ExxonMobil

Bass Strait Operations

Decommissioning Report 2022

Esso Australia Resources Pty Ltd

ExxonMobil

Esso Australia Resources Pty Ltd and Woodside Energy (Bass Strait) Pty Ltd are 50:50 co-venturers in a joint venture for the exploration, development and production of oil and gas from Bass Strait and are the owners of the Longford Facility. Esso Australia Resources Pty Ltd is the designated Operator of the joint venture under the Gippsland Basin Joint Venture Operating Agreement. EARPL receives services, including personnel, from its wholly owned subsidiary, Esso Australia Pty Ltd. Esso Australia Pty Ltd is "operator" as defined in the *Occupational Health and Safety Regulations 2007*.

Esso Australia Resources Pty Ltd acknowledges Aboriginal and Torres Strait Islander people as the Traditional Custodians of the land and acknowledges and pays respect to their Elders, past and present. Esso Australia Resources Pty Ltd is committed to safe and inclusive workplaces, policies and services for people of LGBTIQ communities and their families.

This annual Decommissioning Report provides a progress update on Esso's decommissioning activities in Bass Strait from 1 January to 31 December 2022. It includes information about key safety, health, environment and social management progress associated with decommissioning activities.

The Report forms part of Esso's commitment to keep government, interested non-government organisations and relevant persons informed of decommissioning activities.

1.1 Overview

Esso Australia Resources Pty Ltd (Esso) is a wholly owned subsidiary of ExxonMobil Australia Pty Ltd. Esso is the operator of the assets in Bass Strait that are part of the Gippsland Basin Joint Venture between Esso and Woodside Energy (Bass Strait) Pty Ltd (Woodside Energy)) and the Kipper Unit Joint Venture (Esso, Woodside Energy, and MEPAU A Pty Ltd). The assets consist of 421 wells, 19 platforms, five subsea facilities and more than 800 kilometres of subsea pipeline. Esso receives services, including personnel, from Esso Australia Pty Ltd, which is also a wholly owned subsidiary of ExxonMobil Australia Pty Ltd.

The offshore facilities extract, process and store oil and gas, which is transported onshore for further processing and distribution to customers. The Bass Strait operations produce a variety of products ranging from gas and condensate to oil. Different reservoirs produce hydrocarbon products with different properties.

Esso also continues to explore opportunities for carbon capture and storage to reduce greenhouse gas emissions from multiple industries in the Gippsland Basin.

Carbon capture and storage is the process of capturing CO_2 emissions from industrial activity or power plants at the source and injecting it into deep underground geologic formations for safe, secure and permanent storage. It is among the few proven technologies that could enable reduced CO_2 emissions from high-emitting and hard-to-decarbonise sectors, such as heavy industries including manufacturing, refining and petrochemicals.

Esso is currently undertaking early front-end engineering design (pre-FEED) studies for the South East Australia Carbon Capture and Storage Project, which will initially take CO_2 from the Longford Gas Plants to the Bream A platform, where it will be permanently injected into the Bream reservoir. This Project has the potential to capture up to two million metric tonnes of CO_2 – the equivalent of taking almost half a million cars off the road for every year of operation.

1.2 Operations history

In 1965, the Gippsland Basin Joint Venture drilled Australia's first offshore well in Bass Strait, resulting in the discovery of the Barracouta gas field. Two years later Kingfish, the first offshore oil field, was discovered. To this day, it remains the largest oil field ever discovered in Australia. Production from the first platform commenced in 1969.

Infrastructure costing billions of dollars was built to develop, produce and process crude oil and gas, which has powered industry, fuelled vehicles, heated homes and supported the manufacture of products in Australia and overseas for the past 50 years. In this time, Esso has provided highly skilled jobs and business opportunities to the region and created significant, long-lasting economic benefits.

Esso's activities in Bass Strait are conducted by up to 300 workers who work and live offshore at any one time. They are supported by many more onshore workers, who process the oil and gas at Esso's Longford and Long Island Point plants before supplying gas to Australian customers, and liquids products to Australian and overseas customers.

Platform operations are supported by supply vessels and helicopters. Personnel are transferred to and from platforms via regular flights from a heliport based in Longford. The supply vessels operate out of Barry Beach Marine Terminal, moving between platforms to load and unload cargo.

The Gippsland Basin Joint Venture has been responsible for more than 50% of Australia's crude oil and liquids production and currently supplies over 40% of eastern Australia's natural gas requirements. This equates to more than four billion barrels of crude oil and well over eight trillion cubic feet of gas produced since production began, making the Bass Strait production network the largest single source of gas supply to the Australian east coast domestic market.

1.3 Decommissioning

After delivering energy to Australia for over 50 years, some of Esso's Bass Strait facilities, consisting of 10 platforms, three subsea facilities, 16 pipelines and approximately half of all wells drilled, are no longer producing oil and gas. A further six platforms and seven pipelines are expected to no longer support oil and gas production by 2027. Meanwhile, Esso's decommissioning team is planning for the eventual decommissioning of all producing assets in Bass Strait while they continue to operate.

The decommissioning team is applying lessons learned from ExxonMobil's experiences in other locations, and liaising with the ExxonMobil decommissioning centre of expertise, to ensure local decommissioning activities meet regulatory, community, government and ExxonMobil requirements.

As planning for decommissioning progresses, Esso is focused on safely shutting-down non-producing facilities and ensuring they stay safe throughout the entire decommissioning process. At the same time, Esso is continuing to safely operate the still producing offshore platforms and subsea facilities in the Bass Strait.

1.4 Location

Esso's operations are located off Victoria's Gippsland coast in Bass Strait, Australia. The Operational Area lies entirely within the South-west Marine Region. The facilities are located in water depths ranging from 38 metres (Dolphin platform) to 402 metres (Blackback subsea facility). Their distance from the coast ranges from 12 kilometres (Seahorse subsea facility) to 87 kilometres (Blackback subsea facility). The location of facilities is shown in Figure 1.

1.5 Facilities description

The Bass Strait infrastructure consists of staffed and unstaffed platforms and subsea facilities with interconnecting pipelines and umbilicals.

1.5.1 Platforms

Esso operates 19 platforms, as summarised in Table 1. These platforms consist of three types: steel piled jackets, concrete gravity structures and monotowers.

Table 1: Platform summary

Name	Type	Distance to coast (km)	Water depth (m)	Status
Barracouta	SPJ	23	46	P
Bream A	SPJ	46	59	NP
Bream B	CGS	51	61	NP
Cobia	SPJ	69	79	P
Dolphin	MT	21	38	NP
Flounder	SPJ	58	93	NP
Fortescue	SPJ	64	69	NP
Halibut	SPJ	64	73	P
Kingfish A	SPJ	77	77	NP
Kingfish B	SPJ	77	78	NP
Mackerel	SPJ	73	93	NP
Marlin A	SPJ	42	59	P
Marlin B	SPJ	42	59	P
Perch	MT	24	42	NP
Snapper	SPJ	32	55	P
Tuna	SPJ	43	59	P
West Kingfish	SPJ	72	76	P
West Tuna	CGS/SPJ	45	61	P
Whiting	SPJ	34	54	NP

SPJ: Steel piled jacket

CGS: Concrete gravity structure

MT: Monotower

NP: Non-producing

P: Producing

Steel piled jackets

There are fifteen steel piled jacket platforms and one steel piled jacket riser access tower. Steel piled jacket platforms have a tubular steel base structure (or jacket) that is fastened to the sea floor by piles. These jackets support the 'topsides', as shown in Figure 2, which include the production facilities, living quarters for personnel working on the platform, and a helicopter landing pad.

A supporting 'strut' is also in place on some steel piled jacket platforms (Kingfish A, Kingfish B and Halibut) to provide additional support. A 70-metre jacket structure is analogous to the height of a more than 20-story building on land.

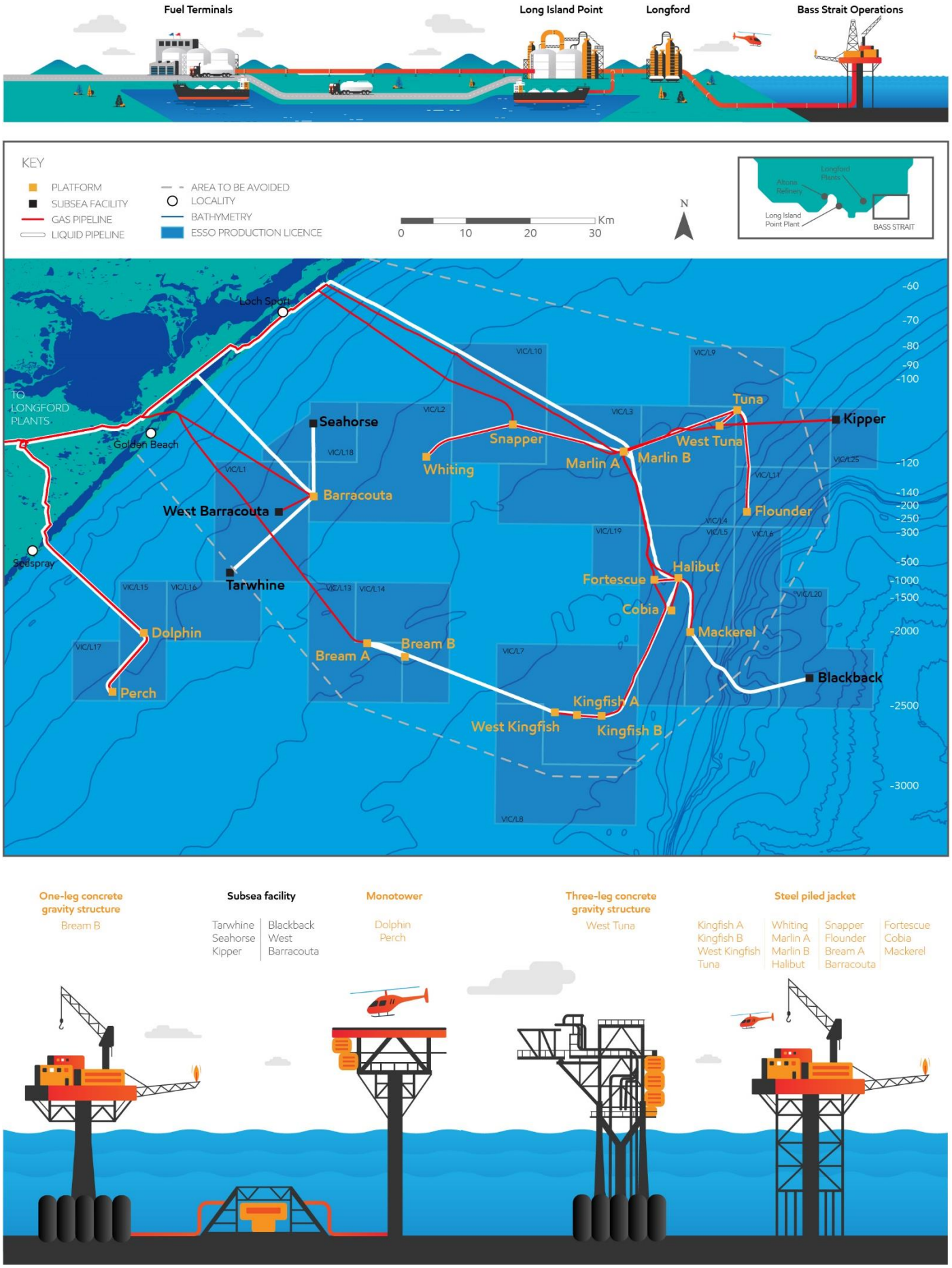


Figure 1: Location of facilities

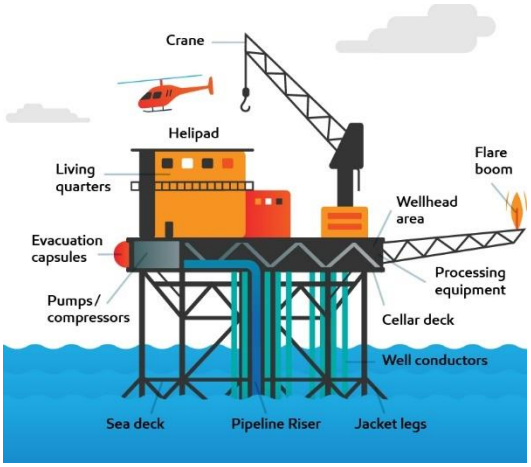


Figure 2: Diagram of a typical steel piled jacket platform topsides

Concrete gravity structures

A concrete gravity structure platform (as shown in Figure 1) is one that is placed on the seabed and, by its own weight, is capable of withstanding the environmental forces it may be exposed to during its lifetime. Esso has designed, built and operates only two concrete gravity structures, which are the West Tuna and Bream B platforms. These were also the first concrete-based platforms constructed in Australia.

Monotowers

The Bass Strait operations includes two monotowers (as shown in Figure 1) – the Perch and Dolphin platforms. These platforms are fixed installations consisting of a steel gravity-based monotower with iron ore ballast supporting minimal topside production facilities, including two wells.

1.5.2 Pipelines

Crude oil and gas produced offshore is transported via a network of pipelines to the onshore Longford Plants for processing. Specifically, crude oil is collected at three offshore points (Halibut, Barracouta and Perch-Dolphin) and then sent to Longford Plants via dedicated pipelines.

Separately, gas is transported from the four major gas-producing offshore platforms (Marlin, Barracouta, Bream A and Snapper) to Longford Plants through dedicated gas pipelines. In total, there are 31 primary licensed pipelines (with three covering more than one pipeline), eight long umbilicals (spanning approximately 106 kilometers) and five short umbilicals covering approximately 1 kilometre.

1.5.3 Subsea facilities

The five subsea facilities operated by Esso in Bass Strait are listed in Table 2. A diagram of a typical subsea facility is shown in Figure 1.

Table 2: Subsea facilities summary

Name	Distance to coast (km)	Water depth (m)	Status
Blackback	87	402	NP
Kipper	41	95	P
Seahorse	21	42	NP
Tarwhine	21	42	NP
West Barracouta	22	46	P

1.6 Stages of activity

Esso operates the Bass Strait facilities in accordance with defined stages of petroleum activity as shown in Figure 3.

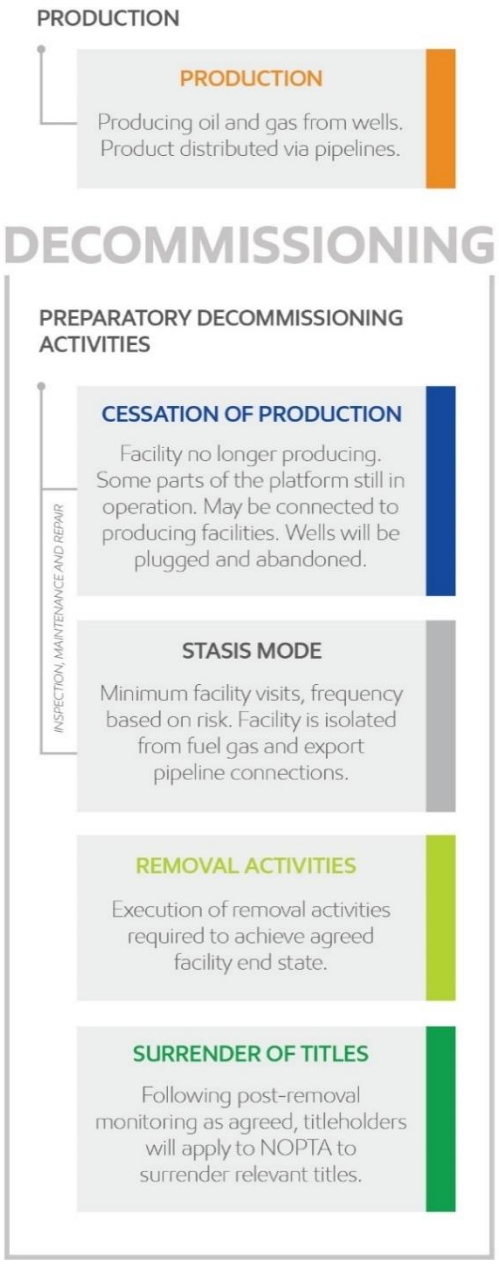


Figure 3: Stages of activity in the lifecycle of a facility

1.6.1 Preparatory Decommissioning Activities

For the purpose of this Report, 'Preparatory Decommissioning Activities' are decommissioning-related activities that fall within the Cessation of Production and Stasis Mode stages. Preparatory Decommissioning Activities are primarily undertaken in accordance with the approved *Bass Strait Environment Plan*. Offshore pipelines in State waters operate under the *Bass Strait State Waters Environment Plan*.

Once a facility ceases production of oil and/or gas it may be a number of years before all Preparatory Decommissioning Activities are able to be completed. Due to the high level of interconnectedness of the Bass Strait facilities, some non-producing facilities may continue to be required to:

- support key activities, such as pipeline inspections
- facilitate operations on other connected producing platforms and subsea facilities
- support inspection, maintenance and repair activities, and/or
- prepare facilities for decommissioning, such as enabling the flushing of pipelines or umbilicals and subsequent liquids disposal.

To allow for this, platforms may be maintained, wells may be temporarily brought online, and platform systems may remain in operation, for example power, air, safety systems, fuel systems, pig launcher/receivers, and cathodic protection.

Cessation of Production

The Cessation of Production stage of activity commences when a facility is no longer producing oil and/or gas, or pipelines are no longer used to transport oil and/or gas to shore or to supply other facilities with resources. There are a number of activities within Cessation of Production, such as:

- well plug and secure, which uses a wireline rig to preserve wellbore integrity for the period prior to plug and abandonment
- care and preservation, which involves the shut–in of wells prior to plug and abandonment, except in certain circumstances such as for the supply of fuel gas for power generation
- well plug and abandonment, which involves the permanent closure of the well
- well conductor pull, where well conductors are removed either post-plug and abandonment or as part of decommissioning
- facility preparation activities to prepare the topsides and jackets for lifting activities; remove hydrocarbons; clean import and export pipelines; and any other activities required to prepare the platform for decommissioning. Undertaken in parallel with inspection, maintenance and repair to preserve the facility for a period of Stasis Mode. Facilities are progressively isolated from fuel gas and pipeline connections. Property that does not require the use of a Heavy Lift Vessel or specialist equipment is assessed for removal on an ongoing basis.

Pipelines will be filled with treated water. Sections of risers and pipelines may be removed in preparation for platform or pipeline decommissioning.

Stasis Mode

Facilities and pipelines are considered to be 'not in use, nor to be used' in connection with the operations (as per Section 572 of the *Offshore Petroleum and Greenhouse Gas Storage Act 2006*) when the Stasis Mode stage of activity is reached. This indicates the facility or pipeline is ready for decommissioning.

Platform visits will be undertaken to complete inspection, maintenance and repair activities to maintain the platform prior to future decommissioning.

Inspection, maintenance and repair

Since a facility may continue to be 'in use' for some years during the Cessation of Production stage; inspection, maintenance and repair is likely to occur throughout both the Cessation of Production and Stasis Mode stages. This is required to:

- ensure safety and environmental risks are reduced to As Low as Reasonably Practicable and acceptable levels
- maintain the platform to a level that does not preclude full removal as required under the *Offshore Petroleum and Greenhouse Gas Storage Act 2006*.

These activities include well integrity testing, structural and corrosion control maintenance/repair as required, and checks on operating systems such as fuel gas, air compressors, crane and lifting equipment, open and closed piles, and safety systems.

Once platforms are de-staffed, periodic platform visits are conducted for operations and maintenance to facilitate upstream platform operations and/or maintain equipment for future decommissioning preparation activities. Platform visits may be conducted as day trips, or by temporarily re-staffing the facility for days to weeks.

1.6.2 Removal Activities

Removal activities required to achieve the agreed end state of facilities will be undertaken by specialist third party contractors with the appropriate vessels, equipment and expertise to undertake this work during decommissioning campaigns.

Given the interconnectedness of Esso's Bass Strait facilities, decommissioning campaigns are designed to balance the decommissioning of non-producing facilities with the ongoing operational requirements of the producing facilities.

1.6.3 Surrender of Titles

Following the completion of removal activities and agreement with National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA), the Titleholders will apply to the National Offshore Petroleum Titles Administrator to surrender the relevant petroleum titles.

1.7 Status

The status of all facilities and pipelines as at the end of 2022 is shown in Figure 4. The stage of activity for each of the non-producing platforms and subsea facilities (excluding pipelines), as well as the decommissioning activities conducted during 2022 and the proposed forward timeline of ongoing Preparatory Decommissioning Activities, is shown in Figure 5, but is subject to change.

The timeline for decommissioning (refer to Appendix A) has been planned and is being managed to complete all Preparatory Decommissioning Activities and commence Removal Activities as soon as reasonably practicable, and no later than 30 September 2027.

During the year, Esso progressed all open and ongoing Directions, with progress updates provided throughout this Report and summarised in Appendix B.

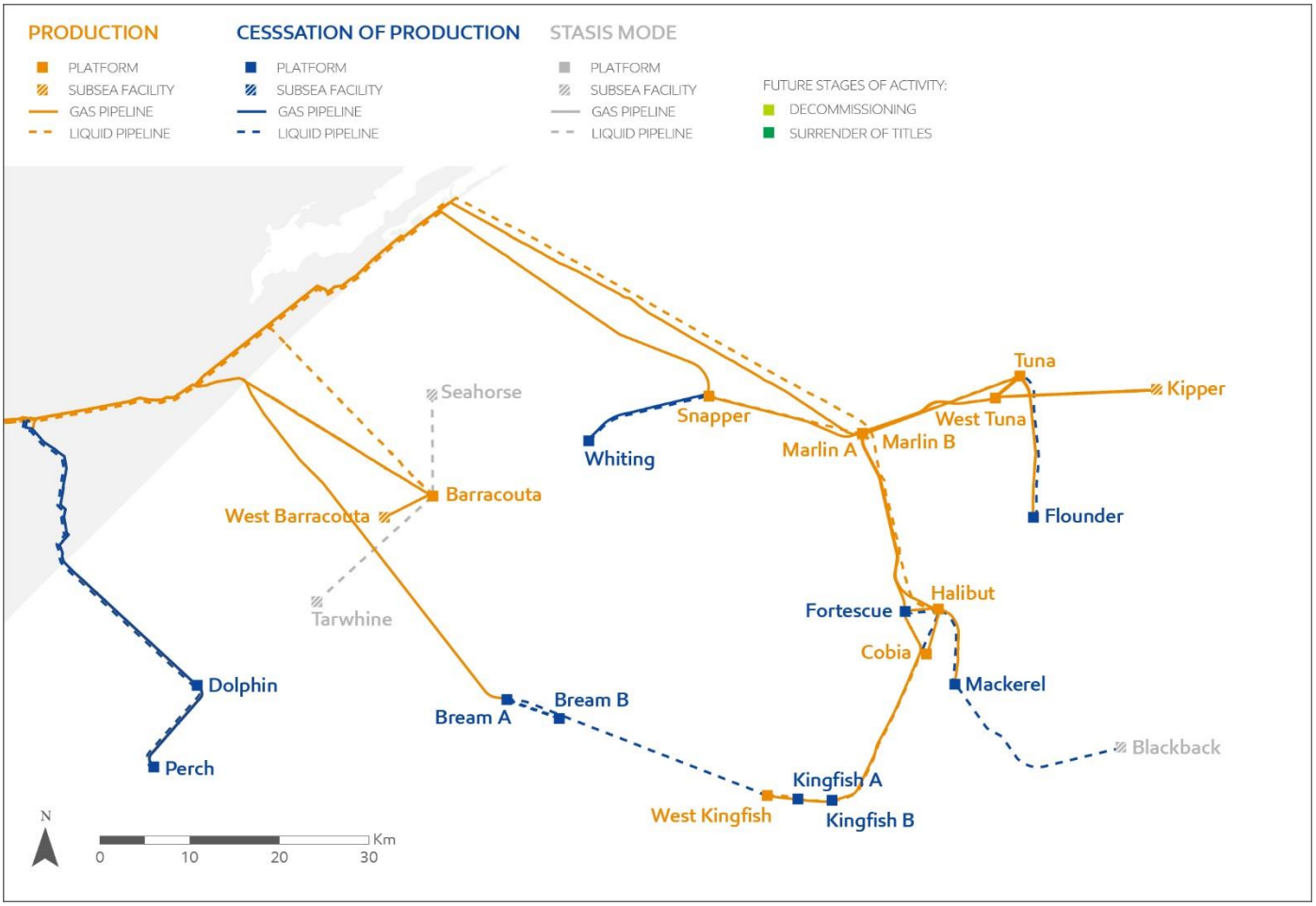
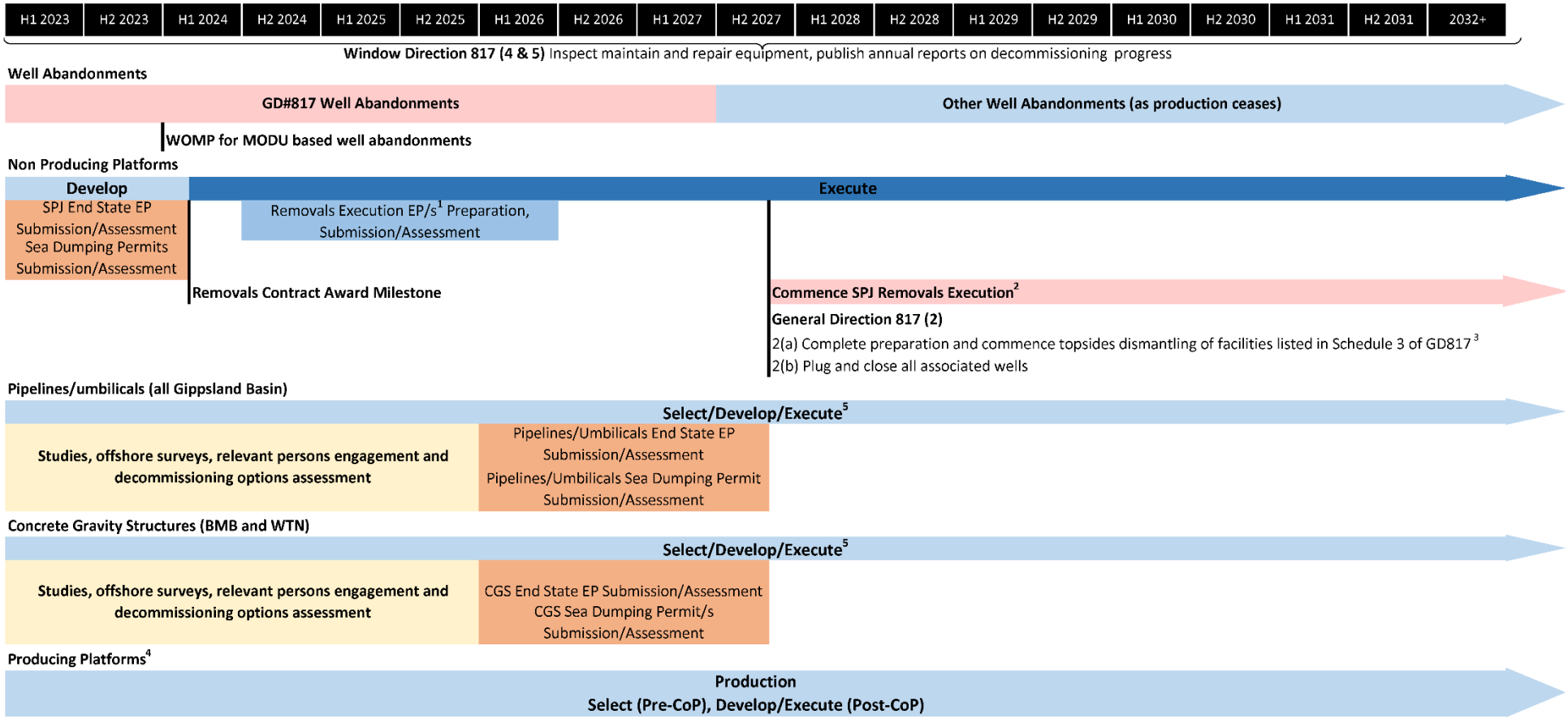


Figure 4: Status of facilities and pipelines as at December 2022

Figure 5: Estimated timing of activities for currently non-producing platforms and subsea facilities

Appendix A

Indicative timeline: Decommissioning milestones and direction



Note 1: The scope of the Removals Execution EP/s may be partial or full removal - depending on the outcome of the SPJ End State EP and Sea Dumping Permit applications. The submission/assessment timing outlined for the Removals Execution EP/s will be as depicted regardless of the scope.
Note 2: Removals start date provided is the latest commencement date, actual date may be earlier and will be confirmed through the Removals Contracting process.
Note 3: Facilities listed in Schedule 3 of GD 817 are WTA, MKA, FTA, KFA, KFB, FLA, BMA, BMB, DPA and PCA (as depicted in Figure 1-5).
Note 4: As depicted in Figure 1-5, producing facilities are TNA, MLA, MLB, BTA, SNA and WTN.
Note 5: Final decommissioning timing will be informed by completion of studies and is subject to Regulator assessment/acceptance. Current planning basis is removal of assets not suitable for in-situ decommissioning to occur at the end of field life.

Appendix B
General Direction 817 progress summary

General Direction 817 Direction		Key Work Plan Items	Progress to date	Look ahead next 12 months
1a	Commission an independent and suitably qualified body to complete a review of the engineering and project management approach to decommissioning activities to identify opportunities and propose measures to reduce the timeframe for commencing and subsequently completing all necessary decommissioning activities.	Commission independent report and implement reasonable and practicable measures	Review completed in 2021	Direction closed on 8 December 2021
1b	Submit a report to NOPSEMA within 180 days from the date this direction is signed, detailing the outcomes of this review and recommended measures.	Submit report to NOPSEMA	Two reports submitted to NOPSEMA on 16 November 2021	Direction closed on 8 December 2021
1c	Implement reasonable and practicable measures based on the review and recommendations that would likely reduce the timeframe for commencing and completing all necessary decommissioning activities.	Implement reasonable and practicable measures that would likely reduce the timeframe for commencing and completing all necessary decommissioning activities	Removals Contract tender evaluation process includes assessment of schedule opportunities and impacts associated with onshore reception centre location options Commenced facilities preparation detailed design in parallel with Removals detailed design	Explore and promote schedule optimisation proposals as part of Removals Contract tendering process Commence development of Execution Environment Plans and Safety Cases
2a	Complete all preparatory decommissioning activities and commence the topside dismantling campaign as soon as reasonably practicable, and no later than 30 September 2027, for removal of all structures, property, and equipment no longer in use that are associated with facilities listed in Schedule 3.	Regulatory compliance for all activities Contract specialist Removals Contractor to complete removal and disposal of offshore assets	Completed regulatory compliance submissions Ongoing planning and preparation	Continue to complete regulatory compliance submissions Issue tender for Removals Contract
2b	To plug or close, to the satisfaction of NOPSEMA, all wells associated with the titles listed in Schedule 3, as soon as reasonably practicable and no later than 30 September 2027.	Plug and abandon all wells associated with Campaign 1 assets Well Operations Management Plan for Well Abandonment	Mackerel, Flounder plug and abandon campaign completed Revision finalised in December 2022	Complete plug and abandonment for Fortescue. Commence Bream A, Bream B, and Kingfish A plug and abandonment campaigns

General Direction 817 Direction		Key work plan items	Progress to date	Look ahead next 12 months
3a	Conduct an integrity assessment of all equipment, structures and property associated with the Perch and Dolphin facilities located within titles VIC/L15 and VIC/L17, to demonstrate that full removal of structures, property and equipment will not be precluded.	Complete Perch and Dolphin integrity assessments	Perch and Dolphin integrity assessments completed	Direction closed on 28 September 2021
3b	Provide a preliminary report on the outcomes of the integrity assessment of Perch and Dolphin facilities to NOPSEMA within 90 days from the date of this direction is signed, and a detailed report no later than 31 January 2022.	Submit reports to NOPSEMA	Three reports submitted to NOPSEMA on 16 August 2021	Direction closed on 28 September 2021
3c	Conduct a separate integrity assessment of all equipment, structures and property, other than those identified at Direction 3(a) that are in a non-producing state, within the titles listed in Schedule 3, to demonstrate that full removal of structures, property and equipment will not be precluded.	Complete remaining facility integrity assessments	Facility integrity assessments completed	Direction closed on 10 March 2022
3d	Provide a report on outcomes of the integrity assessment conducted as required under Direction 3(c) to NOPSEMA as soon as practicable and no later than 31 January 2022.	Submit reports to NOPSEMA	Nine reports submitted to NOPSEMA on 31 January 2022	Direction closed on 10 March 2022
4a	The registered holder must undertake inspection, maintenance and repair activities on all property and wells associated with facilities listed in Schedule 3 to ensure: i. property continues to perform its intended function, which in the case of non-producing facilities includes preparation for (or support of) decommissioning activities as well as supporting other facilities which	Continue to implement the following established systems across all assets: • Facility Integrity Management System • Well Operations Management Plan • Offshore asset Safety Cases	Facility integrity management: • Issued integrity assessment reports in January presenting the outcomes of integrity assessments conducted in 2021 for nine platforms and a number of offshore pipelines in the Cessation of Production lifecycle stage. Actions identified in the integrity assessment reports are being implemented and tracked to closure • Completed platform above water inspections for Dolphin, Perch, Bream A, Bream B, Kingfish A, Kingfish B and Whiting with targeted inspections undertaken for Flounder and Fortescue. The inspections did not identify any issues that would preclude full removal of the facilities	Continue to implement the following established systems across all assets: • Facility Integrity Management System • Well Operations Management Plan • Offshore asset Safety Cases Conduct platform maintenance review workshops throughout 2023

	may still be producing hydrocarbons; ii. approved decommissioning end states are not precluded; and iii. occupational health and safety, structural integrity, well integrity and environmental risks continue to be reduced to ALARP.	Conduct platform maintenance review workshops throughout 2022	• Care and Preservation teams continued periodic maintenance reviews for non-producing platforms and pipelines Wellwork: • Completed conductor removal at Mackerel and Kingfish B platforms • Completed reservoir abandonment at Fortescue followed by completion of eight surface plugs in October • Completed plug and abandonment activities on Flounder Well Operations Management Plan: • Gippsland Basin Wells Operations Management Plan revision approved for issue in December 2022 Safety Case submissions: • Submitted five-yearly Safety Case reviews and revisions for Barracouta, Bream A, Bream B, Cobia, Dolphin, Halibut, Kingfish A, Kingfish B, Marlin Complex (Marlin A and B), Perch, Snapper, Tuna, West Kingfish, West Tuna and Whiting facilities • Issued a revision to the Safety Case for the MPSV *Skandi Darwin* in June, which was approved for work to commence in August Platform maintenance workshops: • Completed planned inspections for all non-producing facilities. No issues were identified that would preclude full removal obligations under Section 572 (2) of the *Offshore Petroleum and Greenhouse Gas Storage Act 2006* • Conducted maintenance campaigns on Bream A and Bream B in June and included structural repair activities on Bream A • Completed structural repair activities for Flounder, Fortescue and Mackerel during their planned maintenance campaigns • Commenced Kingfish A and Kingfish B structural integrity maintenance campaigns	
General Direction 817 Direction		**Key Work Plan Items**	**Progress to date**	**Look ahead next 12 months**
5a	Submit to NOPSEMA on an annual basis, a decommissioning progress report detailing progress with implementing the directions and associated	Annual Progress Report	*Bass Strait Operations Decommissioning Report 2021* submitted prior to 31 December 2021 and *Bass Strait Operations Decommissioning Report 2022* submitted prior to 31 December 2022	Prepare *Bass Strait Operations Decommissioning Report 2023*

	decommissioning activities until all decommissioning works have been completed.			
5b	The report submitted under Direction 5(a) must be to the satisfaction of NOPSEMA and submitted to NOPSEMA no later than 31 December each year.			
5c	Publish the report on the registered holders' website within 14 days of obtaining NOPSEMA satisfaction under Direction 5(b).			

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