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**Esso Australia Resources Pty Ltd (“Esso”)
CENTRAL FIELDS ENVIRONMENT PLAN SUMMARY**

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1. Introduction

This Environment Plan (EP) summary has been prepared in accordance with the requirements of Regulation 11 (3) and (4) of the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009*. This document summarises the Central Fields Environment Plan (AUGO-PO-EMP-034), which was accepted by the National Offshore Petroleum Safety Environment Management Authority (NOPSEMA) on 24 December 2014.

The Central Fields EP covers all activities relating to hydrocarbon production from the following facilities and transport of hydrocarbons in the following pipelines:

- Halibut, Fortescue, Cobia and Mackerel platforms (Production Licence VIC/L05) and HLA-FTA100, HLA-CBA100, MKA-BKA65 and Cobia-2 (Secondary Lines);
- Blackback subsea facility (Production Licence VIC/L20);
- HLA-VS1-600 Oil (Licensed Pipeline VIC/PL5);
- FTA-HLA300 Oil (Licensed Pipeline VIC/PL16);
- CBA-HLA300 Oil (Licensed Pipeline VIC/PL15);
- MKA-HLA300 Oil (Licensed Pipeline VIC/PL8); and
- BKA-MKA200 Oil (Licensed Pipeline VIC/PL29).

Ongoing operational, maintenance, and minor construction (brownfields) activities will be conducted on these facilities and pipelines over the next five years, as well as wellwork operations on the Halibut, Fortescue, Cobia and Mackerel platforms.

Esso Australia Resources Pty Ltd (“Esso”) is the operator and a titleholder of the abovementioned production licences and licenced petroleum pipelines. ExxonMobil Australia is the holding company for the Esso and Mobil companies in Australia.

1.1. Location of the Activity

The Halibut (HLA), Fortescue (FTA), Cobia (CBA) and Mackerel (MKA) platforms (hereafter referred to as the Central Fields platforms) are located within Production Area VIC/L05 approximately 62 to 68 km off the Gippsland coast in approximately 69 to 93 m of water depth.

The Blackback (BKA) subsea facility is located within Production Area VIC/L20, approximately 87 km off the Gippsland coast in approximately 402 m of water depth (Figure 1).

The coordinates for the HLA, FTA, CBA and MKA platforms and the BKA subsea facility are provided in Table 1.

Table 1 Facility locations

Production Licence No.	Facility Name	Code	Latitude	Longitude
VIC/L05	Halibut platform	HLA	38° 24' 20" south	148° 19' 07" east
VIC/L05	Fortescue platform	FTA	38° 28' 50" south	148° 20' 28" east
VIC/L05	Cobia platform	CBA	38° 24' 32" south	148° 16' 36" east
VIC/L05	Mackerel platform	MKA	38° 27' 04" south	148° 18' 28" east
VIC/L20	Blackback subsea facility	BKA	38° 32' 26" south	148° 33' 16" east

The HLA platform is connected to the shore by the HLA-VS1-600 pipeline. There are four other licenced pipelines connecting the Central Fields platforms (the FTA-HLA300, CBA-HLA300, MKA-HLA300 pipelines). The BKA subsea facility is connected to the MKA facility by the BKA-MKA200 pipeline. There are also two secondary lines originating at the HLA platform (HLA-FTA100, HLA-CBA100 lines) and one originating at the MKA platform (the MKA-BKA65 line). The secondary line originating at CBA, the Cobia-2 line, was cut and capped (local to sub cellar deck) and does not contain hydrocarbons.

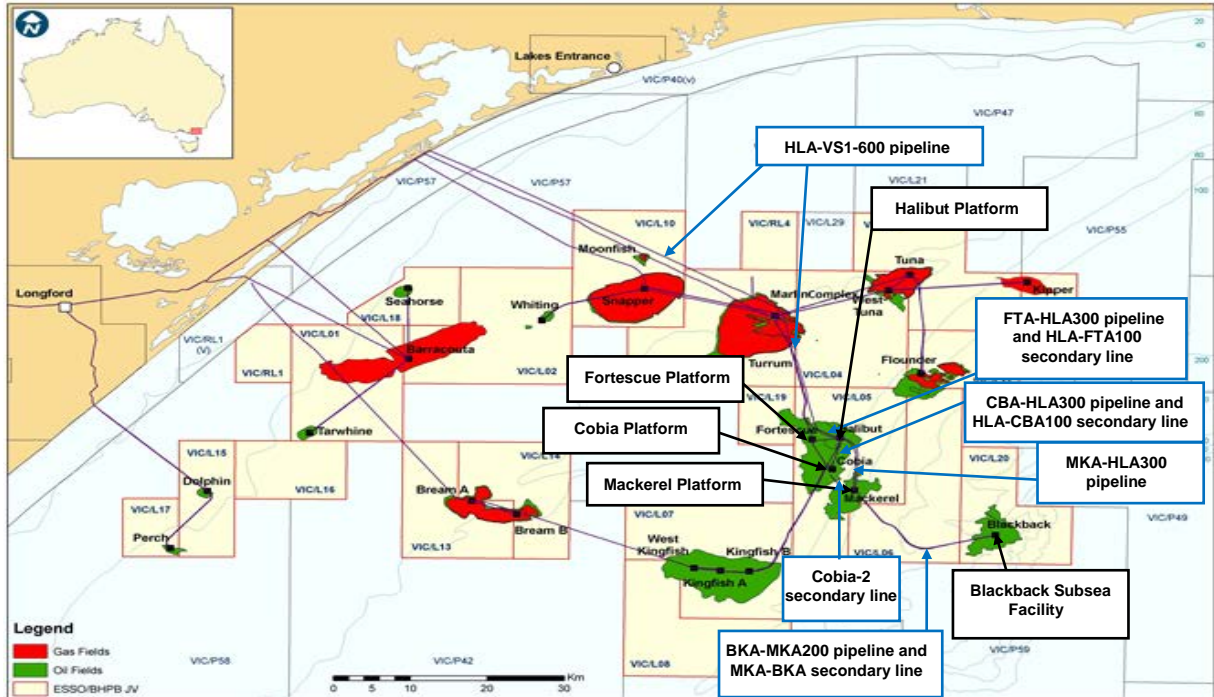


Figure 1 Esso production facilities in Bass Strait

2. Description of the Activity

The FTA, HLA, CBA and MKA platforms (hereafter referred to as the Central Fields platforms) are fixed installations consisting of one (FTA, CBA, MKA) or two adjoined (HLA) steel piled jacket/s (Figures 2, 3, 4 and 5).

The MKA platform is the host platform for the BKA subsea facility. BKA consists of three adjacent subsea wellheads, located 18 km to the southeast in 402 m of water depth, connected in a daisy chain to a 200 mm production line to MKA (BKA-MKA200).



Figure 2 Fortescue platform (FTA)
(pictured with a drilling rig on board)



Figure 3 Halibut platform (HLA)



Figure 4 Cobia platform (CBA)



Figure 5 Mackerel platform (MKA)

HLA is an oil producing platform but also acts as a gathering platform for oil production from other fields. Produced oil from the Bream A and B, West Kingfish, Kingfish A and B, MKA, CBA and FTA platforms is received, combined with HLA produced oil and then transferred to shore via the Halibut to Valve Site 1 pipeline (HLA-VS1-600).

HLA oil production consists of a north and a south production train. Oil wells on HLA flow from production headers to production separators where oil, water and gas is separated. The gas phase from the separators is compressed then exported to fuel gas pipelines to CBA (via HLA-CBA100 pipeline) and FTA (via HLA-FTA100 pipeline), or used for gas lift. Oil is pumped to shore via the HLA-VS1-600 pipeline, while the water outlet is directed to the water handling system which treats the



produced water stream. Oily water from the water handling system is reinjected into the oil pipeline, and clean water is discharged to sea. HLA receives its fuel gas requirements from Marlin A platform.

FTA oil production consists of an east and a west production train. Oil wells on FTA flow from production headers to production separators where oil, water and gas is separated. The gas phase from the separators is compressed then used for gas lift. Oil is pumped to shore via the FTA-HLA300 pipeline, while the water outlet is directed to the water handling system which treats the produced water stream. Oily water from the water handling system is recovered into the closed skimmer pile, and clean water is discharged to sea. FTA receives its fuel gas requirements from HLA via the Halibut-Fortescue pipeline (HLA-FTA100).

CBA oil production consists of an east and a west production train. Oil wells on CBA flow from production headers to production separators where oil, water and gas is separated. The gas phase from the separators is compressed then used for gas lift. Oil is pumped to shore via the CBA-HLA300 pipeline, while the water outlet is directed to the water handling system which treats the produced water stream. Oily water from the water handling system is recovered into the production headers, closed skimmer pile or export pipeline, and clean water is discharged to sea. CBA receives its fuel gas requirements from HLA via the Halibut-Cobia pipeline (HLA-CBA100).

Oil wells on MKA flows from the wellheads into the production headers that feed two production separators where oil, water and gas is separated. The gas phase from the separators is compressed then used for gas lift. Oil is pumped to shore via the MKA-HLA300 pipeline, while the water outlet is directed to the water handling system which treats the produced water stream. Oily water from the water handling system is recovered into the production headers or export pipeline, and clean water is discharged to sea. MKA receives its fuel gas requirements from MLA via the MLA-MKA100 pipeline or from gas produced by wells on MKA itself.

On the Central Fields platforms, a safety device called a flare is mounted at the end of the flare boom to safely remove hydrocarbon gas and liquids from pressure relief equipment. Open and closed drain and skimmer pile systems on the platforms handle process equipment discharges, fire-fighting deluge, rainwater and saltwater spray and unplanned deck releases.

The three BKA subsea oil wells are connected in a daisy-chain with bundled flexible jumpers and are connected to MKA via the 18 km BKA-MKA200 production pipeline and gas lift secondary line (MKA-BKA65).

The platforms are equipped with cranes which undertake lifts for operation and maintenance activities. Support operations consist of vessel, helicopter and remotely operated vehicle (ROV) activities. Supply vessels operate alongside the platforms, loading and unloading using the platform cranes. Other vessels are utilised for underwater pipeline inspection, drilling, and specialised services. A fleet of helicopters transport personnel and freight to and from the platform.

Platform operations will generate both general wastes (solid inert materials including plastics, paper, glass and metal) and hazardous wastes (including waste oil and chemicals, laboratory wastes, separator sludge and sand, oily filters, oily rags and empty drums containing oil or chemical residues). Solid and hazardous wastes are temporarily stored on the platform, transported onshore and appropriately disposed. Waste discharges include sewage and grey water, reject and backflush reverse osmosis (RO) water, cooling water, and putrescible food wastes.

Oils and chemicals are used as part of the daily operation of the platforms and in the platform process, and are transferred via crane and stored as either packaged goods, in drums or in intermediate bulk containers or transferred via hose into a tank (bulk transfer).

Inspection, maintenance and repair activities are undertaken on both surface and subsea structures. Processing activities are also undertaken and include pipeline processing activities, subsea umbilical and subsea facilities operations, production drainage from the open and closed pile systems, flaring, venting and fuel combustion activities.

Wellwork operations include workover and wireline activities. Workover activities on the Central Fields platforms are expected to be in progress for approximately 6 months at a time every 4 years or similar over the remaining field life. Wireline activities are typically in progress on the Central Fields platforms for 5 weeks per year.



2.1. Activities that have the Potential to Impact the Environment

Activities that have the potential to impact the environment are divided into two main groups and include:

Gippsland Wide Co-ordinated Activities

Support Operations

- Waste management.
- Vessel operations and movement.

Inspection, Maintenance and Repair

- Surface and subsea structure maintenance, inspection and intervention.
- Remotely operated vehicle (ROV) operations.

Wellwork Operations

- Workover and wireline activities.
- Non-destructive testing using a radioactive source and wireline logging with a radioactive source.

Facility Specific Activities

Platform Presence and Operations

- Physical presence of platforms, vessels and helicopters.
- Operation and maintenance of platform.
- Waste management.
- Foam deluge system.
- Chemicals and oils storage and handling.
- Bulk transfer activities.

Processing

- Pipeline hydrotest, flooding, dewatering and watering out activities.
- Subsea operations.
- Produced water discharge.
- Production drainage from open and closed pile systems.
- Venting, flaring and fuel combustion.

The hazards associated with these activities were all assessed for their potential impact on the environment and are outlined in Section 4.



3. Description of the Receiving Environment

This section describes the environment in the platform operating area (i.e., the immediate zone around the platforms) and the surrounding area (i.e., the area identified, through Oil Spill Trajectory Modelling, as potentially being impacted by a loss of well control/well blowout event).

3.1. Physical Environment

The Central Fields platforms are located in Commonwealth waters within the Gippsland Basin, approximately 62 to 68 km off the Victorian coast in Bass Strait, in a water depth of 69 to 93 m mean sea level (MSL). The BKA subsea facility is located approximately 87 km off the coast in approximately 402 m of water depth. Bass Strait is the region of the continental shelf that separates mainland Australia from Tasmania. Bass Strait, including the platform operating areas and surrounds, is located in a relatively shallow area of the continental shelf and has high winds and strong tidal currents. The area includes marine parks and reserves, as well as listed endangered or vulnerable species.

Wind speeds are in the range of 10 to 30 km per hour, with maximum gusts reaching 100 km per hour. The wind direction is predominately westerly during winter, westerly and easterly during spring and autumn (when wind speeds are highest) and easterly during summer. Average summer air temperatures range from 13 to 21°C and average winter temperatures range from 9 to 14°C.

Temperatures in the subsurface waters of the operating areas range from about 13°C in August/September to 16°C in February/March. Surface temperatures can exceed 20°C at times in late summer due to the warmer waters of the East Australia Current entering Bass Strait.

Currents around the platform location are tide and wind driven. Tidal movements predominantly have a northeast–southwest orientation. Tidal flows come from the east and west during a rising (flood) tide, and flow out to the east and west during a falling (ebb) tide.

The area around the platforms is a high energy environment exposed to frequent storms and significant wave heights. The bathymetry in the Gippsland Basin (Bass Strait, off mainland south-eastern Victoria) is concave shaped, with a shallower rim on the eastern and western entrances to the Strait and a deeper centre.

3.2. Biological Environment

The platform operating areas and surrounds support a range of benthic (seabed) invertebrate fauna as well as a variety of vertebrate species such as fish, birds, seals and whales, including listed, endangered, and vulnerable species under the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act). The platform operating areas and surrounds also contain a number of marine fauna that have high commercial value.

3.2.1. Species Listed Under the EPBC Act

3.2.1.1. Fish and Shellfish

It is estimated that there are over 500 species of fish found in the platform operating areas and surrounds, including a number of species of importance to commercial and recreational fisheries. Four fish species potentially occurring within the surrounding area were listed as 'threatened' under the EPBC Act; the Black Rockcod (*Epinephelus daemeli*), the Eastern Dwarf Galaxias (*Galaxiella pusilla*), the Macquarie Perch (*Macquaria australasica*) and the Australian Grayling (*Prototroctes maraena*). No EPBC Act listed threatened species were found to occur within the operating areas.

Pipefishes, seahorses and seadragons are generally associated with vegetation in sheltered to moderately exposed reef areas at a range of depths from 0 to 50 m, depending on the species (Edgar 1997), but usually at depths of between 5 and 25 m. Given that these species normally inhabit shallow reefs and kelp beds they are not likely to occur within the platform area itself but around adjacent shorelines in the Gippsland Basin.



3.2.1.2. Sharks and Rays

Three shark and one ray species potentially occurring within surrounding area were listed as 'threatened' under the EPBC Act; the Grey Nurse Shark (east coast population) (*Chacharias taurus*), the Great White Shark (*Carcharodon carchari*), the Whale Shark (*Rhincodon typus*) and the Narrowsnout Sawfish (*Pristis zijsron*). Two of these species, the Grey White Shark and the Whale Shark, were also identified as potentially occurring within the platform operating areas.

Two other species of shark, Shortfin Mako (*Isurus oxyrinchus*) and Porbeagle (*Lamna nasus*), are listed as migratory under the EPBC Act with habitat likely to occur in the platform operating areas. The Longfin Mako (*Isurus paucus*) is also listed as migratory under the EPBC Act with habitat likely to occur in the surrounding area.

3.2.1.3. Reptiles

Three threatened species of turtle, the Loggerhead Turtle (*Caretta caretta*) (endangered and migratory), the Leatherback Turtle (*Dermochelys coriacea*) (endangered and migratory) and the Green Turtle (*Chelonia mydas*) (vulnerable and migratory) are listed as potentially having habitat in the platform operating areas. In addition to these species, the Hawksbill Turtle (*Eretmochelys imbricata*) (vulnerable) is also listed as threatened and potentially occurring in the surrounding area.

3.2.1.4. Birds

The Victorian coast and neighbouring islands provide feeding and nesting habitats for many coastal and migratory bird species. Seabirds spend much of their lives at sea in search of prey and return for a short time to breed and raise chicks.

Colonies of seabirds occur to the west of the operating areas in Corner Inlet and on the islands around Wilsons Promontory, to the east at the Skerries, Tullaberga Island and Gabo Island and to the south on Curtis Island and the Hogan Island Group. Eastern Bass Strait is also a foraging area for at least 15 species of albatross, three species of petrel and one species of skua.

One hundred and four bird species listed under the EPBC Act, may occur, or are likely to occur, within the surrounding area. Of these bird species, 21 may occur, or are likely to occur, within the platform operating areas. Many birds periodically pass through the area on their way to or from the Bass Strait islands and mainlands of Victoria, NSW and Tasmania.

3.2.1.5. Seals

Two seal species, the Australian Fur Seal (*Arctocephalus pusillus doriferus*) and the New Zealand Fur Seal (*Arctocephalus forsteri*) are known to occur in the platform operating areas. Both species are listed under the EPBC Act, however they do not carry a threatened status under Commonwealth legislation or Victorian State legislation. Seals are frequently seen throughout Esso's Bass Strait oil and gas platforms and are usually found resting and swimming in the vicinity of the platform structures. The dugong (*Dugong dugon*) may occur within the surrounding area.

3.2.1.6. Cetaceans

Several cetacean species (whales, dolphins and porpoises) listed under the EPBC Act, may occur, or are likely to occur, within the platform operating areas and surrounds. This includes Blue Whales (*Balaenoptera musculus*), Southern Right Whales (*Eubalaena australis*), Humpback Whales (*Megaptera novaeangliae*), Bottle-nosed Dolphins (*Megaptera novaeangliae*) and Dusky Dolphins (*Lagenorhynchus obscurus*), all of which may occur, or are likely to occur, within the platform operating areas.

Whales are known, and observed, to play and display normal breaching, blowing, lobtailing and diving behaviour around the platform and vessels, including with calves, before moving on again. Although whales are known to migrate through the region during spring and autumn/early winter, the operating platform areas is not a recognised feeding, breeding or resting area for cetaceans.

Fraser's Dolphin (*Lagenodelphis hosei*) and the Indo-Pacific Humpback Dolphin (*Sousa chinensis*) may occur in the surrounding areas.



3.2.2. Marine Environments

Offshore marine environments that occur within the surrounding area include:

- Open marine environment (also occurs within the platform operating areas).
- Seabed (also occurs within the platform operating areas).
- Subtidal rocky reefs.
- Estuaries.

Nearshore environments within the surrounding area include:

- Intertidal rocky shores.
- Intertidal, emergent, sub tidal aquatic vegetation.
- Sheltered intertidal flats and bare sediment (mudflats).
- Marshes.
- Mangroves.
- Sandy beaches and dunes.
- Cliffs/exposed rocky headlands.
- International, national, state, regional or coastal sites of significance or sensitivity.

3.3. Sites of Significance or Sensitivity in the Operating Areas and Surrounds

There are no areas of high conservation significance present in the platform operating areas. There are sensitive habitats in the surrounding area, comprising of:

- International sites of significance including the Gippsland Lakes Ramsar Site; Corner Inlet Ramsar Site; Logan Lagoon Ramsar Site (Flinders Island), East Coast Cape Barren Island Lagoons Ramsar Site; Elizabeth and Middleton Reefs Marine National Nature Reserve Ramsar Site; Myall Lakes Ramsar Site; and Croajingolong National Park and Biosphere Reserve (including Nadgee Nature Reserve).
- National sites of significance including the Australian Whale Sanctuary; Beagle Commonwealth Marine Reserve; Boags Commonwealth Marine Reserve; Central Eastern Commonwealth Marine Reserve; Cod Grounds Commonwealth Marine Reserve; East Gippsland Commonwealth Marine Reserve; Flinders Commonwealth Marine Reserve; Franklin Commonwealth Marine Reserve; Freycinet Commonwealth Marine Reserve; Hunter Commonwealth Marine Reserve; Jervis Commonwealth Marine Reserve; Lord Howe Commonwealth Marine Reserve; Ben Boyd National Park; Biamanga National Park; Booti Booti National Park; Bouddi National Park; Bournda National Park; Cape Howe Marine National Park; Conjola National Park; Corner Inlet Marine National Park; Crowdy Bay National Park; Eurobodalla National Park; Freycinet National Park; Jervis Bay National Park and Booderee National Park; Kamay Botany Bay National Park; Khappinghat Nature Reserve and Saltwater National Park; Kent Group National Park and Kent Group Marine Nature Reserve; Limeburners Creek National Park and Nature Reserve; Meroo National Park; Mimosa Rocks National Park; Mt William National Park; Murramarang National Park; Myall Lakes National Park; Ninety Mile Beach Marine National Park; Point Hicks Marine National Park; Royal National Park; Sea Acres National Park and Nature Reserve; Seven Mile Beach National Park; Strzelecki National Park; Sydney Harbour National Park; The Lakes National Park and Gippsland Lakes Coastal Park; Tomaree National Park; Wallarah National Park; Wilsons Promontory Marine National Park, Wilson's Promontory Marine Park, Wilsons Promontory Marine Reserve and Wilsons Promontory National Park; Worimi National Park; and Wyrabalong National Park.
- State (NSW) sites of significance including the Port Stephens Great Lakes Marine Park; Jervis Bay Marine Park; and Batemans Marine Park including Montague Island Nature Reserve.



- State (Victorian) sites of significance including the Gabo Island Harbour Special Management Area and Gabo Island Light Station Reserve; Mallacoota Inlet Special Management Area; The Skerries Special Management Area; Beware Reef Marine Sanctuary; Cape Conran Coastal Park; Corner Inlet and Nooramunga Marine and Coastal Parks; Shallow Inlet Marine and Coastal Park; and Bass Strait Islands Nature Reserves and Conservation Areas.
- State (Tasmanian) sites of significance including the Bass Strait Islands Nature Reserves and Conservation Areas.

3.4. Socio-Economic Environment

3.4.1. Cultural Heritage

The Lord Howe Island Group which is inscribed on both the World Heritage List and National Heritage List is located approximately 1,500 km from the platform operating areas. There are no other World Heritage properties or National Heritage places in the platform operating areas and surrounds.

The Gunai-Kurnai people hold native title over much of onshore Gippsland, and 200 m of offshore sea territory between Lakes Entrance and Marlo.

The Summerland Peninsula (on the southwest coast of Phillip Island, approximately 280 km west of the Central Fields platforms) has been nominated for inclusion on the National Heritage List as it provides valuable habitat for the little penguin and other species. This nomination either will be, or has been, referred to the Australian Heritage Council for assessment and no determination has yet been made as at September 2014.

Some aboriginal sites of cultural importance include Shallow Inlet Marine and Coastal Park (identified by the Boon Wurrung, Bunurong and Gunai/Kurnai people as their traditional country), Khappinghat Nature Reserve and Saltwater National Park (of cultural importance to the Biripi and Worimi people) and Worimi National Park (of cultural importance to the Worimi people).

3.4.2. Shipwrecks

A search of the National Shipwrecks Database identified a number of shipwrecks within the surrounding area (380 in Victorian waters, 254 in NSW waters and 375 in Tasmanian waters) and none in the platform operating areas.

3.4.3. Commercial Fishing

Various commercial fisheries are known to occur within the platform operating areas and surrounds. The main commercial Commonwealth fisheries within the surrounding area are the Southern and Eastern Scalefish and Shark Fishery (SESSF); the Bass Strait Central Zone Scallop Fishery (BSCZSF); and the Small Pelagic Fishery. Other Commonwealth fisheries operating within the surrounding area include the Eastern Skipjack Tuna Fishery and the Eastern Tuna and Billfish Fishery.

State administered fisheries operating within the broader region include Victorian and Tasmanian Scallop Fisheries; Victorian, Tasmanian and NSW Abalone Fisheries; Victorian, Tasmanian and NSW Rock Lobster Fisheries; Victorian Commercial Bay and Inlet Fisheries; Victorian Wrasse Fishery; Tasmanian Shellfish Fishery; NSW Ocean Trawl Fishery; NSW Ocean Trap & Line Fishery; NSW Estuary General Fishery; NSW Ocean Hauling Fishery; and the NSW Oyster Aquaculture. Other State fisheries include the NSW Estuary Prawn Trawl Fishery, Tasmanian Scalefish Fishery, Tasmanian Commercial Dive Fishery, and Tasmanian and Victorian Giant Crab Fisheries.

3.4.4. Recreational Fishing, Boating and Tourism

The Gippsland region is estimated to attract more than 7 million visitors annually. These visitors are estimated to spend an estimated \$1 billion in the region per annum, with flow-on expenditure estimated at over \$699 million per annum. There are more than 1,000 specialised tourism businesses in Gippsland and more than 12,000 people estimated to be employed as a direct result of tourism in Gippsland.



Tourism and recreational activities offered by the coastal areas of central and eastern Gippsland include; recreational fishing amongst the Nooramunga islands, on the Gippsland Lakes, along Ninety Mile Beach, at Cape Conran Coastal Park and Croajingolong National Park and off the coast of Mallacoota; swimming and surfing along the Gippsland coast; scuba diving and snorkelling in Gippsland's Marine and Coastal Parks; and walking and hiking in Gippsland's National and Coastal Parks.

Similar to the Gippsland region, the coastal areas of southern NSW also offer fishing, canoeing, boating, diving and surfing activities in their bays and lakes, beaches and rivers. Popular activities include walking along the Jervis Bay National and Marine Park and Killalea State Park; surfing, swimming or fishing at ocean beaches; diving and snorkelling in the Bushrangers Bay Aquatic Reserve; cycling, sailing, water skiing, rowing and fishing at Lake Illawarra; and exploring Montague Island for its colony of Australian fur seals.

Similar to the coastal areas of Victoria and New South Wales, the coastal areas of north-eastern Tasmania also offer fishing, boating, diving, surfing and other activities in their bays, beaches and rivers. Popular activities include (Discover Tasmania, 2014) walking along the beach, fishing, diving, camping and fossicking for 'Killiecrankie diamonds' at Flinders Island; swimming and surfing at Scamander Beach; exploring the mountain ranges at the Strzelecki National Park; exploring the rocky gullies, beaches, forests and orange lichen-coloured boulders at the Bay of Fires Conservation Area; and diving, kayaking or travelling via a glass-bottomed boat through the Governor Island Marine Reserve to explore the kelp-covered reefs and sponge gardens.

3.4.5. Commercial Shipping

Bass Strait is one of Australia's busiest shipping areas with more than 3,000 vessels passing through Bass Strait each year. Bass Strait is a transit route for shipping traffic connecting the eastern and western ports of Australia. A shipping exclusion area (Area to Be Avoided) surrounds platforms in Bass Strait, including the Central Fields platforms.

3.4.6. Oil and Gas Industry

More than 4 billion barrels of liquids and 8 trillion cubic feet of gas have been produced in Bass Strait to date, from offshore production facilities (platforms, monotowers and subsea completions) and via a pipeline network of over 600 km; and various fields under exploration or development. There are 26 petroleum production licences held by various titleholders in Bass Strait.



4. Environmental Risk and Impact Assessment and Management

Esso undertook an Environmental Risk Assessment (ERA) workshop to identify the potential impacts and risks from the Central Fields platforms and the associated pipelines, and to assess the adequacy of measures to reduce the impacts and risks to As Low as Reasonably Practicable (ALARP) and acceptable levels. Workshop participants were chosen based on their familiarity with, knowledge of, and expertise in Esso's operations at the Central Fields locations.

The approach and methodology used during the ERA process was consistent with AS/NZS ISO 31000 and AS/NZS ISO 14001.

Environmental impacts and risks for planned activities that have the potential to impact the environment (see Section 2.1) and for unplanned spill scenarios (see Section 4.2) were evaluated first by determining the consequence severity, and estimating the probability or likelihood that the consequences could occur.

- *Consequence severity:* There are four consequence categories (I through IV, with I being the highest consequence level). The consequence categories consider environmental effects (in terms of duration, size/scale, intensity) and sensitivity (in terms of irreplaceability, vulnerability and influence).
- *Probability:* There are five probability categories (A through E, with A being the most likely level). The probability categories consider the probability for each failure, event or condition necessary to produce the consequences, given the implementation of controls that prevent and mitigate the risk.

The combination of consequence severity and probability of occurrence determines the position on the Esso Risk Matrix. The Esso Risk Matrix is divided into four categories, with Category 1 being the highest risk category and Category 4, the lowest. A risk could have a low consequence severity and high probability of occurrence, and result in the same risk ranking as a risk with a high consequence severity and low probability of occurrence. Environmental risks described in this EP were assessed as Category 3 and 4 risks.

Esso then determined whether risks were reduced to ALARP by combining an understanding of the nature and cause of the risk to be avoided and the cost involved in avoiding or mitigating the risk (in terms of increased impact on personal safety and/or the environment, increased time, effort or financial cost). A risk is considered to be reduced to ALARP if there are no additional reasonably practicable measures available to further reduce the risk; or there are no reasonably practicable alternatives to the activity; or the 'cost' of implementing further measures is grossly disproportionate to the reduction in risk.

Esso then determined whether risks were reduced to acceptable levels by inspecting the final category of environmental risk and comparing the management of the risk with internal and external standards and stakeholder feedback. The risk is considered to be reduced to acceptable levels if the level of residual environmental risk associated with the activity was either Category 2, 3 or 4; and the activity is commonplace in current offshore practice (i.e. benchmarked), is compliant with current industry/ExxonMobil Australia policy and standards, and Australian legislation; and any valid claims or objections to the risk from relevant persons or stakeholders, are considered.

4.1. Operations Integrity Management System (OIMS)

The operation of the Central Fields platforms, the BKA subsea facility and the associated pipelines will be managed in accordance with ExxonMobil's Operations Integrity Management System (OIMS).

The OIMS Framework establishes expectations for addressing risks inherent in the business and ensuring hazards are safely controlled. All OIMS management systems contribute to the effective management of the identified environmental risks and impacts in the Central Fields EP. OIMS Systems that have been referenced as controls in Table 1 are:

- *OIMS System 5-2 (Personnel Training)* ensures that personnel are trained in the knowledge and skills necessary to meet the requirements of their specific positions and roles.
- *OIMS System 6-3 (Well Management)* provides the structure for wellwork planning and operations, as well as ongoing well integrity activities.



- *OIMS System 6-4 (Work Management)* ensures that the work activities at Esso-operated or controlled sites are undertaken in a structured and controlled manner to reduce the risk of incidents.
- *OIMS System 6-5 (Environmental Management)* provides a framework that meets Esso environmental business planning expectations, establishes the requirements for environmental management, and enables Esso to conduct its business in a manner that is compatible with the balanced environmental and economic needs of the communities in which it operates.
- *OIMS System 6-6 (Facility Integrity Management)* ensures that the operations integrity of all Esso-owned or controlled critical equipment is maintained over the complete life cycle of the equipment without significant failures that would (1) result in uncontrolled emissions, fires, explosions, or incidents that might pose serious danger to people, the environment, or assets; or (2) significantly impact equipment availability and reliability.
- *OIMS System 8-1 (Contractor Selection and Management)* provides a systematic approach for the management of interfaces with third-party suppliers of services (i.e., contractors) to achieve continuous improvement in contractor operations integrity performance. This System covers requirements for interfaces for monitoring, evaluation, and feedback to the contractor.
- *OIMS System 10-2 (Emergency Preparedness and Response)* ensures that Esso establishes effective emergency preparedness and response, and provides well maintained equipment and trained personnel to manage incidents. Emergency situations include those incidents that impact safety, security, health, and the environment.

4.2. Unplanned Events

Consideration was also given to unplanned events which, although unlikely to occur, could lead to impacts to the environment. Based upon the proposed activities, an assessment of all hydrocarbon spill scenarios which could occur was identified as part of the Environmental Risk Assessment (ERA). The ERA identified the following worst-case spill scenarios:

- Vessel collision with another vessel or platform.
- Loss of well control/well blowout from workover operations or well integrity failure.
- Loss of containment from pipeline and topsides.

The *loss of well control/well blowout event* was carried forward to Oil Spill Trajectory Modelling and determined the Zone of Potential Impact to the environment in the unlikely occurrence of an unplanned event.

The Zone of Potential Impact encompasses the platform operating area (i.e., the immediate zone around the platform/s) and the surrounding area (i.e., the area identified, through Oil Spill Trajectory Modelling, as potentially being impacted by a loss of well control/well blowout event, and described in Section 3).

4.3. Hazards, Potential Impacts and Control Measures

A summary of the environmental hazards, potential impacts and controls is provided in Table 1.



Table 1 Summary of Hazards, Potential Impacts and Control Measures

Hazard	Potential Impact	Control Measures	Risk Category
Gippsland Wide Co-ordinated Activities			
Sewage discharge from vessels	Sewage waste will be readily dispersed and degraded with little or no impact expected.	OIMS System 8-1 (Evaluating, Selecting and Monitoring Third Parties) ensures vessel contractors treat sewage through a certified sewage treatment system prior to discharge.	4
Disposal of food wastes from vessels	Food waste will be readily degraded and dispersed, with little or no impact expected.	OIMS System 8-1 (Evaluating, Selecting and Monitoring Third Parties) ensures vessel contractors macerate putrescible waste (< 25mm size) prior to discharge, or the waste will be taken ashore for disposal.	4
Disposal of solid/general waste from the platform	Localised and temporary change in water quality, impacts on visual amenity (littering), and death or injury of marine fauna (through ingestion, entanglement, suffocation).	OIMS System 6-5 (Environmental Management) ensures a waste management manual is in place that establishes and maintains waste management procedures for each type of waste generated including documentation requirements for handling, storage, and disposal of hazardous materials.	4
Disposal of solid/general waste from vessels	Localised and temporary change in water quality, impacts on visual amenity (littering), and death or injury of marine fauna (through ingestion, entanglement, suffocation).	OIMS System 8-1 (Evaluating, Selecting and Monitoring Third Parties) ensures vessel contractors store general refuse, solid and hazardous waste appropriately on the vessels and transfer the waste onshore for disposal.	4
Discharge of vessel deck drainage	Localised and temporary reduction in water quality leading to potential impact on marine organisms.	OIMS System 8-1 (Evaluating, Selecting and Monitoring Third Parties) ensures vessel contractors have scupper plugs fitted for use in overboard drains.	4
Discharge of vessel oily water (bilge)	Localised and temporary reduction in water quality leading to potential impact on marine organisms.	OIMS System 8-1 (Evaluating, Selecting and Monitoring Third Parties) ensures vessel contractors treat bilge to an oil-in-water concentration of 15ppm prior to discharge.	4
Ballast water discharge - Unplanned introduction/transmission of invasive species	Introduced exotic species out-compete endemic species for local resources.	OIMS System 8-1 (Evaluating, Selecting and Monitoring Third Parties) ensures vessel contractors comply with the requirements of AQIS's Australian Ballast Water Management 2008 which includes exchange at sea outside of Australian territorial waters for 'high risk' ballast water from port or coastal waters.	4
Vessel biofouling - Unplanned introduction/transmission of invasive species	Introduced exotic species out-compete endemic species for local resources.	OIMS System 8-1 (Evaluating, Selecting and Monitoring Third Parties) ensures vessel contractors undertake marine pest inspection and hull anti-fouling undertaken for all vessels within 7 days prior to entering Australian Waters, in accordance with the National Biofouling Management Guidance for the Petroleum Production and Exploration Industry (DAFF 2009).	4
Vessel movements - Unplanned collision with marine fauna	Death or injury of marine fauna.	OIMS System 8-1 (Evaluating, Selecting and Monitoring Third Parties) ensures vessel contractors; maintain a 300 m standoff distance from cetaceans (where possible and safe to do so) as they move into and out of the 500 m exclusion zone, and employ avoidance measures such as reducing speed within the 500 m exclusion zone (where possible and safe to do so) should listed marine species (such as cetaceans or seals) be sighted.	4
Fuel combustion equipment on vessels	Decline in air quality and contribution to greenhouse gases.	OIMS System 8-1 (Evaluating, Selecting and Monitoring Third Parties) ensures vessel contractors have certified fuel-combustion equipment and operate in accordance with a current Air Pollution Prevention Certificate, where applicable.	3



Hazard	Potential Impact	Control Measures	Risk Category
Surface structure maintenance, inspection and intervention	Localised and temporary change in water quality from minor amounts of paint residue, sand blasting, coatings, grit.	OIMS System 6-4 (Work Management) ensures guidelines are provided for specific work activities, i.e. abrasive blasting, includes the containment of paint, coating or grit.	4
Subsea structure maintenance, inspection and intervention	Localised and temporary change in water quality leading to potential impact on marine organisms, disturbance/ removal of marine growth, smothering or disturbance of benthic flora and fauna.	OIMS System 6-1 (Operations and Maintenance Procedures) ensures correctly categorised and approved procedures are developed for subsea interventions.	4
ROV operations	Localised and temporary change in water quality leading to potential impact on marine organisms	The hydraulic fluid used is a low environmental impact fluid.	4
Wellwork - Discharge of wellwork fluids	Localised and temporary change in water quality leading to potential impact on marine organisms	Low impact chemicals used.	4
Wellwork - Discharge of cement or sand in wellwork operations	Localised and temporary change in water quality and turbidity in the water column leading to potential impact on marine organisms. Smothering of benthic flora/fauna.	Use of low impact cement and cement additives.	4
Use and storage of radioactive sources	Localised change in radiation leading to potential impact on marine organisms.	OIMS System 6-4 (Work Management) ensures guidelines are provided for radiography, that includes storage and handling requirements to prevent loss to the marine environment.	4
Facility Specific Activities			
Physical presence - Noise	Behavioural change, impairment to movement patterns of seabirds, hearing impairment to marine fauna, increased stress in marine fauna	OIMS System 8-1 (Evaluating, Selecting and Monitoring Third Parties) ensures vessel contractors maintain vessel thrusters. OIMS System 8-1 (Evaluating, Selecting and Monitoring Third Parties) ensures that vessel contractors maintain a 300 m standoff distance from cetaceans (where possible and safe to do so as they move into and out of the 500 m exclusion zone).	4
Physical presence of platform, subsea equipment, and pipelines	Interference with commercial/ recreational fishing or shipping activities.	A 500m Petroleum Safety Zone (PSZ) is in place around the facility.	4
Operation and maintenance of platform – potential dropped objects	Localised smothering impact to immobile seafloor species, localised and temporary change in water quality leading to potential impact on marine organisms.	OIMS System 6-6 (Facility Integrity Management) ensures grating, appurtenances and other caissons are appropriately maintained. OIMS System 6-6 (Facility Integrity Management) ensures cranes and lifting gear are appropriately maintained.	4
Sewage discharge from platform	Sewage waste will be readily dispersed and degraded with little or no impact expected.	OIMS System 6-6 (Facility Integrity Management) ensures the sewage macerator is appropriately maintained.	4
Food waste discharge from platform	Food waste will be readily dispersed and degraded with little or no impact expected.	OIMS System 6-6 (Facility Integrity Management) ensures the food macerator is appropriately maintained.	4



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Hazard	Potential Impact	Control Measures	Risk Category
Release of foam into the marine environment	Localised and temporary change in water quality leading to potential impact on marine organisms.	Use of Perfluorooctyl Sulphonate (PFOS) Free Aqueous Film-Forming Foams.	4
Chemical and oils storage and handling	Localised and temporary change in water quality leading to potential impact on marine organisms.	OIMS System 6-6 (Facility Integrity Management) ensures oil and chemical store bunds are appropriately maintained. The water-soluble chemicals discharged to drain are low environmental impact.	4
Bulk transfer from vessel to platform via hose - Unplanned release of diesel or other chemicals	Localised and temporary change in water quality leading to potential impact on marine organisms.	Hoses and dry break couplings are changed out regularly and OIMS System 6-6 (Facility Integrity Management) ensures transfer hoses are appropriately maintained. OIMS System 8-1 (Evaluating, Selecting and Monitoring Third Parties) ensures vessel contractors have a SOPEP in place. OIMS System 10-2 (Emergency Preparedness and Response) ensures effective emergency preparedness and response plans are in place, which provide for well-maintained equipment and trained personnel. OIMS System 6-6 (Facility Integrity Management) ensures oil spill equipment is appropriately maintained.	4
Pipeline hydrotest, flooding, dewatering and watering out discharges	Localised and temporary change in water quality leading to potential impact on marine organisms.	In the event that water is to be discharged overboard, it is firstly treated before being discharged into the marine environment such that the oil-in-water content is below 30mg/L. The chemicals used are low environmental impact chemicals.	4
Hydraulic fluid discharge from subsea operations or subsea failures	Change in water quality leading to potential impact on marine organisms.	The hydraulic fluid used is a low environmental impact fluid.	4
Produced water discharge	Localised and temporary change in water quality. Acute or chronic impacts to marine organisms. Smothering impacts due to discharge of sand.	Produced formation water is separated from crude oil and then treated by dissolved gas flotation and/or hydrocyclones to remove oil to below 30mg/L before discharge to the ocean. Performance of the online oil-in-water (OIW) monitor is measured regularly. OIMS System 6-6 (Facility Integrity Management) ensures the separator low oil-water interface level instrumentation, oil phase detectors and on-line OIW monitors are appropriately maintained. Composition testing and ecotoxicity assessments are conducted routinely. Dispersion modelling and targeted in-situ sampling is conducted. An adaptive management regime is in place.	4
Production drainage from open and closed pile systems	Localised and temporary change in water quality leading to potential impact on marine organisms.	OIMS System 6-6 (Facility Integrity Management) ensures closed pile level instrumentation is appropriately maintained.	4
Venting	Decline in air quality and contribution to greenhouse gases.	OIMS System 6-6 (Facility Integrity Management) ensures pipeline flexible sections (where applicable) and vents (where applicable) are appropriately maintained.	3
Flaring	Decline in air quality and contribution to greenhouse gases.	Flaring only occurs during equipment malfunction, emergency situations, commissioning/startup and for maintenance reasons.	4
Flaring - Unplanned carryover of liquid hydrocarbon	Localised and temporary change in water quality leading to potential impact on marine organisms.	OIMS System 6-6 (Facility Integrity Management) ensures high level shutdowns on the flare scrubber are maintained.	4



Hazard	Potential Impact	Control Measures	Risk Category
Fuel combustion equipment on platform	Decline in air quality and contribution to greenhouse gases.	OIMS System 6-6 (Facility Integrity Management) ensures pumps and compressors are maintained appropriately.	3
Unplanned Events			
Vessel collision (with platform or another vessel) - Unplanned release of chemical or diesel	Localised change in water quality leading to potential impact on seabirds, marine mammals, reptiles, fish and other marine organisms.	OIMS System 8-1 (Evaluating, Selecting and Monitoring Third Parties) ensures vessel contractors have trained and qualified Vessel Masters. OIMS System 8-1 (Evaluating, Selecting and Monitoring Third Parties) ensures vessel contractors have a SOPEP in place. OIMS System 10-2 (Emergency Preparedness and Response) ensures effective emergency preparedness and response plans are in place, which provide for well-maintained equipment and trained personnel. OIMS System 6-6 (Facility Integrity Management) ensures oil spill equipment is appropriately maintained.	4
Loss of well control/well blowout from workover operations or well integrity failure	Oil Spill Trajectory Modelling shows the following potential impacts may occur in the most severe loss of well control/well blowout event: <ul style="list-style-type: none"> Surface oiling to Victorian, NSW; or north-eastern Tasmanian shorelines. Dissolved/entrained oil in nearshore waters. Change in water quality leading to potential impact on seabirds, shorebirds, marine mammals, reptiles, fish and other marine organisms. Taint (off-flavour) of seafood harvested from areas severely affected by a spill. Coastal waters of declared native title areas or shipwreck sites exposed to oil. Exclusion of fishing, shipping, boating, tourism or oil and gas activity from spill-affected areas. 	OIMS System 6-3 (Well Management) ensures wellwork programs are documented, understood, and effectively executed. OIMS System 6-3 (Well Management) ensures that Wellwork Supervisors are trained and competent to perform their assigned tasks. OIMS System 5-2 (Personnel Training) ensures that Operations Technicians are trained to perform their assigned tasks, including Operations integrity risks during well operations. OIMS System 6-3 (Well Management) ensures well integrity activities are undertaken, including pressure monitoring, testing, preventive maintenance and downhole corrosion control. OIMS System 10-2 (Emergency Preparedness and Response) ensures effective emergency preparedness and response plans are in place, which provide for well-maintained equipment and trained personnel. OIMS System 6-6 (Facility Integrity Management) ensures oil spill equipment is appropriately maintained.	3
Loss of containment from pipeline or topsides	The most severe loss of containment from a pipeline or topsides can result in similar but lesser potential impacts to shoreline and socio-economic receptors (described above).	OIMS System 6-6 (Facility Integrity Management) ensures critical inspection and maintenance programs are in place. Corrosion control and monitoring programs in place. OIMS System 6-6 (Facility Integrity Management) ensures cranes and lifting gear are appropriately maintained. OIMS System 6-6 (Facility Integrity Management) ensures shutdown and blowdown systems (pipeline high-low pressure, flowline high-low pressure, production/test header high-low pressure and export pipeline high-low pressure) are appropriately maintained. OIMS System 10-2 (Emergency Preparedness and Response) ensures effective emergency preparedness and response plans are in place, which provide for well-maintained equipment and trained personnel. OIMS System 6-6 (Facility Integrity Management) ensures oil spill equipment is appropriately maintained.	3



4.4. Response Arrangements

In the highly unlikely event of an unplanned loss of containment, the Oil Pollution Emergency Plan (OPEP) outlines the response arrangements that can be undertaken, including:

- Source control.
- Monitoring and natural degradation.
- Dispersants.
- Protection and deflection.
- Containment and recovery.
- Shoreline clean-up.
- Setting exclusion zones.

Response arrangements will be utilised according to the size and type of spill, environmental and cultural sensitivities, prevailing weather conditions, access constraints and available resources. A Net Environmental Benefit Analysis (NEBA) is applied to consider the advantages and disadvantages of various oil spill response options, which is completed in consultation with relevant government departments and agencies.

The OPEP also outlines the resources (personnel and equipment) which may be utilised depending on the size and nature of the spill, the lead organisations and responders, and the notification requirements. The OPEP interfaces with the spill contingency plans developed by Australian Maritime Safety Authority (AMSA) (National Plan), Victorian Government (VicPlan), NSW Government (NSW Plan), Tasmanian Government (Tas Plan), Gippsland Ports (Gippsland Region Marine Pollution Contingency Plan), and the Australian Marine Oil Spill Centre (AMOSC) (AMOSPlan).

Esso maintains oil spill response equipment stockpiles at its facilities at Long Island Point (near Hastings) and Barry Beach Marine Terminal (South Gippsland). In addition, Esso can call upon equipment and trained personnel from AMOSC (Geelong), Victorian State Plan resources, Australian National Plan for Maritime Environmental Emergencies (National Plan) resources (e.g., from AMSA), or internationally through its membership to Oil Spill Response Limited (OSRL).

Esso has developed checklists for managing an unplanned loss of containment, which include responding to the first sighting of oil and gathering spill information, implementing source control measures, classifying response levels (Level 1, Level 2 or Level 3), implementing response action plans/arrangements and reporting to statutory agencies. Esso manages incidents using the Incident Command System, which is a system designed to provide a consistent organisation to respond to emergency situations. Positions within the ICS are fixed and have specific functions, ensuring that all responders know what to do and where they report in the organisation structure. A response to a spill may also utilise members of the Esso Emergency Support Group (ESG) who provide strategic support, and if the response level is elevated, ExxonMobil's Regional Response Teams who have experience in responding to emergencies internationally.

Waste generated through oil spill response operations will be managed using Esso's Waste Management Manual (WMM). Esso has a contract in place for the provision of waste management services (including treatment, recycling and disposal) and is able to quickly mobilise a team of experts anywhere in Australia. If oil spill response operations result in the generation of wastes outside of Victoria, Esso will manage and dispose of these wastes using a spill-specific Waste Management Plan.

Wildlife response will be managed through applicable wildlife response arrangements in each state. In Victoria, wildlife response will be initiated under Victoria's emergency management arrangements as per the *Emergency Management Act 1986* (Vic). The Wildlife Response Plan for Marine Pollution Emergencies (which is a sub-plan to VicPlan) will also be implemented. In Tasmania, the WildPlan will be implemented and in NSW, the Agriculture and Animal Services Functional Area Supporting Plan and associated policies and procedures will be implemented.

The OPEP includes an Operational and Scientific Monitoring Program (OSMP), which is initiated in the event of a spill. Esso has third party contracts in place for the provision of environmental monitoring services.



Training and exercises are used to maintain Esso's ability to implement an emergency response. Oil spill response training is made available to specific Esso personnel required to undertake a role in oil spill response. Elements of the OPEP, and associated oil spill response resources (equipment or personnel), are exercised at least annually. Additional exercises are scheduled should there be a significant change to response arrangements.

4.4.1. Spill Response Activities Potential Impacts and Risks

Spill response activities have the potential to incur impacts and risks to the environment, and these are managed carefully with controls in place in the unlikely event a spill does occur. The potential environmental impacts and risks associated with proposed response strategies include:

- Seabed disturbance from mobilising a relief well drilling rig or mechanical agitation,
- Exclusion of ocean and shoreline users due to implementation of spill exclusion zones,
- Exposure of in-water fauna to oil and/or dispersant from applying dispersant, or mechanical agitation techniques,
- Shoreline impacts from spill response equipment and personnel mobilisation,
- Inappropriate waste disposal,
- Impacts to wildlife from inappropriate handling,
- Noise from vessels or aircraft,
- Vessel collision with marine fauna, and
- Additional spills (e.g. from spill response vessel collision, ROV collision or release, or an unplanned release while manually cleaning up oil).

Esso has detailed performance outcomes and standards on controls that manage the above potential impacts and risks to ensure spill response activities are managed to ALARP and acceptable levels during an actual spill response.



5. Implementation Strategy

The implementation strategy detailed in the Central Fields EP identifies OIMS systems, practices and procedures that are used to ensure environmental impacts and risks of the activity are reduced to ALARP and acceptable levels, and that environmental performance outcomes and standards outlined in the EP are met. The implementation strategy includes the following elements:

- Clear definition of personnel roles and responsibilities.
- Training, communications and awareness of environmental commitments.
- Performance measurement review and reporting, including regulatory reporting, incident reporting and environmental performance review.
- Environmental monitoring, auditing, assessments, investigations and inspections.
- Management of third party contractor services.
- Emergency and oil spill preparedness and response.
- Ongoing consultation.

5.1. Ongoing Monitoring and Performance Review

Esso will undertake an annual compliance audit against the EP. The audit will contain a detailed assessment of compliance with the environmental performance outcomes and standards and an overview of the effectiveness of control measures (i.e. that impacts and risks are reduced to ALARP and acceptable levels). Findings and recommendations of the audit will be documented and communicated to platform personnel.

OIMS Assessments are also carried out to confirm that the ongoing monitoring and measurement processes detailed in each of the OIMS systems are being carried out, environmental performance outcomes and standards are being met, and environmental impacts and risks are reduced to ALARP and managed to acceptable levels. OIMS Assessments are undertaken on a rotating basis (internal and external assessment on each system every two years), and an OIMS review occurs annually to confirm the status and effectiveness of each system.

Monitoring of environmental performance is undertaken on a regular basis through various forums including weekly and monthly leadership meetings, fortnightly site meetings, twice-daily tool box meetings and morning meetings.

Investigations into environmental incidents and non-conformances are conducted in accordance with Esso's Incident Management System (as detailed in OIMS System 9.1 Incident Management). Notification, reporting and investigation of incidents:

- Ensures management, regulatory authorities and other appropriate personnel are notified of all incidents and near misses on a timely basis;
- Enables the sharing of learnings throughout the organisation to continuously improve internal health, safety and environment systems;
- Identifies corrective actions to prevent re-occurrence; and
- Enables the analysis and trending of incident data to ensure appropriate focus on emerging issues.

In accordance with Regulation 17 (6) of the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009*, Esso will submit a proposed revision of the EP to NOPSEMA before, or as soon as practicable after, a new or significantly increased environmental impact or risk has been identified that is not provided for in the EP.



6. Consultation

Esso has undertaken consultation with all relevant stakeholders potentially affected by the operation of production facilities and pipelines in Bass Strait, including the Central Fields facilities and associated pipelines.

Stakeholders included:

- Commonwealth and State Victorian, NSW and Tasmanian government bodies and others that provide direct advice or collaborate on plans in a spill response (e.g., emergency and oil spill response agencies and providers, fishing management authorities, port authorities, and emergency services).
 - Australian Marine Oil Spill Centre (AMOSOC)
 - Australian Maritime Safety Authority (AMSA)
 - Asia Pacific Applied Science Associates (APASA)
 - Oil Spill Response Limited (OSRL)
 - Oil Response Company of Australia (ORCA)
 - Victorian Department of Transport, Planning and Local Infrastructure (DTPLI)
 - VicPlan Operations Group (VPOG)
 - Victorian Department of State Development, Business and Innovation (DSDBI)
 - Victorian Department of Environment and Primary Industries (DEPI)
 - Transport for NSW
 - Tasmanian Department of Primary Industries, Parks, Water and Environment (DPIPWE)
 - Tasmanian Parks and Wildlife Service (PWS)
 - Australian Fisheries Management Authority (AFMA)
 - Commonwealth Fisheries Association (CFA)
 - Commonwealth Department of the Environment (DoE)
 - Environment Protection Authority, Victoria (EPA Vic)
 - Gippsland Ports
 - Victorian Regional Channels Authority & Geelong Ports
 - Country Fire Authority
 - Lakes Entrance Coastguard
 - MSS Security
 - State Emergency Service
 - Water Police
 - Parks Victoria
 - Phillip Island Nature Park
 - Wildlife Victoria
 - Cardno Lane Piper (environmental monitoring)
- Commercial and recreational fisheries; fishing industry groups, associations and co-operatives;
 - NSW DPI (Fisheries Branch)
 - Seafood Industry Victoria (SIV)
 - Tasmanian Seafood Industry Council (TSIC)
 - Victorian Department of Environment and Primary Industries (DEPI) - Fisheries



- Abalone Industry Committee
- Corner Inlet Fisheries Habitat Association
- East Gippsland Estuarine Fishermen's Association
- East Zone Rock Lobster Industry Association & Southern Shark Industry Alliance
- Eastern Victorian Sea Urchin Divers Association & Eastern Zone Abalone Industry Association
- Eastern Zone Abalone Industry Association
- Lakes Entrance Fishermens' Co-operative Society Limited (LEFCOL)
- Lakes Entrance Scallop Fishing Industry Association
- South East Trawl Fishing Industry Association (SETFIA)
- Sustainable Shark Fishing Association
- Victorian Scallop Industry Association
- Victorian Bays and Inlets Fisheries Association
- Victorian Fishery Association Resource Management
- Victorian Rock Lobster Association
- Victorian Recreational Fishing (VRFish)
- Other relevant government bodies; State (Victorian) catchment management authorities; native title holders;
 - National Offshore Petroleum Titles Administrator (NOPTA)
 - Department of Industry (DoI)
 - East Gippsland Catchment Management Authority
 - Gunai / Kurnai via Office of Aboriginal Affairs
- Other oil and gas industry operators in Bass Strait;
 - Bass Oil Company Limited
 - BHP Billiton Petroleum (Bass Strait) Pty Ltd
 - Carnarvon Hibiscus Pty Ltd / 3D Oil
 - Nexus Energy Limited
 - Oil Basins Limited
 - Origin Energy
 - ROC Oil Limited
 - Santos
 - Strategic Energy Limited
- Shire councils;
 - East Gippsland Shire Council
 - South Gippsland Shire Council
 - Wellington Shire Council
- The following self-identified stakeholders also came forward.
 - Australian Oceanographic Services
 - Gippsland Coastal Board
 - Port Philip Sea Pilots



6.1. Consultation Already Undertaken

A number of mechanisms to communicate with stakeholders were used to ensure stakeholders can make an informed assessment of the possible consequences of the activity on their functions, interests or activities. This included written communications, one-on-one discussions via telephone and in-person, a public consultation session in Lakes Entrance and the online webpage (www.exxonmobil.com.au/offshore). Consultation was undertaken at various times over the period between December 2012 and October 2014.

Fourteen stakeholders either asked clarifying questions about, provided comment to, or presented valid claims and/or objections to, the activity outlined in the EP. Thirteen claims/objections in total were raised and have been summarised in Table 3. All valid claims or objections from relevant persons/stakeholders to the environmental risks identified in the EP were considered during the ERA process when determining that potential impacts had been reduced to acceptable levels.

Seven claims/objections from stakeholders related to unplanned spills and planned discharges. Three were related to spill response equipment and resourcing (No. 1 to 3), one related to potential impacts of a spill on certain fisheries and proposed spill response strategies (No. 4), one to the possibility of seafood consumer panic during a discharge/spill (No. 5), one regarding environmental monitoring in the event of a spill (No. 6), and one regarding the effect of oil on certain environmental sensitivities (No. 7).

A further six claims/objections from stakeholders related to notification and consultation processes. Three concerned recommendations to consult other fishing stakeholders (No. 8 to 10), two concerned notification of government departments in the event of an incident or significant event (No. 11 and 12), and one concerned notification of oil and gas operators in the event of a spill (No. 13).

Table 3 Summary of Claims/Objections and Responses during Stakeholder Consultation

No.	Stakeholder Claim/Objection	Summary of Response
Spill Response Equipment and Resourcing		
1	Is Esso prepared for a worst case scenario?	We have assessed the availability and location of response equipment and other resources needed to mitigate the impacts of a worst case oil spill scenario. We believe there is sufficient preparation in place and resources available to respond to a credible worst case scenario.
2	Why does Esso not base oil spill response equipment in Lakes Entrance?	<ul style="list-style-type: none"> We believe there are sufficient resources available that can be mobilised quickly and effectively from existing bases and stockpiles. We maintain oil spill response equipment stockpiles at Barry Beach Marine Terminal (South Gippsland), Long Island Point (Hastings) and Longford. Equipment can be deployed in an acceptable time period to cover a worst case scenario. DTPLI owns a stockpile of oil spill response equipment at Lakes Entrance which we can access. In addition to the Esso helicopter fleet which can be used for aerial observation and support, we have arrangements in place with local charter aircraft operators including access to a fixed wing dispersant spraying aircraft. We have held discussions with charter operators and Australian Oceanographic Services regarding use of vessels during a response, and we have an existing contract with a vessel contractor. Following consultation with Gippsland Ports, vessels that are available to support an oil spill response in the Lakes Entrance area were identified and their details have been included in the OPEP. Initial response actions for a worst case scenario would be aerial observation, oil spill trajectory modelling and putting dispersant spray aircraft on standby.



No.	Stakeholder Claim/Objection	Summary of Response
3	Have protocols been developed and lessons learned that will prevent an incident like the 2010 Gulf of Mexico oil spill from occurring again?	After 1989, we launched a top-to-bottom review of our operations and then implemented a system that today guides every operating decision we make on a daily basis. That system — our Operations Integrity Management System — consists of 11 separate elements that measure and mitigate safety, security, health, and environmental risk to people, the environment, and the communities in which we operate. Fundamental to this system is assessing the risk involved in our operations and then developing plans to mitigate and manage that risk over the operation's life. The standards and requirements embedded within our operations integrity management system dictate our approach to drilling, as they do for all of our other operations.
Potential impacts of a spill on fisheries		
4	What is the potential impact of oil spill on the abalone industry in Mallacoota and Marlo? What are Esso's response strategies to such an incident?	Availability and location of response equipment and other resources needed to mitigate the impacts of an oil spill was provided, including timeframe for response to a spill potentially affecting Marlo and Mallacoota. We updated the NEBA to reflect additional abalone reefs in Marlo and Mallacoota highlighted by the stakeholder.
Potential for seafood consumer panic		
5	Consumers may avoid buying seafood in the event of a spill. What are Esso's resources to respond?	The role of our Public Affairs department is to provide timely and accurate information and seek to address any community concerns. This could include regular media updates and direct communications such as website updates, newsletters and meetings, as well as liaison with known stakeholders (government, regulators, local authorities, community groups etc.). Processes and contracts are in place to call upon additional resources if needed.
Environmental monitoring in the event of a spill		
6	Is Esso's scope of work for the OSMP relevant to the nature and scale of Esso's activities in the Bass Strait?	We believe the OSMP is relevant to the nature and scale of Esso's activities in Bass Strait. We will continue to work via the APPEA industry group regarding industry-wide and regional approaches to Operational and Scientific Monitoring Programs.
Effect of oil on environmental sensitivities		
7	What level of detail does Esso go into for describing environmental sensitivities in the NEBA? Does Esso demonstrate an adequate level of preparedness to protect the Tasmanian Islands?	A detailed consequence assessment includes an assessment of the sensitivity of environmental resources to oil and their recovery, mapped against the potential for oil exposure from trajectory modelling. Areas that were identified as potentially impacted, evaluation of environmental effects, probabilities of oil exposure and timeframes for response were provided for review. The stakeholder agreed an adequate level of preparedness was provided to protect the Tasmanian Islands.
Recommendation to consult other fishing stakeholders		
8	Recommended Esso consult with relevant fishing stakeholder groups outlined in the database by Seafood Industry Victoria.	We consulted with all stakeholders on the Seafood Industry Victoria database.
9	Recommended Esso consult with all fishery organisations from AFMA's online directory beneath the headings, "Bass Strait Central Zone Scallop Fishery" and "Southern and Eastern Scalefish and Shark Fishery".	We consulted with stakeholders under the AFMA directory list headings.
10	Advised a fee would apply to facilitate consultation per association.	We are not required to pay people or entities to engage in consultation. We declined this arrangement but provided information posters and a table outlining potential environmental impacts and mitigation measures included in the EPs and welcomed comment.
Notification of parties in the event of an incident or significant event		
11	An oil and gas operator requested to be notified of any oil spill (Tier 2 and above) from Esso Facilities in the Gippsland Basin.	Advised that in the event of an oil spill greater than 80L, we would notify the operator if they were deemed to be potentially impacted. For concerns about spills less than 80L, we invited the operator to contact us direct on the details provided.
12	An agency requested to be notified on a list of potential scenarios.	We explained they are obliged by the Commonwealth <i>OPGGS (Environment) Regulations</i> to copy the agency on any reportable incidents that occur offshore, and may also notify the agency in other cases based on the list of scenarios but does not intend to formalize any specific notifications, other than for reportable incidents, in the EP.



No.	Stakeholder Claim/Objection	Summary of Response
13	An agency requested Esso to be notified of all spills no matter the size or source.	We believe petroleum activities are regulated by NOPSEMA as a single regulator for offshore Commonwealth waters and it is not industry practice to complete notifications to agencies other than NOPSEMA for spills from fixed platforms. We added reporting of spills over 80L from fixed platforms to the agency to the EP, but not all spills including those under 80L. We will continue reporting all spills from (mobile) vessels to the agency.

Note: This summary has been adapted for brevity from detailed consultation records and therefore is not a full representation of conversations or dialogue with these stakeholders.

Other feedback from consultation with stakeholders resulted in relevant contributions to the OPEP, which have been outlined in Table 4. No stakeholder had feedback that impacted the control measures outlined in the EP.

Table 4 Further Stakeholder Contributions to the OPEP

Agency	Contribution to the Oil Pollution Emergency Plan
Gippsland Ports	<ul style="list-style-type: none"> • Identification of response vessels • Understanding of Gippsland Lakes protection priorities and limitations of response strategies
AMOSOC	<ul style="list-style-type: none"> • Response strategies • Numbers of AMOSOC core group personnel • Equipment
Department of Transport, Planning and Local Infrastructure (DTPLI) (Victoria)	<ul style="list-style-type: none"> • Division of responsibility • Oil Spill Response Atlas (OSRA) • Transition of control • Notifications • DTPLI equipment and resources • Esso review and provision of information for VicPlan update
Transport for NSW	<ul style="list-style-type: none"> • OSRA • Notifications • Wildlife management • Identification of response vessels
Oil Spill Response Limited	<ul style="list-style-type: none"> • Availability of equipment and time to mobilise
Department of State Development, Business and Innovation (DSDBI) (Victoria)	<ul style="list-style-type: none"> • Notification requirements
AMSA	<ul style="list-style-type: none"> • Notification and reporting requirements • Activation procedures for fixed wing aerial dispersant assets • National Plan resources • Memorandum of understanding
EPA Victoria	<ul style="list-style-type: none"> • Reporting requirements • Waste management
Department of Environment (DoE) (Commonwealth)	<ul style="list-style-type: none"> • Reporting requirements
Department of Environment and Primary Industries (DEPI) (Victoria)	<ul style="list-style-type: none"> • Wildlife response
Department of Primary Industries, Parks, Water and Environment (DPIPWE) (Tasmania)	<ul style="list-style-type: none"> • Wildlife response • Response arrangements • Notifications • Response capabilities and resources



6.2. Ongoing Consultation

Esso will continue to consult with stakeholders on an ongoing basis. This will consist of:

- Maintaining the database of relevant stakeholders potentially affected by offshore production operations and maintaining records of consultation for each stakeholder.
- Following acceptance of the EP by NOPSEMA, updating stakeholders of the outcome and to notify them of next steps going forward.
- Providing an annual newsletter to stakeholders.
- Contacting stakeholders at 6 monthly frequencies.
- Providing any relevant information through the dedicated website at www.exxonmobil.com/offshore
- Holding a public participation forum in Lakes Entrance twice in the five-year period following acceptance of the EPs.
- Maintaining oil spill response preparedness for offshore operations through workshops, mock scenarios and collaborative meetings with regional groups and response agencies. Key stakeholders include state government authorities, ports and councils.



7. Contact Details

The environmental contact for this activity is:

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