

information sheet gorgon gas development backfill fields



overview

Chevron Australia, on behalf of the Gorgon Joint Venture, operates the Gorgon Gas Development (Gorgon) located off the northwest coast of Western Australia (WA).

The initial Gorgon approvals process envisaged the development of other 'backfill' fields in the Greater Gorgon Area as the Gorgon and Jansz–Io fields depleted over time. A backfill field is a supply of natural gas that is required to maintain the throughput to an operating facility.

The Gorgon Gas Development Backfill Fields (the Development) represents the next phase of Gorgon, and the intent is to maintain current rates of liquefied natural gas (LNG) and domestic gas production at the Gorgon Gas Facility on Barrow Island.

In 2023, we sought initial feedback from stakeholders, including Traditional Owners, to help us prepare an Offshore Project Proposal (OPP) for submission to the National Offshore Petroleum Safety and Environment Management Authority (NOPSEMA).

The Gorgon Gas Development Backfill Fields OPP outlines proposed development activities for the next seven backfill fields: Chandon, Chrysaor, Dionysus, Eurytion, Geryon, Semele and West Tryal Rocks.

NOPSEMA has now published the OPP on its website for public comment.

location and water depth

The seven backfill fields outlined in this OPP are located about 200 kilometres (km) north of Onslow and 100 km northnortheast of Barrow Island. Water depths in the area range from ~150 metres (m) to 1,400 m. Most of the fields are in water depths greater than 800 m. The closest infrastructure to land will be ~60 km from Barrow Island and ~130 km from Onslow. The outermost infrastructure will be ~190 km from Barrow Island and ~250 km from Onslow.

Chandon, Chrysaor, Dionysus, Eurytion, Geryon, Semele and West Tryal Rocks are located across titles WA-5-R, WA-14-R, WA-15-R, WA-20-R, WA-21-R, WA-22-R, WA-53-R, WA-75-R and WA-76-R.

Figure 1 shows the operational area (OA) in which the petroleum activities described in the OPP will be undertaken, which includes a five-km buffer around the most conservative indicative location of the backfill fields' infrastructure.

schedule and duration

The development of backfill fields will be staggered, so all fields will not be developed in a single campaign.

Subject to relevant approvals, Geryon and Eurytion have been earmarked as the next fields to be developed and are anticipated to be co-developed and use common infrastructure.

Offshore activities for Geryon and Eurytion are proposed to commence from 2026 at the earliest, with operations from 2028 for ~20-25 years.

The subsequent fields will likely be developed post start-up of Geryon and Eurytion, and as each field declines a new field(s) will be developed into the Gorgon and Jansz trunklines. The specific order of development for the remaining backfill fields has not yet been finalised.

The end of field life for the Development is estimated ~2070.

During development periods, work will occur in planned stages and could occur during the day or night.

activity summary

The Development intends to tie the seven backfill fields into existing subsea gathering infrastructure which connects the two currently operational gas fields, Gorgon and Jansz-Io, with the Gorgon Gas Facility. At the Gorgon Gas Facility, gas is processed and liquefied for export as LNG or piped to the mainland for WA domestic gas users.

Planned activities in the fields include:

- conducting geotechnical and geophysical surveys
- drilling wells
- installing a subsea gathering network that connects the wells to the existing Gorgon and Jansz-Io pipelines
- commissioning and start-up
- operating infrastructure, including inspection, maintenance and repair
- operating vessels, helicopters and remotely operated vehicles
- · decommissioning.

Subsea infrastructure will include:

- wells and associated infrastructure
- flowlines carrying gas from the fields to the Gorgon and Jansz-Io pipeline tie-in locations

• umbilicals to convey electricity, fibre-optic cables, and hydraulic and other fluids.

No permanent structures will be above the sea surface.

the approval process

The Gorgon Gas Development primary approval granted under the Environmental Protection and Biodiversity Conservation Act 1999 (Cth) and Environmental Protection Act 1986 (WA) included development of the Gorgon and Jansz-Io fields and construction of the Gorgon Gas Facility on Barrow Island. These approvals envisaged the subsequent development of backfill fields within the Greater Gorgon Area.

The backfill fields will not increase the life or capacity of the Gorgon Gas Facility beyond the approved Gorgon Gas Development.

The OPP includes:

- an assessment of environmental impacts and risks to show that the activities are environmentally acceptable
- identification and assessment of feasible alternatives including a comparison of environmental impacts and risks
- clearly defined and measurable environmental performance outcomes, and
- sufficient information to allow the public to provide informed comment.

After submission, NOPSEMA first checks that there is enough information for members of the public to make an informed comment.

NOPSEMA then sets a public consultation period, during which stakeholders can submit comments. After comments have been received and addressed, NOPSEMA begins their assessment to decide whether to accept or reject the OPP.

NOPSEMA's acceptance of the OPP is a general indication of the Development's environmental acceptability, however, it does not allow Chevron Australia to commence work.

Before commencing work on any part of the Development, we will prepare a more detailed environment plan (EP) for each petroleum activity for review and acceptance by NOPSEMA. During the preparation of the EPs, we will conduct further and more detailed consultation with relevant persons to inform the control measures adopted for each activity.

As each backfill development under the OPP moves towards production, Chevron Australia will apply for a life-of-field Petroleum Production Licence to allow for the recovery of petroleum and related activities in the relevant area.

environment that may be affected (EMBA)

As part of our environmental assessment and consultation process, we create an EMBA map to provide geographical context for stakeholders to determine if their functions, interests or activities may be affected by an offshore activity during operations or in an emergency scenario.

Figure 2 shows the OA and the EMBA. The EMBA has been defined through combining 300 simulations from a loss of well control scenario from each of the seven fields under different

weather and ocean conditions. This means that in the highly unlikely event an unplanned release does occur, a geographical area much smaller than the EMBA would be affected. Shoreline loading refers to areas of the coast that may be impacted by hydrocarbons.

Chevron Australia has systematic control measures to prevent and mitigate emergencies and to reduce the impact of planned activities on the environment, including ecological, social and cultural values and sensitivities.

Table 1 summarises the key impacts and risks and proposed controls identified at this stage to manage these to levels that are acceptable. Additional control measures may be identified during the consultation process and preparation of EPs for each petroleum activity.

your feedback

NOPSEMA has now published the Gorgon Gas Development Backfill Fields OPP on its website for public comment until 1 November 2024.

This allows community members and stakeholders to review and provide feedback on environmental management matters related to our activities.

To view the OPP or submit a comment, visit NOPSEMA's website:

- consultation.nopsema.gov.au
- or scan the QR code



For more information on our proposed offshore activities visit australia.chevron.com/feedback, or call tollfree on 1800 225 195.

Table 1: Summary of key impacts/risks and key proposed control measures for proposed activities.

Aspect	Potential interaction (impacts/risks)	Key proposed control measures ¹		
First Nations cultural heritage values (tangible and intangible)	 Potential disturbance to underwater cultural heritage (UCH) during IMR activities. Potential changes to cultural values, including songlines, dreaming stories and culturally important marine fauna. 	 A UCH 'finds protocol' will be implemented where there are activities interacting with the seabed with the risk of disturbing unlocated First Nations UCH, to ensure discoveries are identified and responded to with adequate conservation and management actions. Control measures related to marine fauna and other cultural values and features are outlined in sections below. Chevron Australia is committed to ongoing engagement and consultation with Traditional Owners and their representative bodies. This will continue to inform our understanding of cultural values and features and facilitate the co-design of appropriate controls to avoid and mitigate impacts. 		
Planned activities				
Seabed disturbance from surveys, anchors used for mooring, drilling activities, installation of subsea infrastructure, maintenance and repair works and decommissioning	 Seabed disturbance may result in alteration of benthic marine habitats, localised and temporary reduction in water quality. 	 Pre-lay surveys will be conducted to identify and avoid emergent seabed features and underwater cultural heritage before installing subsea infrastructure. Mooring analysis will be undertaken before anchoring the mobile offshore drilling unit (MODU), consistent with relevant codes and standards. Vessels will meet the crew competency, navigation equipment, and radar requirements of Chevron Australia's MSRE process. Campaign-specific pre-mobilisation Hazard Identification and Risk Assessment (HIRA) will be undertaken prior to maintenance or repair activities, which includes consideration of environmental impacts and risks of the campaign. Implement Chevron Australia's Asset Retirement philosophy, which is aligned with legislative requirements. 		
Air and Greenhouse Gas (GHG) emissions	 Combustion of fuel from the MODU, vessels and helicopters within the OA may result in a localised and temporary reduction in air quality and a contribution to the reduction of the global atmospheric carbon budget. Direct GHG emissions within the OA and indirect GHG emissions from activities associated with processing of gas at the Gorgon Gas Facility on Barrow Island, transport and third-party end use of products, may result in contribution to the reduction of the global atmospheric carbon budget. 	 Reduced sulfur content fuel will be used. Vessels will comply with the requirements of Marine Order 97 (MARPOL 73/78 Annex VI) in relation to air pollution. Indirect Scope 1 GHG emissions from activities associated with processing of gas from the backfill fields at the Gorgon Gas Facility on Barrow Island will be managed in accordance with Ministerial Statement 800 (as amended by MS 1198) and are subject to the Federal Government's Safeguard Mechanism. 		

1 Proposed control measures are subject to change following the NOPSEMA public comment period and subsequent assessment process.

Aspect	Potential interaction (impacts/risks)	Key proposed control measures ¹		
Light emissions	 Navigation and operational lighting from MODU and vessels within the OA may result in a localised and temporary change in ambient light. Change in ambient light may result in the temporary attraction or deterrence of light- sensitive species. 	 MODU and vessels will meet lighting requirements of the Chevon Corporation Marine Standard. MODU and vessels working at night within a marine turtle biologically important area will be required to reduce external lighting to the minimum required for safe operations and navigation. 		
Underwater sound from surveys, drilling and installation activities, support vessels, helicopter operations and decommissioning	 Drilling and installation activities, vessels and helicopter operations within the OA may result in localised and temporary change in ambient underwater sound. Seabed disturbance from IMR activities may result in the alteration of marine habitat and a localised and temporary change in water quality. 	 In accordance with EPBC Regulations 2000 - Part 8 Division 8.1 - Interacting with cetaceans, vessels and helicopters will implement caution and no approach zones, where practicable. In accordance with the EPBC Act Policy Statement 2.1 - Interaction between Offshore Seismic Exploration and Whales: Industry Guidelines, Vertical Seismic Profiling operations will implement precaution zones and management procedures, where practicable. Where required, appropriate acoustic mitigation and adaptive management measures will be developed in the EP phase in alignment with the Blue Whale Conservation Management Plan. 		
Planned discharges from MODU and vessel operations	 Planned discharges from MODU and vessel operations may result in localised and temporary change in water quality. Change in ambient water quality may result in changes to predator-prey dynamics. 	 Vessels will comply with the requirements of Marine Order 96 (MARPOL 73/78 Annex IV) in relation to sewage discharge. Vessels will comply with the requirements of Marine Order 95 (MARPOL 73/78 Annex V) in relation to food waste discharge. Vessels will comply with the requirements of Marine Order 91 (MARPOL 73/78 Annex I) in relation to oily bilge water discharges. 		
Planned discharges from drilling and subsea operations	 Planned discharges from drilling and installation/ start-up activities may result in localised and temporary reduction in water quality and alteration or smothering of benthic habitat. A change in ambient water quality may result in indirect impacts to fauna arising from chemical toxicity. 	 Pre-drilling or installation surveys to verify that no emergent seabed features/ obstacles are present. Where these features are identified, infrastructure location may be amended if practicable. Subsea fluids planned for discharge are subject to the hazardous materials selection. process as per Chevron Australia's Hazardous Materials Management Procedure. Implement Chevron Australia's Offshore Drilling Fluid Guidelines. 		
Physical presence of MODU, installation vessels, wellhead, subsea infrastructure and support vessels within the OA	 Presence of MODU, installation vessels, wellhead, other subsea infrastructure and support vessels within the OA has the potential to interact with other marine users. Presence of MODU, wellhead, other subsea equipment and support vessels within the OA has the potential to interact with marine fauna. 	 Marine safety information to be issued via AUSCOAST and/or Notice to Mariners where required prior to commencing key phases of activities. Relevant parties will be advised of the commencement of key phases of activities and any exclusion zone information. Vessels will meet the crew competency, navigation equipment, and radar requirements of the Chevron Corporation Marine Standard. In accordance with EPBC Regulations 2000 - Part 8 Division 8.1 - Interacting with cetaceans, vessels and helicopters will implement caution and no approach zones, where practicable. Avoid entrainment of fauna during water intake, by use of intake screens and controlling intake velocity. Consultation with relevant persons will be undertaken for all petroleum activities as part of EP development for each petroleum activity. Implement Chevron Australia's Asset Retirement philosophy, which is aligned with legislative requirements. 		
Unplanned events activities				
Introduction of invasive marine pests	 Planned discharge of ballast water or the presence of biofouling on MODU or vessels may result in the introduction of an invasive marine pest. 	 Vessels will meet the requirements of Chevron Australia's Quarantine Procedure for Marine Vessels. Where required, vessels and MODU will have a current antifouling system certification in accordance with Australian Maritime Safety Authority Marine Order Part 98 (Anti-fouling systems). Ballast water exchanges will be managed in accordance with the Australian Ballast Water Management Requirements. Where required, vessel pre-arrival information will be reported through the Maritime Arrivals Reporting System as per the Commonwealth Biosecurity Act 		

2015.

Aspect	Potential interaction (impacts/risks)	Key proposed control measures ¹
Release of solid objects	 MODU and vessel operations activities may result in an unplanned release of waste to environment causing marine pollution. Accidental dropped object resulting in potential environmental impacts associated with hydrocarbon exposure from a subsea release may result in marine pollution, shoreline impacts of subtidal and intertidal habitats, indirect impacts to fisheries, and a reduction in amenity. 	 Vessels will comply with the requirements of Marine Order 95 (MARPOL 73/78 Annex V) in relation to managing waste (garbage) offshore. MODU and vessels will have specific lifting plans in place for cranes before commencing lifting operations and transfers to prevent dropped objects. Any dropped objects will be retrieved if practicable.
Minor loss of containment	 Unplanned release of hazardous material to the environment may result in indirect impacts to fauna arising from chemical toxicity. 	 MODUs and vessels will have specific lifting plans in place for cranes before commencing lifting operations and transfers, to prevent dropped objects. Vessels will meet the requirements of the Chevron Corporation Marine Standard, including the pre-mobilisation inspections of equipment, couplings and secondary containment. MODU and vessels will have a bulk transfer procedure in place prior to the activities commencing. Vessels will comply with the requirements of Marine Order 91 (MARPOL 73/78 Annex I) in relation to having an approved Ship Oil Pollution Emergency Plan in place.
Vessel collision event	 A vessel collision event may occur as a result of a loss of Dynamic Positioning, navigational error or floundering due to weather. Potential environmental impacts associated with hydrocarbon exposures from a vessel collision event may result in marine pollution, smothering of subtidal and intertidal habitats, indirect impacts to fisheries, reduction in amenity (resulting in impacts to tourism and recreation) and changes to values and sensitivities of marine protected areas. 	 Notification to relevant agencies of activities and vessel movements to allow them to send warnings and/or notices to mariners prior to commencing activities. MODU and vessels will meet the requirements of the Chevron Corporation Marine Standard, including pre-mobilisation inspections of equipment, couplings, and secondary containment. Vessels will comply with the requirements of Marine Order 91 (MARPOL 73/78 Annex I) in relation to having an approved Ship Oil Pollution Emergency Plan in place. Emergency response will be implemented in accordance with the response arrangements and strategies detailed in Chevron Australia's OPEP. Where required, operational and scientific monitoring undertaken in accordance with Chevron Australia's OSMP.
Unplanned release from hydrocarbon system	 An unplanned loss of the hydrocarbon system may occur due to an unplanned hydrocarbon influx, breach of well fluids, or loss of hydrostatic barrier. Potential environmental impacts associated with hydrocarbon exposures from a loss of well control may result in marine pollution, smothering of subtidal and intertidal habitats, indirect impacts to fisheries, and reduction in amenity (resulting in impacts to tourism and recreation) and changes to values and sensitivities of marine protected areas. 	 Before commencing offshore activities, relevant agencies will be notified of activities, vessel movements, and requested exclusion zones, to enable them to generate radio navigation warnings and/or Notice to Mariners. MODU and vessels will meet the requirements of the Chevron Corporation Marine Standard, including pre-mobilisation inspections of equipment, couplings, and secondary containment. MODU and vessels will comply with the requirements of Marine Order 91 (MARPOL 73/78 Annex I) in relation to having an approved Ship Oil Pollution Emergency Plan or equivalent in place. Emergency response will be implemented in accordance with the response arrangements and strategies detailed in Chevron Australia's OPEP. Where required, operational and scientific monitoring undertaken in accordance with Chevron Australia's OSMP. NOPSEMA-accepted Well Operations Management Plan (WOMP) in place for all wells, in accordance with the Offshore Petroleum and Greenhouse Gas Storage (OPGGS) Act requirements.





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