure as documented in relevant lifting and operational procedure/s.

j) Emergency response implemented to minimize potential for impacts in the event of a loss of containment from the Bayu-Undan to Darwin gas export pipeline or other gas pipeline as a result of a dropped object during the proposed action installation.

Have a substantial adverse impact on heritage values of the CMA, including damage or destruction of an historic shipwreck

167) I noted that the proponent received an Authority Certificate (C2022-098), from the Aboriginal Areas Protection Authority (AAPA) on 23 December 2022, which covers seabed disturbance in proposed action area from DLNG at Wickham Point to the boundary of Territory and Commonwealth waters and inclusive of the offshore spoil disposal area. I understand that the AAPA is an independent statutory authority established under the *Northern Territory Aboriginal Sacred Sites Act 1989*. The AAPA is responsible for overseeing the protection of Aboriginal sacred sites on land and sea across the Northern Territory. Authority Certificates are based on consultations between AAPA and custodians and provide clear instructions on what can and cannot be done in and around sacred sites. An Authority Certificate provides a statutory indemnity against prosecution in relation to the works or uses covered by the Certificate, provided the applicant complies with any conditions imposed to protect sacred sites. Certificates are voluntary and are considered to provide an effective risk management tool for developers and act as site protection measures for custodians. AAPA protects Aboriginal sacred sites through:

a) Sacred site avoidance surveys and issuing of Authority Certificates for any proposals of development.

b) The provision of information to the public about existing sacred sites data through abstracts of Authority records and access to the Registers maintained by the Authority.

c) The registration of Aboriginal sacred sites.

168) I also noted that the proponent has committed to undertaking ongoing consultation and engagement with traditional owners in relation to Indigenous cultural values and heritage within the proposed action area.

169) I noted that the proponent has committed to preparing and implementing a Cultural Heritage Management Plan that will incorporate and build upon management measures identified through consultation with Indigenous stakeholders on the sacred sites and restricted works areas identified from the AAPA Authority Certificate. The Cultural Heritage Management Plan will also include cultural heritage induction procedures for site personnel, procedures for anchoring and the establishment of anchor exclusion zones, and detail of how compliance will be monitored. The proponent expects the preparation and implementation of a Cultural Heritage Management Plan for the DPD Project addressing these matters will be a requirement of the conditions of any environmental approval granted by the Northern Territory EPA under the *Environment Protection Act 2019*. While those conditions will only relate to the portion of the DPD Project within Northern Territory waters, the proponent will extend the scope of the Cultural Heritage Management Plan to include the portion of pipeline in Commonwealth waters.

Proposed outcomes and conditions

170) I considered and accepted the department's recommendation that any approval of the action should require the implementation of the management plans submitted during the assessment, including the Offshore Pipeline Construction Environmental Management Plan; Trenching and Spoil Disposal Management Plan; and Marine Megafauna Noise Management Plan.

171) I also considered that the proposed avoidance and mitigation measures provided in preliminary documentation and draft management plans are broadly sufficient to ensure no residual significant impacts occur. However, in agreement with the department's advice, I required the following approval conditions to strengthen these commitments:

a) Submit a Protocol for Protecting Underwater Cultural Heritage (PPUCH) to the department for the Minister's approval which must include:

   i) Details of how Underwater Cultural Heritage will be avoided;

   ii) Detailed impact control and management measures to ensure no harm to underwater cultural heritage;

   iii) A commitment to engage a suitably qualified underwater archaeologist during any activities impacting the sea floor; and

   iv) Detailed procedures and reporting to be implemented if underwater cultural heritage is discovered, including a commitment to notify the department within 21 calendar days of identifying any underwater cultural heritage of clear archaeological character identified by a suitably qualified underwater archaeologist**.**

b) Not commence the action unless the Minister has approved the PPUCH in writing.

c) Implement the PPUCH prior to the commencement of any activities involving impact to the sea floor.

Conclusion on sections 23 and 24A

172) I concluded that the proposed action taken in a Commonwealth marine area would not have a significant impact on the environment provided the action is undertaken in accordance with the approval conditions. These conditions require the proponent to implement the avoidance and mitigation measures described in their preliminary documentation and management plans,

as well as other additional conditions that address gaps in commitment or clarity of the proponent's proposed management measures.

173) In addition, I also concluded that the action is not inconsistent with any applicable in-force conservation advice, recovery plans or threat abatement plans for listed threated species and ecological communities.

Social and economic matters (section 136(1)(b))

174) I noted the department's advice that several economic and social matters are relevant to the proposed action, which are:

a) Anticipated economic costs and/or benefits (in AUD).

b) The basis for any estimates of costs and/or benefits.

c) Potential employment opportunities expected to be generated at each phase of the proposed action.

d) Information regarding the impacts of the proposal on Traditional Owners/the local community/other parties impacted.

e) Details of any public and/or Traditional Owner stakeholder consultation activities, including the outcomes of those consultations.

f) Consideration of different scales of economic and/or social impacts where relevant (e.g., local versus national).

175) I considered the information provided in the preliminary documentation Summary Report against points (a) to (f) as summarised by the department and set out in the table immediately below.

Point	Features within this component
a)	The Proponent has identified that overall, the socioeconomic impacts associated with the Project are anticipated to be positive, with identified possible negative socioeconomic impacts likely to be short-term and of low magnitude. Estimates of the Australian dollar value of costs and benefits related to the proposed action include a commitment in excess of $900 million to preserve the Carbon Capture and Storage (CCS) opportunity. Combined with life extension works required to Darwin Liquefied Natural Gas (DLNG), Santos estimates the creation of approximately $2.5 billion in local spend. DLNG operations currently generate approximately $100 million annually in supply and service business opportunities. In addition to regular operations, DLNG also undertakes a major maintenance program every two years, with up to $50 million injected into the local economy. Significant revenues will also be transferred to the Federal Government in the form of company tax and income taxation payments.
b)	The estimation of costs/benefits associated with the proposed action is based on the NT EPA guidelines for the preparation of an economic and social impact assessment which recommends including information such as project contribution to the NT and Australian

Point	Features within this component
	economy and contribution to employment and training. The proponent's estimates are based on past expenditure from DLNG experience.
c)	The proposed action and associated projects have significant potential to stimulate economic activity in the Northern Territory, including providing the opportunity for the NT to host one of the first major common user CCS projects in Australia. The proponent anticipates indirect jobs created for every direct job involved in the project as well as positive impacts on the broader economy. The proponent estimates the creation of 800 construction jobs, 180 long-term operational jobs and approximately $2.5 billion in local spend and anticipates indirect jobs created for every direct job involved in the project as well as positive impacts on the broader economy. The proponent estimates the creation of 800 construction jobs, 180 long-term operational jobs and approximately $2.5 billion in local spending. DLNG operations currently employ approximately 250 people and generate approximately $100 million annually in supply and service business opportunities. In addition to regular operations, DLNG also undertakes a major maintenance program every two years, with approximately 600 people employed and up to $50 million injected into the local economy.
d)	The proponent has applied for and received an Authority Certificate from Aboriginal Areas Protection Authority on 23 December 2022, which covers seabed disturbance in Subject Land areas from DLNG at Wickham Point to the boundary of Territory and Commonwealth waters and inclusive of the offshore spoil disposal area. The certificate identified that the registered sacred site 5073-105 overlaps the Subject Land area and that a restricted works area shall apply within which no work or damage can occur. The proponent will also prepare and implement a Cultural Heritage Management Plan which will incorporate and build upon management measures identified through consultation with Indigenous stakeholders. The Cultural Heritage Management Plan will also include cultural heritage induction procedures for site personnel, procedures for anchoring and the establishment of anchor exclusion zones, and detail of how compliance will be monitored. Consultation conducted to date on the Barossa Project with Tiwi Island and Croker Island clan members has included detail about Barossa Project spill scenarios and spill response avoidance and mitigation measures. Through this consultation, agreement for spill notification processes has been made as well as agreement to provide rapid response test kits and associated training to Tiwi Island Rangers Groups. Traditional Australian Indigenous fishing in NT waters predominately occurs within inshore tidal waters. Approximately 55% of NT's coastline is owned by Traditional Aboriginal Owner groups in the Northern Land Council region. I noted that the Barossa gas field project has been subject to media scrutiny and high-profile legal action involving the proponent, NOSPEMA, Tiwi Land Council and Traditional Owner groups. As an outcome of legal proceedings, the proponent has undertaken additional community consultation.

Point	Features within this component
	On 15 January 2024, the Federal Court ruled in favour of the proponent on an injunction application from Tiwi Island traditional owners regarding the Barossa project, which sought the revision of a NOPSEMA accepted Environmental Plan to include potential risks to underwater sacred sites. The Darwin Pipeline Duplication project is a component of the larger Barossa project, which is primarily regulated by NOPSEMA, but is unaffected by the court ruling.
e)	Stakeholder engagement has been undertaken from project inception and will continue over the lifecycle of the project, with more than 130 meetings held with stakeholders between October 2021 and August 2023 made up of 110 meetings concerning the DPD project and 20 meetings concerning the Barossa project more broadly that included the DPD project. A total of 318 submissions were received in response to the publication of the NT EPA Referral which included group public submissions by 284 individuals with the same wording. This included submissions from environmental organisations, researchers, volunteer groups, individuals (some submissions representing multiple people), and from multiple government agencies. The proponent will undertake ongoing consultation and engagement with Traditional Owners in relation to Indigenous cultural values and heritage within the DPD project area. The proponent has engaged with Indigenous Groups / Representative Bodies, Academic and Research Organisations, Environmental Group Representatives, Fishing Representative Bodies and Operators, Other Community Organisations, Tourism Representative Bodies and Operators, Infrastructure Operators and Energy Industry. The stakeholders have engaged directly with the proponent or the proponent has received and responded to formal submissions from them. Stakeholders were initially identified based on the proponent's knowledge and history of engagement in the Darwin area, their activities within the proposed action area, potential to be positively or negatively impacted by the proposed action or their general interest in the type of project. Issues raised in formal public/Government submissions on the NT EPA Referral and SER for activities onshore and in NT waters can be broadly summarised under the following themes: • Increasing GHG/air emissions from the DPD Project and associated Barossa Development and impacts to climate change. • Feasibility of Carbon Capture and Storage (CCS). • Impacts to the marine ecosystem and supporting evidence used to assess impacts, including: Benthic habitats (including seagrass and hard coral habitats). • Protected marine megafauna (including dolphins, dugongs and turtles). • Fish and fisheries. • Mangroves. • Impacts to coastal processes and marine environmental quality, associated with trenching and rock placement.

Point	Features within this component
	• Assessment of potential impacts to cultural heritage. • Industrialisation of Darwin Harbour and cumulative impacts. • Reliance on INPEX Ichthys data and the lack of evidence around long-term impacts. • The proponent's engagement with potentially affected communities and request for further details on the proponent's stakeholder planning. • Impacts to recreational fishers (including use of the spoil ground) and existing shipping traffic. • Impacts to the broader community including job security, tourism and overall health impacts.
f)	Local: A residential workforce policy requires DLNG staff to live in Darwin, injecting local jobs and global expertise into the region. The proponent's supply base for all its NT offshore activities is located in Darwin. The project will involve an increased number of personnel needing to transit through Darwin, particularly during the offshore installation phase, which may result in increased local spend. Regional: The DPD and associated projects will provide opportunities for NT-based companies to support project logistics supply chains via the offshore and onshore movement of personnel and equipment by air and sea and all associated activities such as fuel and water supply, catering and the supply and movement of equipment and materials. National: Significant revenues will be transferred to the Federal Government in the form of company tax and income taxation payments. + The DPD and associated projects are important for the nation, enhancing jobs, exports and relationships with investors and export gas customers in Asia who have depended on Australia for their energy security for decades. Cumulative socioeconomic impacts may arise as higher levels of vessel and small aircraft movements between Darwin and offshore and higher passenger levels at Darwin airport putting pressure on transport infrastructure. In view of the number of vessel and passenger movements involved, the cumulative impact is anticipated to be minor.

Conclusion

176) I took into account the social and economic matters discussed above in making my decision.

Person's environmental history (section 136(4))

177) In deciding whether or not to approve the taking of an action by a person, and what conditions to attach to an approval, I may consider, in accordance with section 136(4) whether the person is a suitable person to be granted an approval, having regard to:

a) the person's history in relation to environmental matters; and

b) if the person is a body corporate-the history of its executive officers in relation to environmental matters; and

c) if the person is a body corporate that is a subsidiary of another body or company (the ***parent body***)-the history in relation to environmental matters of the parent body and its executive officers.

178) I considered and accepted the department's advice that the proponent is well versed in matters related to the EPBC Act and environmental approvals, and has managed multiple EPBC Act approvals in the past.

179) I noted that, on 22 January 2024, an environmental history check was completed by the Compliance and Enforcement Branch of the department. The environmental history check, in accordance with section 136(4) of the EPBC Act found no adverse history relating to Santos NA Barossa Pty Ltd and related entities regarding contraventions of national environmental law.

180) On 26 October 2023, the proponent submitted information to the department regarding environmental breaches pertaining to state law. This information is included in Appendix 5 of the Preliminary Documentation. The identified breaches included:

a) On July 2018, Santos group received a $68,000 fine from the Queensland Department of Environment and Science for the unauthorised release of hydrocarbons to land.

b) On June 2013, Santos NSW (Eastern) Pty Ltd pleaded guilty in the NSW Land and Environment Court for proceedings relating to breaches of the NSW Petroleum (Onshore) Act 1991 for past reporting failures in the Pilliga forest. Santos NS (Eastern) Pty Ltd was fined $52,500.

Reasons for decision

181) In making my decision, I made the findings as I have set out above.

Environmental history (section 136(4))

182) I took into account the proponent's environmental history, which I am permitted to consider under section 136(4) of the EPBC Act. The department considered, and I agreed, that the proponent is a suitable person to be granted an approval under the EPBC Act in accordance with section 136(4).

Requirements for decisions about threatened species and endangered communities (section 139)

Section 139(1)(a)

183) As required by section 139(1)(a) of the EPBC Act, I considered Australia's obligations under the *Biodiversity Convention*, the *Apia Convention* and *Convention on International Trade in Endangered Species of Wild Fauna and Flora* (CITES). I considered that approving the action subject to conditions would not be inconsistent with these three conventions.

184) I considered that the *Biodiversity Convention* is not inconsistent with my decision to approve the taking of the action, subject to avoidance, mitigation, and management measures for listed threatened species and communities. The approval required information related to the action to be publicly available to ensure equitable sharing of information and improved knowledge relating to biodiversity.

185) The *Apia Convention* was suspended with effect from 13 September 2006. While this Convention has been suspended, Australia's obligations under the Convention were taken into

consideration by the department in preparing its recommendation. I agree that the recommendation for approval was not inconsistent with the Convention which has the general aims of conservation of biodiversity.

186) I agreed that the recommendations from the department for approval was not inconsistent with CITES, as the action does not involve international trade.

Section 139(1)(b)

187) As required by section 139(1)(b), I considered the relevant recovery plan, the *Recovery Plan for Marine Turtles in Australia 2017* and Sawfish and *River Sharks Multispecies Recovery Plan 2015*, for the Marine Turtles and Sawfish, respectively, that I discussed above. I also considered the following threat abatement plans:

a) *Threat abatement plan for predation by the European red fox 2008*,

b) *Threat Abatement Plan for the impacts of marine debris on the vertebrate wildlife of Australia's coasts and oceans 2018*,

c) *Threat abatement plan for predation, habitat degradation, competition, and disease transmission by feral pigs 2017*, and

d) *Threat abatement plan for predation by feral cats 2015*.

188) I concluded that, provided the proponent implements the approval conditions, the action would not be inconsistent with any relevant plan or threat abatement plan.

Section 139(2)

189) In deciding whether or not to approve the taking of the action, as required by section 139(2), I had regard to the following approved conservation advices:

a) *Approved Conservation Advice for Pristis clavata (Dwarf Sawfish) 2009,*

b) *Approved Conservation Advice for Green Sawfish 2009,*

c) *Approved Conservation Advice for Pristis pristis (largetooth sawfish) 2014,*

d) *Conservation Advice for Limnodromus semipalmatus (Asian dowitcher) 2024,*

e) *Conservation Advice for Numenius madagascariensis (far eastern curlew) 2023,*

f) *Conservation Advice for Calidris ferruginea (curlew sandpiper) 2023,*

g) *Conservation Advice for Calidris canutus (red knot) 2024,* and

h) *Conservation Advice for Calidris acuminata (sharp-tailed sandpiper) 2024*.

190) The department advised, and I agreed, that approval of this action would not be inconsistent with the conservation advice for these EPBC Act listed species.

Requirements for decisions about migratory species (section 140)

191) As required by section 140, in deciding whether or not to approve for the purposes of section 20 or 20A the taking of an action relating to a listed migratory species, and what conditions to attach to such an approval, I considered Australia's obligations under the *Bonn Convention*, the *China-Australia Migratory Bird Agreement* (CAMBA), the *Japan-Australia Migratory Bird Agreement* (JAMBA) and the *Republic of Korea-Australia Migratory Bird Agreement* (ROKAMBA).

I concluded that action was not inconsistent with Australia's obligations under any of the conventions and agreements just mentioned because the action is unlikely to have a residual significant impact on any threatened or migratory bird species listed under the EPBC Act.

Ecologically sustainable development (section 136(2)(a))

192) In deciding whether or not to approve the taking of the proposed action, I took into account (among other matters) the principles of ecologically sustainable development as required under section 136(2)(a) of the EPBC Act. I took into account the information contained in the approval decision brief and the assessment documentation on the long-term and short-term economic, environmental, social and equitable considerations relevant to my decision.

193) I noted that any lack of certainty related to the potential impacts of the proposed action is addressed by the conditions set out in my decision.

194) The department advised, and I accepted that advice, that the proposed conditions would ensure protection of EPBC listed species and communities and the environment of Commonwealth land. The conditions would allow for the proposed action to be delivered and operated in a sustainable way to protect the environment for future generations and preserve EPBC listed species and communities in perpetuity.

195) I considered the importance of conserving biological diversity and ecological integrity in relation to all of the controlling provisions for the proposed action, and accepted the department's advice in relation to this consideration.

196) I considered the information before me in respect of the economic costs, benefits and impacts of the proposed action.

Precautionary principle (section 391)

197) In deciding whether or not to approve the taking of the action I considered the precautionary principle, as required under section 391 of the EPBC Act. I decided that the conditions applied would restrict environmental impacts, impose strict monitoring and require corrective action in a timely manner to avoid adverse impacts, which is addressed in the proponent's management plans, such as those to be implemented under approval conditions 4 and 5. Additionally, approval conditions 2 and 3 have specific requirements to ensure that residual significant impacts to matters of national environmental significance do not occur.

Marine bioregional plan

198) In accordance with section 176(5) of the EPBC Act, I was required to have regard to a bioregional plan in making any decision under the Act to which the plan is relevant. As I have explained in the findings on material questions of fact, I had regard to the Marine bioregional plan for the *North Marine Region 2012*, particularly as it related to listed Marine Turtles, Dugongs and Sawfish. I concluded that the proposed action would not be inconsistent with this plan.

Section 136(5)

199) In accordance with section 136(5) of the EPBC Act, in considering the approval of the action, I did not consider any matters not required or permitted to be considered by Division 1, Part 9 of the EPBC Act.

Conditions of approval (section 134)

200) The conditions imposed meet the test required by section 134(1). The conditions are necessary or convenient to avoid, mitigate and compensate impacts from the action to the Marine Turtles, Inshore Dolphins, Dugong, Sawfish, threatened and migratory birds (as listed in my findings above), the Blue Whale and to the environment of the Commonwealth marine area.

201) Section 134(4) of the EPBC Act requires, in deciding whether or not to attach a condition to the approval, that I consider the conditions imposed by the Northern Territory government, namely by NT EPA. At the time of my decision, I considered the NT government's approval for the action, which is dated 12 December 2023.

202) As required by section 134(4)(aa) I considered all information provided by the proponent when attaching conditions to the action.

203) In accordance with section 134(4)(b) of the EPBC Act, I considered the desirability of ensuring as far as practicable that the conditions attached to the decision and action were cost-effective means for the Commonwealth and the proponent to achieve the object of each condition.

204) I took into account the information provided in the departmental brief and its attachments including the additional information provided by the proponent, as well as matters outlined above.

Conclusion

205) In light of my findings above, I was satisfied that, provided avoidance and mitigation measures are implemented in line with the conditions, the impacts of the action will be acceptable. I therefore decided on 15 March 2024 to approve the taking of the action subject to conditions.

Name and position	Kylie Calhoun Branch Head Environment Assessments West
Signature	
date of decision	5 June 2024

Annexure A- Relevant Provisions of the EPBC Act

Section 130 of the EPBC Act relevantly provides:

Basic rule

(1) The Minister must decide whether or not to approve, for the purposes of each controlling provision for a controlled action, the taking of the action.

(1A) The Minister must make the decision within the relevant period specified in subsection (1B) that relates to the controlled action, or such longer period as the Minister specifies in writing.

Notice of extension of time

(4) If the Minister specifies a longer period for the purposes of subsection (1A), he or she must:

(a) give a copy of the specification to the person proposing to take the action; and

(b) publish the specification in accordance with the regulations.

Section 131 of the EPBC Act provides:

(1) Before the Minister (the Environment Minister) decides whether or not to approve, for the purposes of a controlling provision, the taking of an action, and what conditions (if any) to attach to an approval, he or she must:

(a) inform any other Minister whom the Environment Minister believes has administrative responsibilities relating to the action of the decision the Environment Minister proposes to make; and

(b) invite the other Minister to give the Environment Minister comments on the proposed decision within 10 business days.

(2) A Minister invited to comment may make comments that:

(a) relate to economic and social matters relating to the action; and

(b) may be considered by the Environment Minister consistently with the principles of ecologically sustainable development.

This does not limit the comments such a Minister may give.

Section 131AA of the EPBC Act relevantly provides:

(1) Before the Minister decides whether or not to approve, for the purposes of a controlling provision, the taking of an action, and what conditions (if any) to attach to an approval, he or she must:

(a) inform the person proposing to take the action, and the designated proponent of the action (if the designated proponent is not the person proposing to take the action), of:

(i) the decision the Minister proposes to make; and

(ii) if the Minister proposes to approve the taking of the action – any conditions the Minister proposes to attach to the approval; and

(b) invite each person informed under paragraph (a) to give the Minister, within 10 business days (measured in Canberra), comments in writing on the proposed decision and any conditions.

(2) If the Minister proposes not to approve, for the purposes of a controlling provision, the taking of the action, the Minister must provide to each person informed under paragraph (1)(a), with the invitation given under paragraph (1)(b):

(a) a copy of whichever of the following documents applies to the action:

(i) an assessment report;

(ii) a finalised recommendation report given to the Minister under subsection 93(5);

(iii) a recommendation report given to the Minister under section 95C, 100 or 105; and

(b) any information relating to economic and social matters that the Minister has considered; and

(c) any information relating to the history of a person in relation to environmental matters that the Minister has considered under subsection 136(4); and

(d) a copy of any document, or part of a document, containing information of a kind referred to in paragraph 136(2)(e) that the Minister has considered.

(3) The Minister is not required to provide under subsection (2):

(a) information that is in the public domain; or

(b) a copy of so much of a document as in the public domain; or

(c) in the case of information referred to in paragraph (2)(b) or (c) – any conclusions or recommendations relating to that information included in documents or other material prepared by the Secretary for the Minister.

(6) In deciding whether or not to approve, for the purposes of a controlling provision, the taking of the action, the Minister must take into account any relevant comments given to the Minister in response to an invitation given under paragraph (1)(b).

Section 131A of the EPBC Act provides:

Before the Minister decides whether or not to approve, for the purposes of a controlling provision, the taking of an action, and what conditions (if any) to attach to an approval, he or she may publish on the Internet:

(a) the proposed decision and, if the proposed decision is to approve the taking of the action, any conditions that the Minister proposes to attach to the approval; and

(b) an invitation for anyone to give the Minister, within 10 business days (measured in Canberra), comments in writing on the proposed decision and any conditions.

Section 133 of the EPBC Act relevantly provides:

Approval

(1) After receiving the assessment documentation relating to a controlled action, or the report of a commission that has conducted an inquiry relating to a controlled action, the Minister may approve for the purposes of a controlling provision the taking of the action by a person.

(1A) If the referral of the proposal to take the action included alternative proposals relating to any of the matters referred to in subsection 72(3), the Minister may approve, for the purposes of subsection (1), one or more of the alternative proposals in relation to the taking of the action.

Content of approval

(2) An approval must:

(a) be in writing; and

(b) specify the action (including any alternative proposals approved under subsection (1A)) that may be taken; and

(c) name the person to whom the approval is granted; and

(d) specify each provision of Part 3 for which the approval has effect; and

(e) specify the period for which the approval has effect; and

(f) set out the conditions attached to the approval.

Persons who may take action covered by approval

(2A) An approval granted under this section is an approval of the taking of the action specified in the approval by any of the following persons:

(a) the holder of the approval;

(b) a person who is authorised, permitted, or requested by the holder of the approval, or by another person with the consent or agreement of the holder of the approval, to take the action.

Notice of approval

(3) The Minister must:

(a) give a copy of the approval to the person named in the approval under paragraph 133(2)(c); and

(b) provide a copy of the approval to a person who asks for it (either free or for a reasonable charge determined by the Minister).

Notice of refusal of approval

(7) If the Minister refuses to approve for the purposes of a controlling provision the taking of an action by the person who proposed to take the action, the Minister must give the person notice of the refusal.

Section 134 of the EPBC Act provides:

Condition to inform persons taking action of conditions attached to approval

(1A) An approval of the taking of an action by a person (the first person) is subject to the condition that, if the first person authorises, permits, or requests another person to undertake any part of the action, the first person must take all reasonable steps to ensure:

(a) that the other person is informed of any condition attached to the approval that restricts or regulates the way in which that part of the action may be taken; and

(b) that the other person complies with any such condition.

For the purposes of this Chapter, the condition imposed by this subsection is attached to the approval.

Generally

(1) The Minister may attach a condition to the approval of the action if he or she is satisfied that the condition is necessary or convenient for:

(a) protecting a matter protected by a provision of Part 3 for which the approval has effect (whether or not the protection is protection from the action); or

(b) repairing or mitigating damage to a matter protected by a provision of Part 3 for which the approval has effect (whether or not the damage has been, will be or is likely to be caused by the action).

Conditions to protect matters from the approved action

(2) The Minister may attach a condition to the approval of the action if he or she is satisfied that the condition is necessary or convenient for:

(a) protecting from the action any matter protected by a provision of Part 3 for which the approval has effect; or

(b) repairing or mitigating damage that may or will be, or has been, caused by the action to any matter protected by a provision of Part 3 for which the approval has effect.

This subsection does not limit subsection (1).

Examples of kinds of conditions that may be attached

(3) The conditions that may be attached to an approval include:

(aa) conditions requiring specified activities to be undertaken for:

(i) protecting a matter protected by a provision of Part 3 for which the approval has effect (whether or not the protection is protection from the action); or

(ii) repairing or mitigating damage to a matter protected by a provision of Part 3 for which the approval has effect (whether or not the damage may or will be, or has been, caused by the action); and

(ab) conditions requiring a specified financial contribution to be made to a person for the purpose of supporting activities of a kind mentioned in paragraph (aa); and

(a) conditions relating to any security to be given by the holder of the approval by bond, guarantee or cash deposit:

(i) to comply with this Act and the regulations; and

(ii) not to contravene a condition attached to the approval; and

(iii) to meet any liability of a person whose taking of the action is approved to the Commonwealth for measures taken by the Commonwealth under section 499 (which lets the Commonwealth repair and mitigate damage caused by a contravention of this Act) in relation to the action; and

(b) conditions requiring the holder of the approval to insure against any specified liability of the holder to the Commonwealth for measures taken by the Commonwealth under section 499 in relation to the approved action; and

(c) conditions requiring a person taking the action to comply with conditions specified in an instrument (including any kind of authorisation) made or granted under a law of a State or self-governing Territory or another law of the Commonwealth; and

(d) conditions requiring an environmental audit of the action to be carried out periodically by a person who can be regarded as being independent from any person whose taking of the action is approved; and

(e) conditions requiring the preparation, submission for approval by the Minister, and implementation of a plan for managing the impacts of the approved action on a matter protected by a provision of Part 3 for which the approval has effect such as a plan for conserving habitat of a species or ecological community; and

(f) conditions requiring specified environmental monitoring or testing to be carried out; and

(g) conditions requiring compliance with a specified industry standard or code of practice; and

(h) conditions relating to any alternative proposals in relation to the taking of the action covered by the approval (as permitted by subsection 133(1A)).

This subsection does not limit the kinds of conditions that may be attached to an approval.

Certain conditions require consent of holder of approval

(3A) The following kinds of condition cannot be attached to the approval of an action unless the holder of the approval has consented to the attachment of the condition:

(a) a condition referred to in paragraph (3)(aa), if the activities specified in the condition are not reasonably related to the action;

(b) a condition referred to in paragraph (3)(ab).

(3B) If the holder of the approval has given consent, for the purposes of subsection (3A), to the attachment of a condition:

(a) the holder cannot withdraw that consent after the condition has been attached to the approval; and

(b) any person to whom the approval is later transferred under section 145B is taken to have consented to the attachment of the condition and cannot withdraw that consent.

Conditions attached under paragraph (3)(c)

(3C) A condition attached to an approval under paragraph (3)(c) may require a person taking the action to comply with conditions specified in an instrument of a kind referred to in that paragraph:

(a) as in force at a particular time; or

(b) as is in force or existing from time to time;

even if the instrument does not yet exist at the time the approval takes effect.

Considerations in deciding on condition

(4) In deciding whether to attach a condition to an approval, the Minister must consider:

(a) any relevant conditions that have been imposed, or the Minister considers are likely to be imposed, under a law of a State or self-governing Territory or another law of the Commonwealth on the taking of the action; and

(aa) information provided by the person proposing to take the action or by the designated proponent of the action; and

(b) the desirability of ensuring as far as practicable that the condition is a cost effective means for the Commonwealth and a person taking the action to achieve the object of the condition.

Effect of conditions requiring compliance with conditions specified in another instrument

(4A) If:

(a) a condition (the principal condition) attached to an approval under paragraph (3)(c) requires a person taking the action to comply with conditions (the other conditions) specified in an instrument of a kind referred to in that paragraph; and

(b) the other conditions are in excess of the power conferred by subsection (1);

the principal condition is taken to require the person to comply with the other conditions only to the extent that they are not in excess of that power.

Validity of decision

(5) A failure to consider information as required by paragraph (4)(aa) does not invalidate a decision about attaching a condition to the approval.

Section 136 of the EPBC Act provides:

Mandatory considerations

(1) In deciding whether or not to approve the taking of an action, and what conditions to attach to an approval, the Minister must consider the following, so far as they are not inconsistent with any other requirement of this Subdivision:

(a) matters relevant to any matter protected by a provision of Part 3 that the Minister has decided is a controlling provision for the action;

(b) economic and social matters.

Factors to be taken into account

(2) In considering those matters, the Minister must take into account:

(a) the principles of ecologically sustainable development; and

(b) the assessment report (if any) relating to the action; and

(ba) if Division 3A of Part 8 (assessment on referral information) applies to the action – the finalised recommendation report relating to the action given to the Minister under subsection 93(5); and

(bc) if Division 4 of Part 8 (assessment on preliminary documentation) applies to the action:

(i) the documents given to the Minister under subsection 95B(1), or the statement given to the Minister under subsection 95B(3), as the case requires, relating to the action; and

(ii) the recommendation report relating to the action given to the Minister under section 95C; and

(c) if Division 5 (public environment reports) of Part 8 applies to the action:

(i) the finalised public environment report relating to the action given to the Minister under section 99; and

(ii) the recommendation report relating to the action given to the Minister under section 100; and

(ca) if Division 6 (environmental impact statements) of Part 8 applies to the action:

(i) the finalised environmental impact statement relating to the action given to the Minister under section 104; and

(ii) the recommendation report relating to the action given to the Minister under section 105; and

(d) if an inquiry was conducted under Division 7 of Part 8 in relation to the action – the report of the commissioners; and

(e) any other information the Minister has on the relevant impacts of the action (including information in a report on the impacts of actions taken under a policy, plan, or program under which the action is to be taken that was given to the Minister under an agreement under Part 10 (about strategic assessments)); and

(f) any relevant comments given to the Minister in accordance with an invitation under section 131 or 131A; and

(g) if a notice relating to the action was given to the Minister under subsection 132A(3) – the information in the notice.

Person's environmental history

(4) In deciding whether or not to approve the taking of an action by a person, and what conditions to attach to an approval, the Minister may consider whether the person is a suitable person to be granted an approval, having regard to:

(a) the person's history in relation to environmental matters; and

(b) if the person is a body corporate – the history of its executive officers in relation to environmental matters; and

(c) if the person is a body corporate that is a subsidiary of another body or company (the parent body) – the history in relation to environmental matters of the parent body and its executive officers.

Minister not to consider other matters

(5) In deciding whether or not to approve the taking of an action, and what conditions to attach to an approval, the Minister must not consider any matters that the Minister is not required or permitted by this Division to consider.

Section 139 of the EPBC Act provides in part:

(2) If:

(a) the Minister is considering whether to approve, for the purposes of a subsection of section 18 or section 18A, the taking of an action; and

(b) the action has or will have, or is likely to have, a significant impact on a particular listed threatened species or a particular listed threatened ecological community;

the Minister must, in deciding whether to so approve the taking of the action, have regard to any approved conservation advice for the species or community.

Annexure B – Documents considered

a) Final decision notice
b) Letters to proponent, Northern Territory Environment Protection Authority (**NT EPA**) and Minister for Defence
c) Response from the proponent to invitation to comment on the proposed decision
d) Departmental documents:
    i) Notice of decision with track changes
    ii) EPBC Act Species and Ecological Communities Report dated 8 March 2024
    iii) Protected Matters Search Tool (PMST) Report dated 12 March 2024
    iv) Department's response to proponent's comments on proposed conditions
    v) Protected Species and Communities Branch statutory document check dated 8 February 2024
    vi) Legal advice received 8 March 2024
    vii) Underwater Cultural Heritage (UCH) Section advice on proponent's changes to UCH conditions dated 12 March 2024.
e) Proposed approval decision briefing package, which included the proposed approval decision brief and its attachments:
    i) Recommendation report
    ii) Proposed approval decision notice
    iii) Letters to proponent, Northern Territory Environment Protection Authority and Minister for Defence
    iv) Referral decision brief and its attachments. This information can be seen in the Statement of Reasons for the referral decision for the proposed action, which was published on the department's website on 27 January 2023
    v) Final Preliminary Documentation (PD) package
    vi) Public comments on the draft PD
    vii) Blue Whale Conservation Management Plan (2015-2025)
    viii) Recovery Plan for Marine Turtles in Australia (2017)
    ix) Sawfish and River Sharks Multispecies Recovery Plan (2015)
    x) Threat abatement plan for predation by the European red fox (2008)
    xi) Threat Abatement Plan for the impacts of marine debris on the vertebrate wildlife of Australia's coasts and oceans (2018)
    xii) Threat abatement plan for predation, habitat degradation, competition, and disease transmission by feral pigs (2017)
    xiii) Threat abatement plan for predation by feral cats (2015)
    xiv) Approved Conservation Advice for *Pristis clavata* (Dwarf Sawfish) (2009)

xv) Approved Conservation Advice for Green Sawfish (2008)

xvi) Approved Conservation Advice for *Pristis pristis* (largetooth sawfish) (2014)

xvii) Approved Conservation Advice for Conservation Advice for *Limnodromus semipalmatus* (Asian dowitcher)(2024)

xviii) Approved Conservation Advice for Conservation Advice for *Numenius madagascariensis* (far eastern curlew)(2023)

xix) Approved Conservation Advice for *Calidris ferruginea* (curlew sandpiper) (2023)

xx) Approved Conservation Advice for Conservation Advice for *Pluvialis squatarola* (grey plover) (2024)

xxi) Approved Conservation Advice for Conservation Advice for *Calidris canutus* (red knot) (2024)

xxii) Approved Conservation Advice for *Calidris acuminata* (sharp-tailed sandpiper) (2024)

xxiii) Marine Bioregional Plan: North Marine Region 2012

xxiv) National Light Pollution Guidelines for Wildlife Including marine turtles, seabirds and migratory shorebirds (2020)

xxv) Wildlife Conservation Plan for Migratory Shorebirds (2015)

xxvi) PMST Report dated 15 February 2024

xxvii) Environmental history check dated 22 January 2024

xxviii) Department's Underwater Cultural Heritage Line Area Advice dated 15 December 2023

xxix) Department's Underwater Cultural Heritage Review of UCH Conditions received 15 February 2024

xxx) Department's Environmental Contamination Advice and Standards Section (ECASS) review of harmful substance Conditions dated 9 February 2024

xxxi) Department's Conditions team second review of Conditions received 21 February 2024

xxxii) PMST Report dated 16 February 2024

f) NT EPA documents, including the NT government approval of the action:

i) Assessment Report and Conditions

ii) NT EPA Approval of the proposed action's, including conditions, dated 22 December 2023

iii) NT EPA Draft Environmental Approval.