

Offshore Project Proposal

Artisan and La Bella gas fields



The Thylacine platform in the offshore Otway Basin (showing drilling rig and tug boats in the background)

Project Update | February 2021

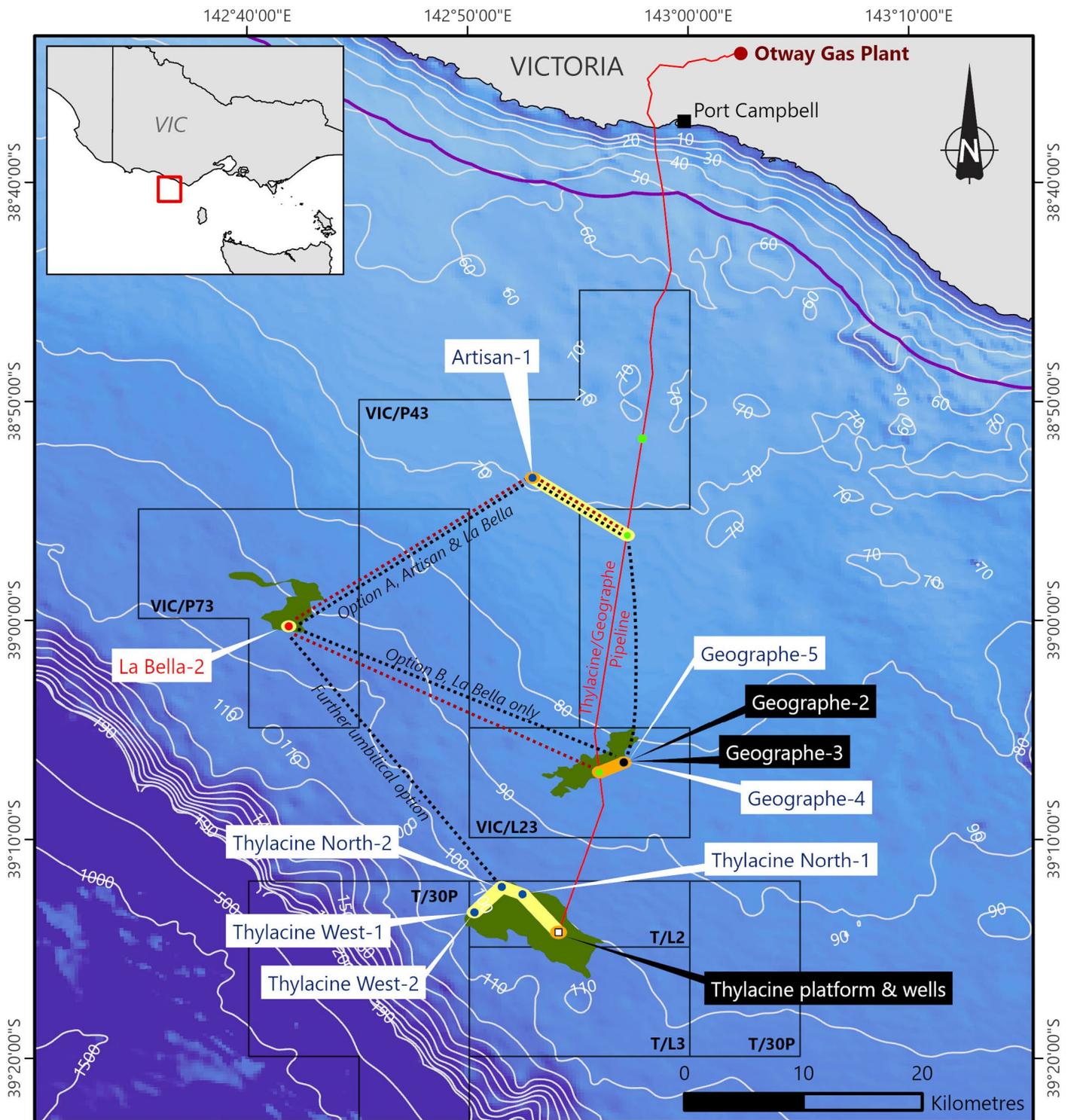
This update includes information on:

- ➔ Development of an Offshore Project Proposal (OPP) which will be submitted to the National Offshore Petroleum Safety and Environment Management Authority (NOPSEMA) for the wells and subsea infrastructure associated with the Artisan and La Bella gas fields
- ➔ An overview of the proposed wells, infrastructure and development activities covered by the Otway Offshore Project and which have been previously communicated via information sheets in 2019
- ➔ Information on how the proposed activities fit together to ensure a continuous supply of natural gas to the Otway Gas Plant for years to come.

About Beach

Beach Energy is an ASX listed oil and gas exploration and production company with headquarters in Adelaide. It has operated and non-operated, onshore and offshore, oil and gas production from five production basins across Australia and New Zealand and is a key supplier of domestic natural gas to Australia.

Otway Offshore Project Locations and Proposed Petroleum Safety Zones



This map shows proposed locations which may be subject to change. Location of T30/P well to be confirmed.

GDA2020

- | | | | |
|------------------|----------------------|-------------------------|------------------------------|
| ● Existing wells | ● Hot tap tee | — Existing gas pipeline | ● Planned PSZ |
| ● Planned wells | □ Thylacine platform | ⋯ Proposed umbilicals | ● Existing PSZ |
| ● Proposed well | □ Beach permits | ⋯ Proposed flow lines | ● Gas fields |
| | | | ● Coastal waters (3nm limit) |

Otway Offshore Project Proposal

Beach is required to submit an Offshore Project Proposal (OPP) to the National Offshore Petroleum Safety and Environment Management Authority (NOPSEMA) for the wells and subsea infrastructure associated with the Artisan and La Bella gas fields.

The planned wells and infrastructure for the Geographe and Thylacine fields which have been communicated via [Otway Offshore Project Updates](#) are included in the original Otway Gas Development (refer to Project History below) approved under the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) (Reference No: 2002/621).

Beach is required to develop an OPP as the first step in gaining approvals for any new development wells not already covered by the current EPBC Act approval described above. The OPP process involves NOPSEMA's assessment of the potential environmental impacts and risks of the activities conducted over the life of the project, to ensure they will be managed by Beach to an acceptable level. Following approval, Beach is then required to submit environment plans to be assessed and approved by NOPSEMA before each activity can commence.

During the OPP process, a public comment period takes place whereby stakeholders can review and provide comment on the OPP. Following the public comment period, Beach must prepare a consultation report and the final OPP for assessment by NOPSEMA.

Guidance on the OPP and public comment process is available on the NOPSEMA website: www.nopsema.gov.au/environmental-management/offshore-project-proposals

Environmental, Heritage, Social and Economic Values within the Project Area

Beach recognises the environmental, heritage, social and economic values in the areas in which we operate.

The environment within the project area is characterised by:

- Water depths ranging from approximately 70 to 110 metres
- Seabed consisting of open sand habitat with little or no fauna. Where fauna does exist it is likely to consist of bivalves, polychaetes and crustaceans.

A variety of marine fauna occur in the project area including the potential presence of:

- Blue, humpback and fin whales, particularly during the summer months
- Southern right and minke whales, particularly during the winter months
- Common dolphin and shark species throughout the year
- New Zealand and Australian fur-seals throughout the year
- Loggerhead, green and leatherback turtles throughout the year.

Economic values within the project area are:

- Commonwealth managed fisheries, including: Southern and Eastern Scalefish and Shark Fishery
- Victorian managed fisheries, including: Rock Lobster and Giant Crab
- Commercial shipping activity.

No social or heritage values were identified in the project area including State or Australian Marine Parks.

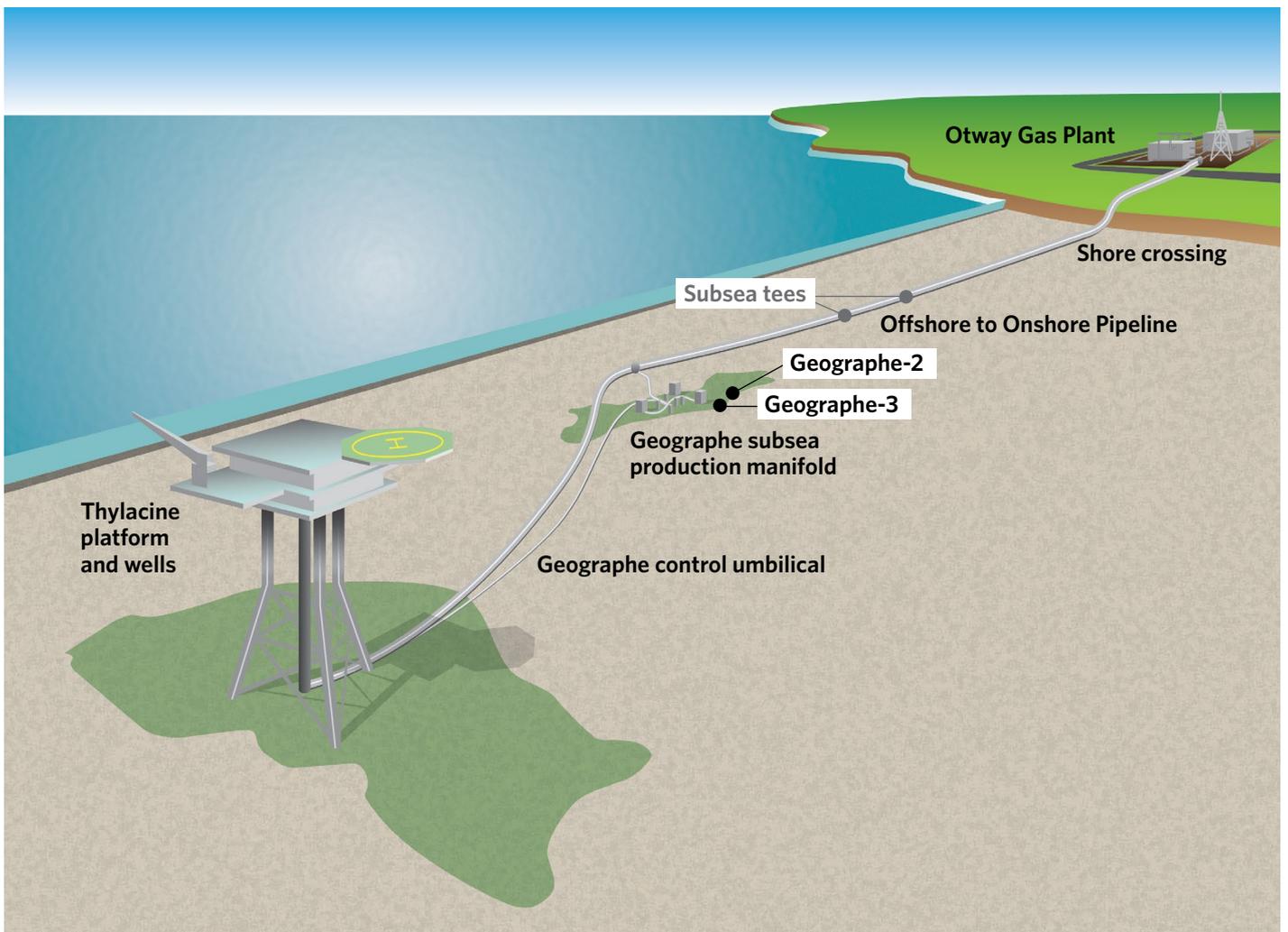
How it all fits together

The Otway Offshore Project will consist of new production wells at the Geographe and Thylacine natural gas fields and new development wells at the Artisan and La Bella fields.

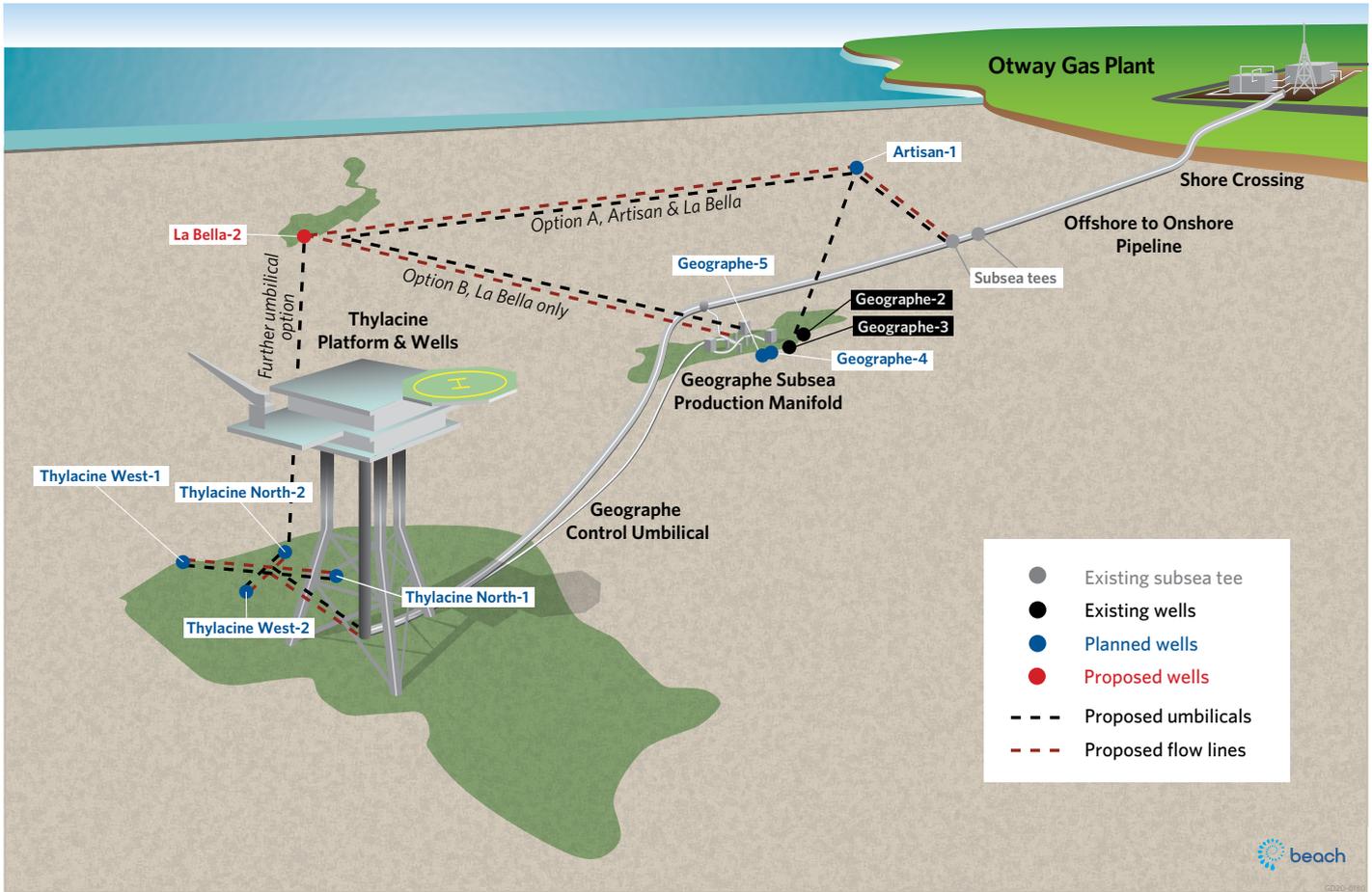
Natural gas will flow from the wells, through a series of new flowlines, tees and manifolds into the existing offshore to onshore pipeline to the Otway Gas Plant. Umbilicals will be used to control the wells and provide chemicals for corrosion management and hydrate prevention.

Existing Wells and Infrastructure

- Thylacine platform with four producing wells
- Two subsea wells at the Geographe field. The Geographe-2 well is a producing well while the Geographe-3 well is plugged and suspended and has never produced
- The Geographe-2 well is connected to a subsea manifold with an umbilical to the Thylacine platform and a flowline to the existing offshore to onshore pipeline
- Offshore to onshore pipeline to the Otway Gas Plant
- Two subsea tees to allow for future tie in of production flowlines.



Planned Wells and Infrastructure



Planned Wells and infrastructure

- Thylacine North-1, Thylacine North-2, Thylacine West-1 and Thylacine West-2 subsea wells and subsea production manifold with a flowline and umbilical to the Thylacine platform
- Geographe-4 and Geographe-5 subsea wells tied-back to the existing Geographe subsea production manifold
- T30/P well location to be determined.

Proposed Wells and infrastructure

- If the Artisan-1 exploration well is successful, a subsea wellhead will be installed and tied back to a tee into the existing offshore to onshore pipeline by a new flexible flowline, and will be controlled from the existing Geographe Subsea Production Manifold by a new umbilical to the well via the tee
- If the La Bella-2 exploration well is successful, a subsea well will be installed and will tie-in to the existing offshore to onshore pipeline through a new flexible flowline will be controlled from a manifold by an umbilical to the well. There are various flowline and umbilical options which will be finalised after assessment of the Artisan-1 well (see map for options).

Recap on Development Activities

Otway Offshore Project development activities will include:

- Further seabed assessments to determine the suitability of the seabed for the drilling operations and installation of infrastructure to connect new production wells in the T30P permit to the existing platform or pipeline
- Inspections and modifications to existing seabed infrastructure to prepare for the new production wells
- Drilling of two exploration wells and up to eight production wells
- Where an exploration well is proven successful it may be converted to a gas producing well. Commercially unviable wells will be plugged and discontinued
- Flowlines to tie-in the new production wells to the existing infrastructure and umbilicals to control the wells
- Plugging and discontinuing of one or more wells in the Geographe and Thylacine fields
- Creation of Petroleum Safety Zones of 500m radius from all wells being drilled
- Creation of permanent Petroleum Safety Zones around subsea well heads and related subsea Infrastructure.

In February 2020, Beach successfully completed the first phase of seabed assessment activities. To view Beach's Environment Plan (EP) for that activity see: www.beachenergy.com.au/vic-otway-basin/

Consultation already undertaken

Consultation has been undertaken to date for the following activities associated with the Otway Offshore Project:

- Seabed Assessment and Drilling Program 2019 - 2021 (April 2019)

- Proposed Drilling Locations (June 2019)
- Seabed Assessment Locations (17 October 2019)
- T/30P seabed assessment (1 November 2019)
- Updates during 2020 of drilling timing changes and Petroleum Safety Zone requirements.

Information sheets associated with these activities, including further information on exclusion zones, managing impacts to commercial fishing and marine life, and maritime safety, are available on the Beach website at: www.beachenergy.com.au/vic-otway-basin. Further information sheets will be developed for future activities and provided to stakeholders as part of the ongoing stakeholder consultation for the project.

Timing

The timeline shows the indicative timeframes of the different activities. Drilling will commence mid-February 2021 with the Artisan exploration well. Start dates and durations of further planned production wells to be drilled will be provided to relevant stakeholders after final plans and regulatory approvals are confirmed. Timings are yet to be defined for the production wells for Artisan-1 (if successful) and La Bella-2 well. Approximate duration of key activities are:

- Seabed assessments:
T/30P: up to 30 days
- Drilling activities for exploration wells:
35 to 55 days per well
- Drilling activities for production wells:
70 to 90 days per well
- Plugging wells: 30 days per well
- Inspections and modifications to existing seabed infrastructure: 30 - 120 days per field.

Project timing



Project History

The Otway Offshore Project development commenced in 2004 by Woodside Petroleum Ltd under a joint venture arrangement and first gas was produced in mid-2007. In March 2010, Origin Energy Resources Ltd commenced operatorship of the joint venture. In January 2018, Beach acquired the Otway Offshore Project assets and is now the operator.

To date, three development phases have been completed to enable production at the Otway Gas Plant:

- Construction of the gas plant
- construction of the Thylacine offshore platform
- the development of the currently producing gas wells.

To maintain natural gas production, further phases to develop additional offshore wells are being planned.

Beach is planning to carry out further activities in the Otway Basin to ensure continued production at the Otway Gas Plant, which will help ensure natural gas supply for Victorian households and businesses.

Questions and Answers

Why are you developing in the Otway Basin?

The unique geological characteristics of the Otway Basin mean it is an abundant source of natural gas which has been produced in the region for many years.

Why are you doing an OPP?

The purpose of an OPP is to identify and assess the potential environmental impacts and risks of the activities conducted over the life of the project, ensuring that environmental impacts and risks will be managed by Beach to an acceptable level. This process allows opportunity for public comment on the project early in the project lifecycle, to assist Beach in identifying and understanding how different stakeholders' functions, interests and activities may be affected by the project activities. Such information shapes measures to reduce any impacts and risks from the project.

Will an exclusion zone exist?

During the seabed assessments and other activities using vessels such as inspections and modifications to existing infrastructure and the installation of new subsea infrastructure and tie-ins, exclusion zones may exist around the vessel for the period of the activity. These exclusion zones will be communicated to stakeholders as per of the activity specific consultation.

During drilling, all vessels are required to observe a 2 km radius cautionary zone around the drilling rig. The cautionary zone is to allow for anchors, mooring chains and wire to be placed within the operational area during the drilling program. Exact locations of mooring chains and anchors will be made available at commencement of drilling each well.

There will also be a Petroleum Safety Zone (PSZ) which is a safety exclusion zone of 500m around the drilling rig for each well. The PSZ is a formal safety exclusion zone and will be communicated via a 'Notice to Mariners' outlining the exclusion zone and timeframe for the drilling activities. To avoid entanglement and safety risks, fishing nets, lines or post should not be placed near seabed assessment areas or drilling exclusion zones. The safety exclusion zone will be monitored by supporting vessels once the drill rig is anchored into position.

PSZs for the well heads installed on the ocean floor will remain in place after drilling. New PSZs will be created for seabed infrastructure required to connect the well heads to the existing thylacine pipeline and offshore platform. Existing and proposed PSZs are shown on the map above.

Beach will apply to NOPSEMA to put the new PSZs in place around the completed production wells and some subsea infrastructure to protect the assets and to ensure fishing equipment and anchoring are not snagged or damaged. The proposed petroleum safety zones are detailed in the map on the previous page and will cover an area of 16.88 km². Further PSZs may be required over flowlines and umbilicals and further advice will be provided to stakeholders if that is the case. Beach is committed to minimising the impact of its activities to other marine users so if these petroleum safety zones will impact on your activities please contact us.

How will any accidental releases of hydrocarbons be managed?

An accidental release of hydrocarbons has a low probability of occurrence. A Well Operations Management Plan must be accepted by NOPSEMA prior to drilling. This plan details how the well will be managed to prevent any accidental releases. An Environment Plan must be accepted by NOPSEMA prior to any of the project activities, including drilling. The Environment Plan must include an Oil Pollution Emergency Plan (OPEP) for managing any accidental hydrocarbon releases.

The OPEP describes the arrangements for responding to and monitoring any release of hydrocarbon and includes:

- The control measures necessary for rapid response
- Response arrangements and capability in place to ensure rapid implementation and provide for the ongoing maintenance of capability
- Response arrangements and capability in place for monitoring oil pollution to inform response activities as well as monitoring the effectiveness of these activities.

These arrangements are based on the worse case release of hydrocarbon associated with the proposed activities to ensure that Beach has the appropriate level of response arrangement and capability.

Want to know more?

For further information and Q&As on exclusion zones, managing impacts to commercial fishing and marine life, and maritime safety on the Otway Offshore Project visit the Beach website at: www.beachenergy.com.au/vic-otway-basin.

Consultation

Beach values stakeholder consultation and feedback. The purpose of consultation is to understand how different stakeholders' functions, interests and activities may be affected by the project activities.

Beach will consider all feedback, including any concerns and objections. Measures will be explored to reduce any impacts and risks, and responses will be provided to stakeholders. All stakeholder feedback, records of consultation, copies of correspondence, including emails will be considered alongside technical and environmental assessments as the OPP and activity specific Environment Plans are prepared for submission, and will be communicated to NOPSEMA as required by legislation.

The OPP will be available for public comment and all Environment Plans will be publicly available on the NOPSEMA website. Stakeholders can register to receive notifications when OPP and Environment Plans are publicly available.

See information on the NOPSEMA website at: www.nopsema.gov.au/information-for-the-community

Contact us

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