CONSULTATION

CONSULTATION INFORMATION SHEET

August 2023

SCARBOROUGH OFFSHORE FACILITY AND TRUNKLINE OPERATIONS ENVIRONMENT PLAN

CARNARVON BASIN, NORTH-WEST AUSTRALIA

Woodside Energy Limited (Woodside) consults relevant persons in the course of preparing an environment plan (EP) to notify them, obtain their input and to assist Woodside to confirm current measures or identify additional measures, if any, that may be taken to lessen or avoid potential adverse effects of the proposed activity on the environment. This is the intended outcome of consultation.

Woodside's aim is to ensure the activity is carried out in a manner that is consistent with the principles of ecologically sustainable development (ESD), by which the environmental impacts and risks of the activity are reduced to as low as reasonably practicable (ALARP) and of an acceptable level. Woodside want relevant persons whose functions, interests or activities that may be affected by the proposed activity to have the opportunity to identify themselves and provide feedback on our proposed activity, in accordance with the intended outcome of consultation.

Overview

Woodside plans to submit the Scarborough Offshore Facility and Trunkline Operations EP in Commonwealth waters, in accordance with the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009* (Cth) (regulations). The EP will cover Floating Production Unit (FPU) installation (hook-up), commissioning, start-up and operations and other support activities, including gravimetry surveys, and inspection, maintenance, monitoring and repair (IMMR) activities for the FPU, subsea infrastructure and the gas export trunkline.

Proposed Activity Overview

Woodside plans to install the FPU and complete subsequent hook-up and commissioning activities, prior to start-up and operations for the Scarborough project within Production Licenses WA-61-L and WA-62-L. Gas from the FPU will be transferred through the gas export trunkline (the Trunkline - Pipeline Licence WA-32-PL) to the Pluto LNG Plant for further processing.

The FPU will be installed and connected to a pre-installed 20-point suction-piled mooring system and the riser pull-in(s) carried out. Hook-up and connection to subsea infrastructure will also occur, prior to commissioning. The commissioning activity involves:

- Dewatering and commissioning of the subsea production system, comprising wellheads, manifolds, flowlines, umbilicals, and communication lines.
- Activities to confirm the integrity of the entire interconnected facility, so it is ready for start-up (RFSU) with the introduction of reservoir hydrocarbons.

The FPU start-up consists of initiating the subsea production system and FPU to allow reservoir gas and processing equipment to reach operational pressures and temperatures, as well as obtaining sufficient and stable equipment inlet flow to enable the equipment to perform to design criteria. Well clean-up and commissioning will also be carried out and gas export trunkline pressurisation and nitrogen (N2) removal.

Routine production operations involve transfer of reservoir fluids, including gas and produced water from the reservoir, along with Mono Ethylene Glycol (MEG) injection at the wells, through the subsea infrastructure to the FPU; and gas export via the Trunkline.

Other activities include gravimetry surveys for the purposes of reservoir monitoring, as well as IMMR activities on the FPU, subsea infrastructure (excluding well intervention or well workover activities) and gas export trunkline, and other contingent activities.

Future decommissioning of infrastructure will be subject to separate future EPs.

Vessels

A range of vessels may be used during the FPU installation, hook-up and commissioning phase including tow, support and anchor handling tugs, light construction vessels, survey vessels, supply/support vessels and contingent accommodation support vessel.

During normal operations, vessels will typically be limited to supply/support vessels and IMMR vessels. The vessel size and type will be dependent on the work scope. Vessels are not planned to anchor/moor on the seabed. It is anticipated vessels will operate 24 hours per day for the duration of activities.

Location and Operations

The FPU and associated subsea production infrastructure will be installed in Commonwealth waters within Production Licenses WA-61-L and WA-62-L, in water depths ranging from ~900 to 1000 m and around 374 km west-northwest of Dampier, Western Australia.

Gas from the FPU will be exported through the ~440 km trunkline to the Pluto LNG Plant in Dampier, Western Australia for further processing.

Communication with mariners

The location of the Scarborough FPU will be marked on nautical charts and will be surrounded by a fixed 500 m radius petroleum safety zone (PSZ).

A temporary exclusion zone will also be in place around installation vessels during activities, to manage vessel movements. These distances will be communicated through marine notices and are typically 500m. Other marine users are permitted to use the area but should take care when entering the relevant Operational Area (provided in Table 1) and remain clear of any exclusion zone(s) in effect.

Assessment

Woodside has undertaken an assessment of the potential impacts and risks to the environment as well as to relevant persons arising from the planned activities as well as unplanned events. This assessment considers timing, duration and location of activities. A number of mitigation and management measures will be implemented and are summarised in Table 3. Further details will be provided in the EP, which is being developed to manage proposed activities.

In preparing the EP, our intent is to minimise environmental and social or cultural impacts associated with the proposed activities, and Woodside are seeking any interest or comments you may have to inform our decision making.

Joint Venture

Woodside is the Titleholder for this activity, on behalf of a Joint Venture comprising both Woodside Energy Scarborough Pty Ltd and Woodside Energy (Australia) Pty Ltd.

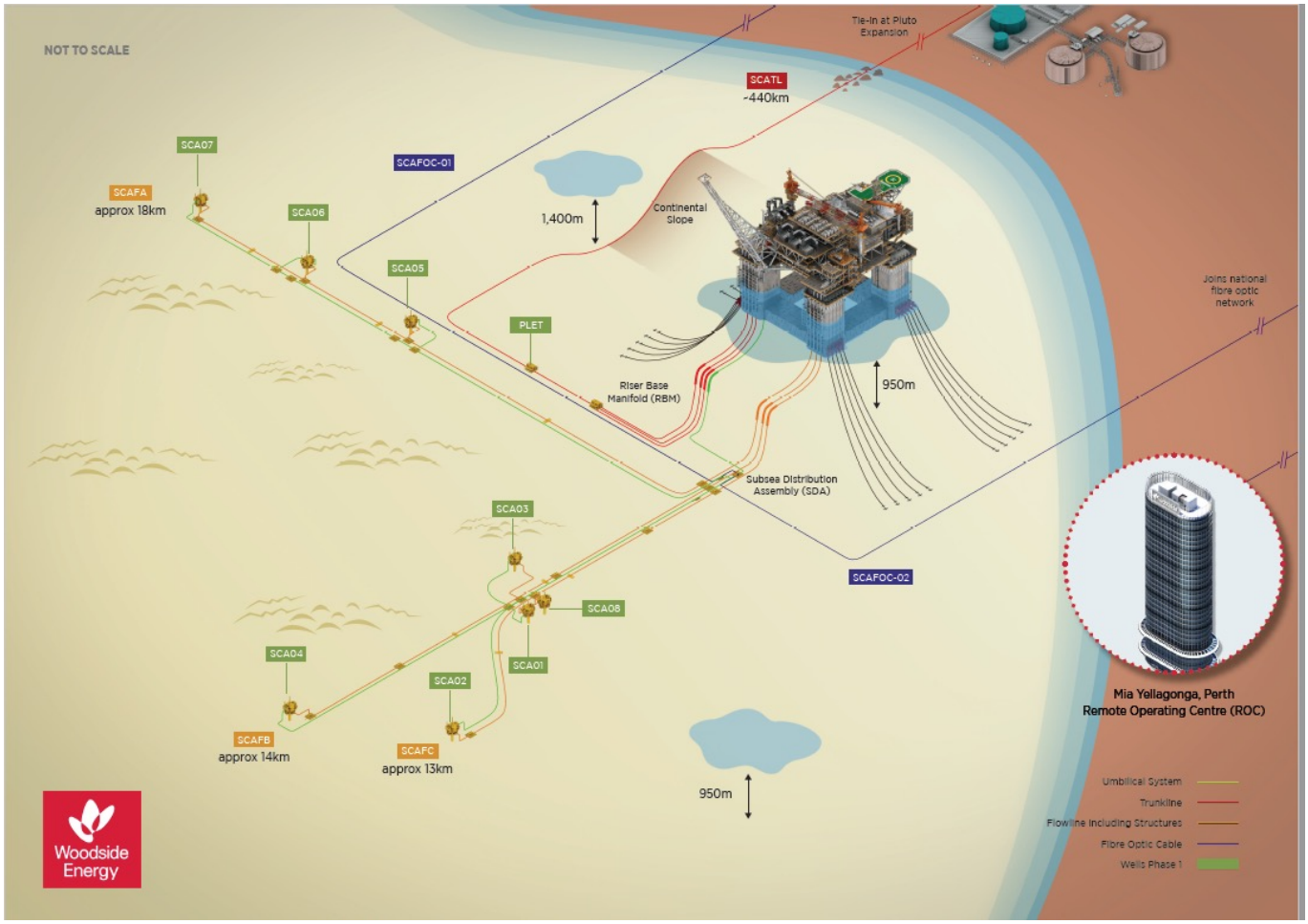

Figure 1. Indicative Scarborough field infrastructure layout

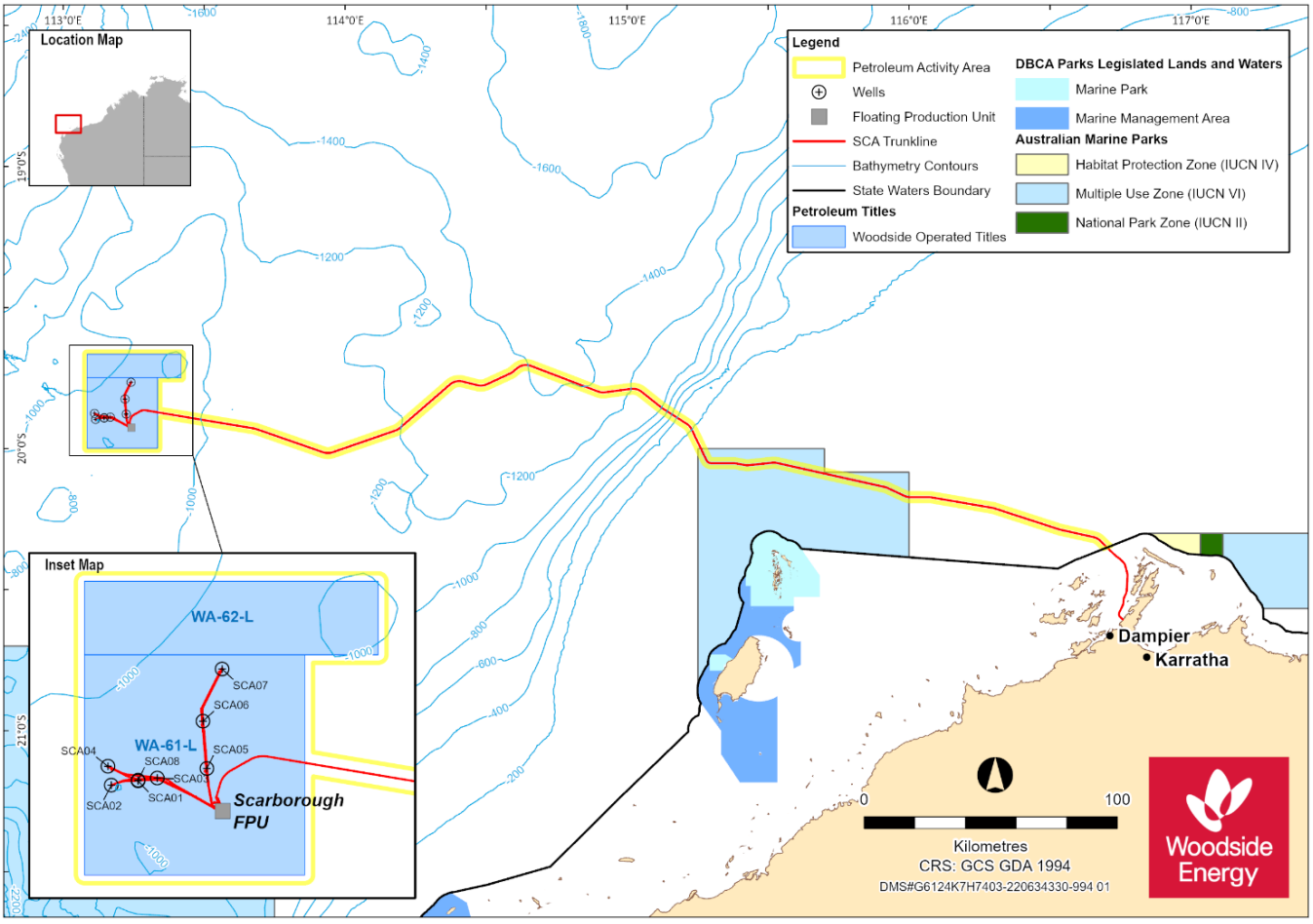

Figure 2. Petroleum Activities Area

Table 1. Activity summary

Scarborough Offshore Facility and Trunkline (Operations) Environment Plan	
Facility type	Floating Production Unit (FPU) and Gas Export Trunkline
Production License Areas	WA-61-L and WA-62-L
Pipeline License	WA-32-PL
Approximate water depth	• FPU: ~950 m • Production Licenses: ~900 m to 1000 m • Trunkline: ~31 m (trunkline route at State waters boundary) to 1400 m (deepest point at KP 275 of the trunkline route)
Commencement date **Approximate estimated duration**	The Petroleum Activities Program includes a number of temporary activities (hook-up, commissioning and start-up), followed by ongoing production of the Scarborough field (operations). The earliest commencement date (subject to approval) is estimated to be the second half of 2025. • FPU Hook-up and commissioning: ~4 months • FPU Start-up: ~3 months • FPU operations: for the life of the EP • Gravimetry: ~2 months
Infrastructure	Key infrastructure includes, but is not limited to: • Moored Floating Production Unit (FPU) with gas processing equipment and utilities • Suction piles and anchor chains • Wells, Christmas trees, manifolds, umbilicals and risers • Gas export trunkline
Vessels	Key vessels include, but are not limited to: • Tow, Support and Anchor Handling Tugs (AHT) • Light Construction Vessel (LCV) • Survey vessel • Supply and support vessel • Accommodation support vessel (contingency)

Operational Areas and Exclusion zones	The Petroleum Activities Area (PAA) consists of the following Operational Areas
	• Offshore Operational Area for activities includes a radius of:
	  • Facility: 2000 m around future location of the FPU
	  • Subsea: 1500 m from the centerline of subsea infrastructure
	  • Gravimetry: 1000 m beyond the boundary of the WA-61-L and WA-62-L
	• Trunkline Operational Area for activities includes a radius of:
	  • 1500 m radius from the centerline of the gas export trunkline (WA-32-PL)
	Fixed 500 m radius petroleum safety zone (PSZ) around the Scarborough FPU.
	Temporary 500 m exclusion zone around vessels to manage vessel movements.

Distance to nearest town from FPU	• ~ 244 km north-northwest of Exmouth • ~ 374 km west-northwest of Dampier
Distance to nearest marine park/nature reserve from FPU	• ~ 77 km north of the Gascoyne Marine Park (Cwlth) • ~ 201 km north-west of Montebello Marine Park (Cwlth) • ~ 180 km north-northwest of Ningaloo Marine Park (Cwlth)

Table 2. Summary of proposed locations. Note: all subsea infrastructure is being installed under construction EPs.

Structure	Approximate Water depth[1]	Approximate Latitude[2]	Approximate Longitude	Petroleum Titles
Facility				
Scarborough FPU	953	19° 55′ 33.731″ S	113° 14′ 29.752″ E	WA-61-L
Gas Export Trunkline *(Proposed location to be installed under Scarborough Seabed Intervention and Trunkline Installation EP)*				
PLET[3]	941	19° 54′ 39.844″ S	113° 14′ 02.837″ E	WA-61-L
Trunkline at State Waters Boundary	33	20° 21′ 01.892″ S	116° 42′ 09.699″ E	-
Subsea Infrastructure *(Proposed Location to be installed under WA-61-L AND WA-62-L Subsea Infrastructure Installation EP)*				
Gas Export Riser Base (GERB)	941	19° 54′ 41.065″ S	113° 14′ 03.987″ E	WA-61-L
PLET	941	19° 54′ 39.844″ S	113° 14′ 02.837″ E	WA-61-L
Flowline A (start)	912	19° 45′ 51.806″ S	113° 14′ 29.149″ E	WA-61-L
Flowline A (end)	946	19° 55′ 09.556″ S	113° 13′ 47.502″ E	WA-61-L
Flowline B (start)	916	19° 52′ 30.765″ S	113° 06′ 43.534″ E	WA-61-L
Flowline B (end)	948	19° 55′ 16.142″ S	113° 13′ 50.783″ E	WA-61-L
Flowline C (start)	914	19° 53′ 48.035 S	113° 06′ 57.617″ E	WA-61-L
Flowline C (end)	948	19° 55′ 18.360″ S	113° 13′ 49.354″ E	WA-61-L
Northern end of mooring array	943	19° 54′ 39.812″ S	113° 14′ 31.321″ E	WA-61-L
Southern end of mooring array	961	19° 56′ 33.071″ S	113° 14′ 28.052″ E	WA-61-L
Eastern end of mooring array	956	19° 55′ 34.784″ S	113° 15′ 32.751″ E	WA-61-L
Western end of mooring array	949	19° 55′ 32.800″ S	113° 13′ 32.795″ E	WA-61-L
NW outer concrete pad	969	19° 39′ 56.013″ S	113° 05′ 04.841″ E	WA-62-L
NE outer concrete pad	928	19° 40′ 04.739″ S	113° 24′ 59.771″ E	WA-62-L
SW outer concrete pad	966	19° 59′ 04.746″ S	113° 05′ 34.065″ E	WA-61-L
SE outer concrete pad	955	19° 59′ 07.213″ S	113° 18′ 57.265″ E	WA-61-L
Wells *(Proposed location to be installed under Scarborough Drilling and Completions EP)*				
Well 1 (Sca0H)	911	19° 53′ 30.302″ S	113° 08′ 44.064″ E	WA-61-L
Well 2 (Sca0A)	913	19° 53′ 47.995″ S	113° 06′ 54.730″ E	WA-61-L
Well 3 (Sca0F)	913	19° 53′ 18.864″ S	113° 10′ 02.008″ E	WA-61-L
Well 4 (Sca0E)	920	19° 52′ 30.982″ S	113° 06′ 40.810″ E	WA-61-L
Well 5 (Sca0G)	919	19° 52′ 40.303″ S	113° 13′ 25.192″ E	WA-61-L
Well 6 (Sca0C)	903	19° 49′ 26.807″ S	113° 13′ 08.840″ E	WA-61-L
Well 7 (Sca0D)	908	19° 45′ 53.390″ S	113° 14′ 27.127″ E	WA-61-L
Well 8 (Sca0B)	911	19° 53′ 27.828″ S	113° 08′ 44.357″ E	WA-61-L

1 approximate mean surface level
2 Datum: GDA94 MGA50
3 Pipeline End Termination

Environment That May Be Affected (EMBA)

The environment that may be affected (EMBA) is the largest spatial extent where the Scarborough FPU Installation, Commissioning and Operations activities could potentially have an environmental consequence (direct or indirect impact). The broadest extent of the EMBA takes into consideration planned and unplanned activities, and for this Environment Plan (EP) is determined by a highly unlikely release of marine diesel to the environment as a result of damage to the production facility or vessel collision. This is depicted in Figure 3.

The EMBA does not represent the extent of the predicted impact of the highly unlikely marine diesel release. Rather, the EMBA represents the merged area of many possible paths a highly unlikely hydrocarbon release could travel depending on the weather and ocean conditions at the time of the release.

This means in the highly unlikely event a hydrocarbon release does occur, the whole EMBA will not be affected at one time - the specific and minimal part of the EMBA that is affected will only be known at the time of the release.

The three hydrocarbon spill modelling sites are representative of the range of locations where a vessel collision could occur in the Petroleum Activities Area and are summarised below. The EMBA has been defined using a combination of all three locations:

- **Outside Mermaid Sound (Location 1)**: Near the State Waters Boundary, this site represents the closest location to shore IMMR activities may occur under this EP.
- **Montebello Marine Park Multiple Use Zone (Location 2)**: This location was chosen to represent around half-way along the trunkline length where IMMR activities may occur under this EP.
- **Scarborough Field (Location 3)**: This location is representative of a spill in the deep-water open-ocean environment in Production License WA-61-L, where the FPU is planned to be installed and activities at the most western end of the Petroleum Activities Area.

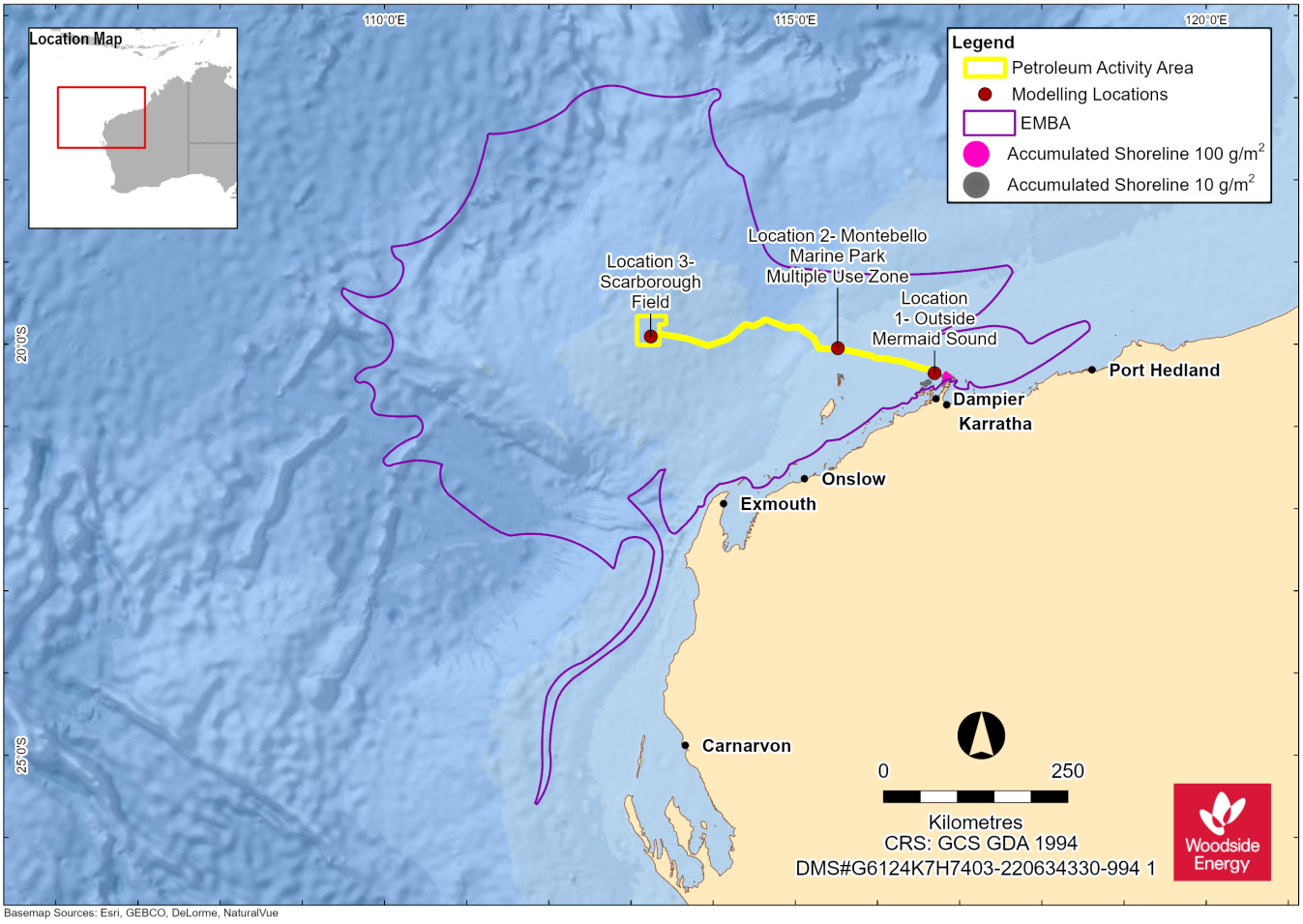

Figure 3. Environment that May Be Affected (EMBA) by a diesel release from an accident/incident during the EP Petroleum Activities Program.

Mitigation and management measures

Woodside has undertaken an assessment to identify potential impacts and risks to the environment arising from the Scarborough FPU installation (hook-up), commissioning, start-up and operations activity, including gravimetry surveys, IMMR activities and other contingent activities. A number of mitigation and management measures for the activity are outlined in **Table 3**. Further details will be provided in the EP.

Impact areas are split into the Offshore Operational Area (nominally the FPU and subsea infrastructure location(s) in WA-61-L / WA-62-L) and the Trunkline Operational Area (1500m either side, from the centerline of the gas export trunkline WA-32-PL)

Table 3. Summary of key risks and/or impacts and preliminary management measures for the Activity*

Potential Impact/Risk	Description of Source of Potential Impact/Risk	Description of Potential Impacts/Risks	Proposed Mitigation and/or Management Measure[1]
Planned Activities (Routine and Non-routine)			
Physical Presence: Interaction with Other Marine Users, Cultural Values & Heritage.	• The presence of FPU, trunkline and other subsea infrastructure has the potential to exclude and/or displace other users from Petroleum Safety Zone (PSZ) and routine/IMMR activities within the PAA respectively. • A range of vessels will be required to complete the hook-up and commissioning activities, prior to start-up and operations. The physical presence and movement of vessels within the PAA has the potential to displace other marine users. • Helicopters will be used to transport personnel, which will occur on a regular basis. • Physical presence of project vessels and activities may have potential to impact cultural values and heritage.	• The Offshore Operational Area is not an area of high commercial fishing activity. Commercial fishing vessels will have a localised exclusion from a 500 m Petroleum safety zone (PSZ) around the FPU and temporary exclusion zones associated with vessel operations. • The Offshore Operational Area does not overlap with Australian Maritime Safety Authority (AMSA) fairways and therefore impacts to commercial shipping vessels are not expected. • In the Trunkline Operational Area impact to commercial shipping is limited to the temporary presence of IMMR vessels. • Tourism and recreation within the Offshore Operational Area are expected to be limited due to the distance offshore and water depths. • During IMMR activities in the Trunkline Project Area potential impacts to tourism and recreational activities would likely be minor interactions (i.e. navigational hazard) and temporary, localised displacement/avoidance. • Several oil and gas facilities are located in proximity to the Trunkline Operational Area. Activities associated with the physical presence of IMMR vessels may result in localised, short-term interactions with industry vessels requiring minor course alteration or readjustment in asset management.	• Vessels adhere to regulatory requirements for navigational safety. • Maintain a permanent 500 m Petroleum Safety Zone around FPU. • Establish temporary exclusion zones around applicable vessels which are communicated to marine users. • Notify relevant government departments, fishing industry representative bodies and licence holders of activities prior to commencement and upon completion of activities. • Notify the Australian Hydrographic Office (AHO) prior to commencement of the activity to enable them to update maritime charts, so that marine users are aware of the activity. • Consult with relevant persons so that they are informed of the proposed activities. • Woodside will actively support the capacity of Traditional Custodians for ongoing engagement and consultation on environment plans, for the purpose of avoiding impacts to cultural heritage values.
Physical Presence: Seabed disturbance	Seabed disturbance may result from the following activities: • Presence of subsea infrastructure, FPU moorings and trunkline modifying marine habitats. • FPU mooring line retrieval and connection operations. • Seabed disturbance during riser/umbilical hook-up to the FPU. • Temporary placement of passive gravity meter, tide gauges during gravimetry surveys. • Deployment of oceanographic monitoring systems. • IMMR activities. • Movement of a Remotely Operated Vehicle (ROV) near the seabed.	• Localised modification of seabed habitat within the PAA. • Seabed disturbance has the potential to result in a change in habitat, water quality and sediment quality, which may affect fauna. However, impacts from seabed disturbance will be highly localised. • Seabed disturbance is not expected to impact adversely on biologically important behaviours or biologically important habitat, including critical habitat. Displacement of individuals will not result in significant impacts at a population level. • The Exmouth Plateau, Continental Slope Demersal Fish Communities and Ancient Coastline at 125 m depth Contour Key Ecological Features (KEFs) overlap the Operational Area. Potential seabed disturbances in this area are expected to be localised and short-term and are unlikely to affect the ecological value of the KEF.	• Infrastructure will be placed on the seabed within the predefined design footprint using positioning technology to limit seabed disturbance. • Infrastructure wet parked (temporarily placed) on the seabed will be tracked and removed. • Vessels are not planned to anchor/moor during routine operations. • Monitoring and maintenance of infrastructure is undertaken in accordance with the IMMR process. • Comply with regulatory requirements for Underwater Cultural Heritage.

Potential Impact/Risk	Description of Source of Potential Impact/Risk	Description of Potential Impacts/Risks	Proposed Mitigation and/or Management Measure[1]
Routine Light Emissions: FPU and Project Vessels	• The FPU and vessels will use external lighting to conduct safe operations at night. • Vessel lighting will also be used to communicate vessels' presence to other marine users (i.e. navigation/ warning lights). • Light emissions from FPU during flaring.	• Light emissions have the potential to affect fauna such as fish, marine reptiles and seabirds by influencing changes in their behaviour or impacting orientation. • The Operational Areas may be occasionally visited by seabirds and marine turtles. Potential impacts are expected to be limited to localised behavioural disturbance to isolated individuals, with no significant impact to seabird foraging or turtle nesting.	• Lighting limited to the minimum required for navigational and safety requirements, except for emergency events.
Routine Acoustic Emissions: FPU and Project Vessels	• Generation of underwater noise from FPU and associated subsea infrastructure and vessels. • Underwater noise may also be generated by geophysical sources during surveys, positioning equipment (transponders), and helicopters.	• Elevated underwater noise can affect marine fauna, including marine mammals, turtles and fish. • Marine fauna associated with the Offshore Operational Area will be predominantly pelagic fish species, with the potential for species such as whale sharks, rays, marine turtles and whale species to transit through the Operational Area. There are no marine fauna Biologically Important Areas (BIAs) within the Offshore Operational Area. Therefore, potential impacts from FPU and vessel noise are likely to be restricted to temporary avoidance behaviour to individuals. • IMMR activities occurring in the Trunkline Operational Area within the migration BIAs during migration seasons for pygmy blue whales and humpback whales, may result in a behavioural response from individuals or groups of whales transiting in proximity to vessel/s. Similarly, potential impacts from acoustic emissions on marine turtles, fish, sharks and rays from IMMR activities are likely to be restricted to localised and temporary avoidance behaviour of individuals.	• Comply with regulatory requirements for interactions with marine megafauna to prevent adverse interactions.
Routine and Non-routine Atmospheric and Greenhouse Gas (GHG) Emissions	• Atmospheric emissions and GHG emissions generated through FPU, vessels and helicopters. • GHG emissions associated with onshore processing of Scarborough gas.	• Emissions from FPU, vessels and helicopters could result in temporary, localised reductions in air quality in the immediate vicinity. • Emissions associated with gas processing onshore (considered as indirect impacts from this Petroleum Activities Program) could result in temporary, localised reductions in air quality limited to the airshed of the gas plant.	• Comply with regulatory requirements for GHG emissions reporting. • Vessel operations planned, where practicable, to minimise fuel consumption and associated GHG/air emissions. • Fuel types will be selected to reduce expected GHG emissions. Project vessels will not use heavy fuel oil (HFO) or intermediate fuel oil (IFO). • Optimise flaring to reduce GHG emissions and allow for safe operation of the facility.

Potential Impact/Risk	Description of Source of Potential Impact/Risk	Description of Potential Impacts/Risks	Proposed Mitigation and/or Management Measure[1]
Routine and Non-routine Discharges: Project Vessels	• Discharge of sewage, grey water and putrescible waste from vessels to the marine environment. • Discharge of deck, bilge and drain water from vessels to the marine environment. • Discharge of brine and cooling water from vessels to the marine environment.	• Impacts to water quality from planned discharges above a slight or negligible level are not expected because of the minor quantities involved, the expected localised mixing zone and high level of dilution into the open water marine environment of the Operational Area. • Similarly, although some marine fauna may transit the Operational Area, the potential for impact remains slight or lower (negligible) due to the localised nature of discharges and rapid dilution.	• Marine discharges will be managed according to regulatory requirements (e.g., Marine Orders / MARPOL).
Routine and Non-routine Discharges: FPU Operations (Wastewater streams)	• Discharge of sewage, grey water and putrescible waste from FPU to the marine environment. • Discharge of deck, bilge and drain water from FPU to the marine environment.	• Localised and slight decrease in water and sediment quality with no lasting effect around discharge locations within Offshore Operational Area. • Negligible impact potential for plankton, epifauna and infauna indirectly from decreased water quality. • Localised and short-term impact potential to fish, marine mammals and marine reptiles from discharges in the Offshore Operational Area. • Impacts from discharges on KEFs in the Offshore Operational Area are expected to the slight with no lasting effects.	• Marine discharges will be managed according to regulatory requirements. • FPU design includes a range of measures that specifically aid in containment of non-routine and routine discharges for example deck drainage collected to a drainage system for separation and collection of hydrocarbons for safe, contained disposal onshore.
Routine and Non-Routine Discharges: FPU and Subsea Commissioning	• Routine and non-routine discharges of commissioning fluids during installation of the FPU and commissioning activities.	• The discharges are expected to result in slight or lower (negligible) impacts including a temporary decline in water quality and sediment quality around the discharge locations with no accumulation and no lasting effect predicted. • Negligible impact to plankton, epifauna and infauna indirectly from decreased water quality. • Localised and short-term impacts to fish, marine mammals and marine reptiles through from discharges in the Offshore Operational Area. • Impacts from discharges on KEFs in the Offshore Operational Area are expected to the slight with no lasting effects.	• Marine discharges will be managed according to regulatory requirements. • Chemicals will be selected with the lowest practicable environmental impacts and risks subject to technical constraints and approved through the Woodside chemical assessment process. • Commissioning procedures implemented.
Routine and Non-Routine Discharges: FPU Operation (Commingled Produced water/cooling water stream)	• Discharge of produced water, cooling water and brine during routine and non-routine operations.	• Localised and slight decrease in water and sediment quality with no lasting effect around discharge locations within Offshore Operational Area. • Negligible impact of injury/mortality to plankton, epifauna and infauna indirectly from decreased water quality. • Localised and short-term impacts to fish, marine mammals and marine reptiles through injury or behavioural changes from discharges in the Offshore Operational Area. • Impacts from discharges on KEFs in the Offshore Operational Area are expected to the slight.	• Marine discharges will be managed according to regulatory requirements. • Chemicals will be selected with the lowest practicable environmental impacts and risks subject to technical constraints and approved through the Woodside chemical assessment process. • Implement adaptive monitoring and management for applicable FPU discharges.

Potential Impact/Risk	Description of Source of Potential Impact/Risk	Description of Potential Impacts/Risks	Proposed Mitigation and/or Management Measure[1]
Routine and Non-Routine Discharges: Subsea Operations and Activities	Discharge of routine and non-routine operational discharges including: • Hydraulic fluid. • Operational and non-process chemicals e.g., corrosion inhibitors biocides. Discharges during typical IMMR activities: • Process and non-process chemicals. • Residual hydrocarbons in subsea infrastructure. • Cement and grout during span rectification.	• The discharges are expected to result in slight or lower (negligible) impacts including a temporary decline in water quality and sediment quality around the discharge locations with no accumulation and no lasting effect predicted. • Impacts from discharges on fish, epifauna and infauna has been assessed as slight or negligible impact significance. • Highly localised changes in habitats/ water quality and faunal communities within KEFs and Australian Marine Parks (AMPs) from planned routine and non-routine hydrocarbon, chemical and cement discharges. Assessed as slight impact significance.	• Marine discharges managed according to regulatory requirements. • Chemicals will be selected with the lowest practicable environmental impacts and risks subject to technical constraints and approved through the Woodside chemical assessment process. • Subsea infrastructure flushed where practicable prior to disconnection to reduce volume/ concentration of hydrocarbons released to the environment. • Limit volume of subsea control fluid discharged to the marine environment through monitoring subsea control fluid use and investigating material discrepancies.
Unplanned Events (Accidents / Incidents)			
Unplanned Hydrocarbon Release: FPU Loss of Structural Integrity	• Surface or subsea release from flowlines and FPU to the marine environment and atmosphere. • Hydrocarbon release from topsides equipment to the marine environment and atmosphere.	• Impacts to water and sediment quality from marine diesel oil release caused by a loss of structural integrity. • Marine diesel is a relatively volatile, nonpersistent hydrocarbon with up to approximately 40% evaporating within the first 24 hours for a surface spill. • Potential impacts across the EMBA will be assessed including receptors such as plankton, mangroves, seabirds and migratory shorebirds, saltmarshes, coral, tourism, recreation and cultural heritage (for example). • Considering receptor sensitivity, potential loss of containment volume(s) and potential spill locations, most receptors are expected to be rated as having a potential consequence level of 'Minor' or less (Slight or Negligible). Impact assessment will be informed by loss of containment modelling and existing environment knowledge, similar to other Scarborough Environment Plans.	**Preventing loss of structural integrity** • The subsea infrastructure and FPU design include a range of measures that specifically aid in minimising the risk of external damage. • Woodside management system implemented during operations to maintain structural safety critical element systems and safety instrumented systems to an acceptable standard. • Ongoing process and structural monitoring, inspection, planned maintenance and repair, to ensure process and structural integrity are maintained within the design envelope. • Communication with approaching vessels. • Vessels entering the 500 m PSZ are managed in accordance with the facility operating procedures. **Spill response arrangements:** • Develop an operations specific Oil Pollution Emergency Preparation document (OPEP) including first strike response plan. • Arrangements supporting the Oil Pollution Emergency Preparation document (OPEP) will be tested to ensure the OPEP can be implemented as planned. • Emergency response activities would be implemented in line with the OPEP.

Potential Impact/Risk	Description of Source of Potential Impact/Risk	Description of Potential Impacts/Risks	Proposed Mitigation and/or Management Measure[1]
Unplanned Hydrocarbon Release: Vessel Collision	Vessels will use marine diesel fuel, meaning a vessel collision involving a project vessel or third-party during the activity may result in the release of marine diesel. For a collision to result in the worst-case scenario diesel release, several factors must occur: • Vessel interaction must result in a collision. • The collision has enough force to penetrate the vessel hull and in the location of a fuel tank. • The fuel tank must be full or at least of volume which is higher than the point of penetration.	• Marine diesel is a relatively volatile, nonpersistent hydrocarbon with up to approximately 40% evaporating within the first 24 hours. • Potential impacts across the EMBA will be assessed including receptors such as plankton, mangroves, seabirds and migratory shorebirds, saltmarshes, coral, tourism, recreation and cultural heritage (for example). • Considering receptor sensitivity, potential loss of containment volume(s) and potential spill locations, most receptors are expected to be rated as having a potential consequence level of 'Minor' or less (Slight or Negligible). Impact assessment will be informed by loss of containment modelling and existing environment knowledge, similar to other Scarborough Environment Plans.	• Comply with regulatory requirements for the prevention of vessel collisions and safety and emergency arrangements. • Notify relevant government departments, fishing industry representative bodies and licence holders of activities prior to commencement and on completion of activities. • Establish temporary exclusion zones around vessels which are communicated to marine users to reduce the likelihood of collision. • A management plan for simultaneous operations is in place when working in vicinity of other Woodside operations/ activities. **Spill response arrangements:** • Develop an operations specific Oil Pollution Emergency Preparation document (OPEP) including first strike response plan. • Arrangements supporting the Oil Pollution Emergency Preparation document (OPEP) will be tested to ensure the OPEP can be implemented as planned. • Emergency response activities would be implemented in line with the OPEP.
Unplanned Hydrocarbon Release: Loss of Well Containment	• Accidental loss of gas to the marine environment due to loss of well control.	• Negligible impacts to the marine environment due to Scarborough reservoir containing no measurable liquid fraction (predominantly natural gas), and as such there is expected to be no or negligible liquid component in the event of a loss of containment. There will be no lasting effect from the localised change in water quality associated with dry gas dissolution into the water column.	**Preventing loss of well containment** • Offshore Petroleum and Greenhouse Gas Storage (Resource Management and Administration) Regulations 2011: accepted WOMP, which describes the well design and barriers to be used to prevent a loss of well control. • As-built checks that shall be completed during well operations to establish a minimum acceptable standard of well integrity is achieved.
Unplanned Hydrocarbon Release: Trunkline, Flowline and Riser Loss of Containment	• Release of hydrocarbons resulting from loss of trunkline containment. • Release of hydrocarbons resulting from loss of containment of subsea flowlines, risers and infrastructure.	• Temporary reduction in water quality in the immediate vicinity of the hydrocarbon release resulting in no lasting effects. The negligible liquid component of the hydrocarbon means effects will be dampened with methane gas dissolving into the surrounding water column.	**Preventing loss of Trunkline, flowline and riser containment** • The Trunkline, flowline and riser design includes a range of measures that specifically aid in minimising the risk of external damage. • Woodside management system implemented during operations to maintain infrastructure integrity, communication systems and safety instrumented systems to an acceptable standard.

Potential Impact/Risk	Description of Source of Potential Impact/Risk	Description of Potential Impacts/Risks	Proposed Mitigation and/or Management Measure[1]
Unplanned Hydrocarbon or Chemical Release: Hydrocarbon Release during bunkering/ refuelling and Chemical Release during Transfer, Storage and Use	• Loss of hydrocarbons (diesel) to marine environment from bunkering/ refuelling. • Chemical release to marine environment during transfer, storage and use.	• Localised and temporary change in water quality from a marine diesel or chemical spill. • Injury/mortality to seabirds, fish, plankton, marine mammals and marine reptiles from a marine diesel or chemical spill.	• Bunkering equipment controls. • Liquid chemical and fuel storage areas bunded or secondarily contained when they are not being handled or temporarily moved. • Contractor procedures include requirements to be implemented during bunkering/refuelling operations.
Unplanned Discharges: Deck and Subsea Spills	• Accidental discharge of hydrocarbons/ chemicals from project vessels deck activities and equipment, from subsea ROV hydraulic leaks. • Unplanned release of chemicals or hydraulic fluid due to failure of subsea equipment.	• Unplanned discharges of non-process chemicals and hydrocarbons may decrease the water quality in the immediate vicinity of the release. Only small volumes are anticipated, resulting in very short-term impacts to water quality and limited to the immediate release location. • As a result of a change in water quality, further impacts to receptors may occur, however impacts to marine fauna are expected to be limited to temporary irritation of sensitive membranes to individuals and are considered slight or less (negligible).	• Comply with regulatory requirements for the prevention of marine pollution for project vessels. • Liquid chemical and fuel storage areas are bunded or secondarily contained when they are not being handled/moved temporarily on project vessels. • Spill kits positioned in high-risk locations around the vessels (near potential spill points such as transfer stations). • Chemicals will be selected with the lowest reasonably practicable environmental impacts and risks subject to technical constraints and approved through the Woodside chemical assessment process.
Unplanned Discharges: Loss of Hazardous and Non-Hazardous Wastes/ Equipment	• Accidental loss of hazardous or non-hazardous solid wastes / equipment to the marine environment.	• The potential impacts of hazardous or non-hazardous solid wastes and equipment accidentally discharged to the marine environment include contamination of the environment as well as secondary impacts relating to potential contact of marine fauna with wastes. • The temporary or permanent loss of waste materials/equipment into the marine environment is not likely to have a significant environmental impact, based on the location of the Operational Area, the types, size and frequency of wastes that could occur and species present.	• Comply with regulatory requirements for the prevention of marine pollution and handling of hazardous wastes (i.e., Marine Orders 95 and 94). • Implement waste management procedures which provide for safe handling and transportation, segregation and storage and appropriate classification of waste generated. • Solid waste/equipment dropped to the marine environment is to be recovered where safe and practicable to do so. • Where retrieval is not practicable and/or safe, material items (property) that are lost to the marine environment will undergo an impact assessment and will be added to the inventory for the title.

Potential Impact/Risk	Description of Source of Potential Impact/Risk	Description of Potential Impacts/Risks	Proposed Mitigation and/or Management Measure[1]
Physical Presence (Unplanned): Seabed Disturbance	• Dropped objects resulting in the disturbance of benthic habitat.	• Unplanned seabed disturbance may result in localised changes to water and sediment quality or a localised temporary impact to benthic communities and is therefore considered to present a negligible risk. • Potential impacts to KEFs which intersect the PAA of the activity are considered to be minor as they would be limited to the footprint of a dropped object resulting in potential highly localised and temporary change in habitat.	• Project vessel work procedures for lifts, bulk transfers and cargo loading. • Subsea lifts of equipment will occur overboard in a designated deployment zone to reduce the risk of dropped objects in proximity to existing subsea infrastructure that could potentially cause damage/leaks. • FPU and project vessel inductions include control measures for dropped object prevention. • Dropped objects intended to be recovered and relocated where safe and practicable to do so. • Where retrieval is not practicable and/or safe, material items (property) lost to the marine environment will undergo an impact assessment and will be added to the inventory for the title. • Appropriate approval obtained from third party asset owner prior to IMMR activities being carried out in proximity to asset.
Physical Presence (Unplanned): Vessel Collision with Marine Fauna	• Vessel movements have the potential to result in collisions between the vessel (hull and propellers) and marine fauna. • The factors contributing to the frequency and severity of impacts due to collisions vary greatly due to vessel type, vessel operation (specific activity, speed), physical environment (e.g., water depth) and the type of animal potentially present and their behaviours.	• The risk of vessel collision with marine mammals is present year-round but is seasonally elevated for species such as humpback whales and pygmy blue whales during migration periods and within migration BIAs. The Offshore Operational Area does not overlap with cetacean BIAs or critical habitat. Given this, and the slow speeds at which project vessels operate, collisions with cetaceans are considered highly unlikely. • Whilst a portion of the Trunkline Operational Area overlaps the pygmy blue whale and humpback whale migration BIAs, this overlap represents a very small proportion of the overall area of the BIA. Given the short duration of IMMR activities, and the slow speeds at which project vessels operate, interactions with whales are considered highly unlikely. • IMMR activities within sensitive turtle areas (BIAs and critical habitat) will be short term and intermittent, reducing the potential for impact at the individual and population level. • It is expected whale shark presence within the Operational Area would not comprise significant numbers and their presence would be transitory and of short duration. Given the slow speeds at which project vessels operate, vessel collisions with whale sharks are considered highly unlikely.	• Comply with regulatory requirements for interactions (e.g., EPBC Regulations 2000 – Part 8 Division 8.1) with marine fauna to reduce the likelihood of a collision occurring.

Potential Impact/Risk	Description of Source of Potential Impact/Risk	Description of Potential Impacts/Risks	Proposed Mitigation and/or Management Measure[1]
Physical Presence (Unplanned): Introduction of Invasive Marine Species (IMS)	• Introduction and establishment of IMS within the PAA.	• It is not credible for IMS to be introduced and establish on the seabed or subsea structures in the Offshore Operational Area as these deep waters are not conducive to the settlement and establishment of IMS. • The Trunkline Operational Area in shallower waters (30 – 40 m) present a slightly increased risk of IMS establishment, however, the risk of establishment, whilst credible, is remote. • Given the low likelihood of IMS translocation to and colonisation within the PAA, project activities are unlikely to result in establishment of IMS, and as such will not adversely affect other marine user activities in the region.	• Ballast water and biofouling will be managed according to regulatory requirements, including the Australian Ballast Water Management Requirements, and the Australian Biofouling Management Requirements, as applicable. • Woodside's IMS risk assessment process will be applied to project vessels and immersible equipment entering the PAA.

[1] These mitigation and management measures are subject to change through the consultation and subsequent assessment process and may not represent content in the publicly available EP or in the final plan once accepted.

Feedback

Woodside consults relevant persons in the course of preparing Environment Plans to notify them of the activity and to obtain relevant feedback to inform its planning for proposed petroleum activities in the region.

If you would like to comment on the proposed activities outlined in this information sheet, or would like additional information, please contact Woodside before **11 September 2023** via:

E: Feedback@woodside.com
Toll free: 1800 442 977

You can subscribe on our website to receive Consultation Information Sheets for proposed activities:

www.woodside.com/sustainability/consultation-activities.

Please note that stakeholder feedback will be communicated to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) as required under legislation. Woodside will communicate any material changes to the proposed activity to affected stakeholders as they arise.

Please note that your feedback and our response will be included in our Environment Plan for the proposed activity, which will be submitted to NOPSEMA for acceptance in accordance with the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009* (Cth) and support other regulatory processes associated with the planned activities (which may or may not be confidential).

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA upon submission of the Environment Plan in order for this information to remain confidential to NOPSEMA.