

Otway Basin 3D Multi-client Marine Seismic Survey

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TGS is proposing to undertake a three-dimensional (3D) multi-client marine seismic survey (MSS) in the Otway Basin, in Commonwealth waters offshore of Victoria and Tasmania.

In accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009, TGS is preparing an Environment Plan (EP) for the survey for assessment by the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA).

SURVEY OVERVIEW

The operational area (OA) is located 48 km south of Portland, Victoria and 38 km west of King Island, with water depths ranging predominantly between 510 m to 5,650 m (Figure 1). Planned seismic acquisition will occur within the acquisition area (AA) over a four-year period in several phases with a maximum of 200 days within any single year. The Otway 3D MSS survey is likely to commence late 2027, however precise timing of survey commencement is subject to NOPSEMA’s acceptance of the environment plan. Table 1 over the page provides a summary of the Otway Basin 3D Multi-client MSS.

The AA is the smaller ‘internal’ area and the area where seismic data can be acquired. The OA is the larger area and where all other survey activities can take place, e.g., vessel manoeuvring, equipment deployment and maintenance etc. Data will not be acquired outside of the AA.

IMPORTANT – The total AA applied for within the EP is 45,000 km² however TGS has committed to acquire data over a maximum of 15,000 km² for the project duration with a maximum of 8,000 km² in any single year. The larger area provides flexibility for control measures, weather conditions and resourcing.

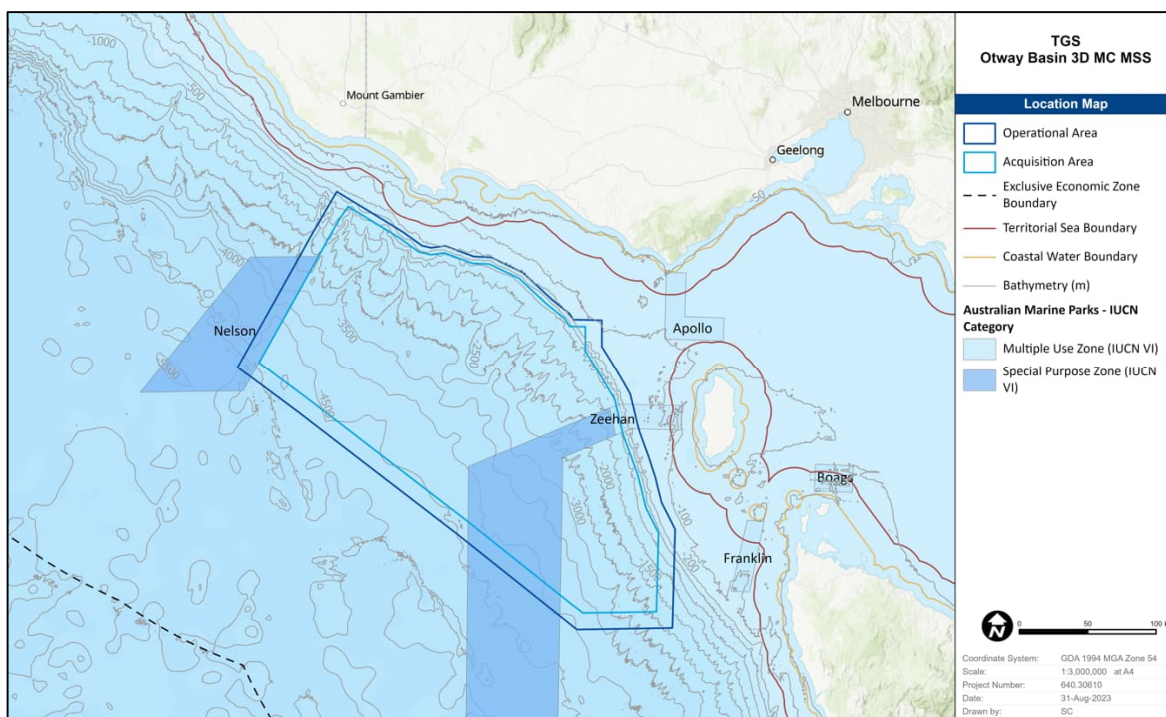


Figure 1 – Location map of TGS Otway 3D marine seismic survey

Table 1 – Otway Basin 3D Multi-client MSS Summary

Proposed survey duration	Data will be acquired within a total of 400 days over 4 years, however maximum of 200 days per year. Allows flexibility to accommodate adverse weather, equipment maintenance etc.
Timing	Between late 2023 and late 2027 (pending regulatory approvals, environmental sensitivities and vessel availability).
Survey area size	Maximum area where data will be acquired over the project duration is 15,000 km ² and 8,000 km ² in any single year. The EP application OA is 55,000 km ² and AA is 45,000 km ² to allow to provide flexibility for control measures, weather conditions and resourcing.
Water depth	Predominantly 510 m to 5,650 m, reducing to approximately 115 m for a single 2D tie-line within a small section along the north-eastern boundary.
Vessels	One purpose-built seismic survey vessel, plus additional support vessels. Vessel details have not yet been confirmed.
Acoustic array	Acoustic source 3,500 in ³ with maximum of 14 streamers up to 9 km length.
Survey vessel speed	Approximately 4 – 5 knots (7.5 – 9.5 km/hour).
Dimensions of towed equipment	Approximately 8 – 10 km length and approximately 800 m – 1.6 km wide.
Area of avoidance	3 nautical miles requested around the survey vessel and streamers.
Proximity to key locations	Portland (VIC) – 48 km, Warrnambool (VIC) – 61 km, Arthur River (TAS) – 85 km, King Island (TAS) – 39 km and Robe (SA) – 64 km.

PROPOSED ACTIVITY

This proposal is for marine seismic surveying only and does not include drilling or extraction. Marine seismic surveying is used to improve the understanding of subsurface geology in marine environments for prospective resource companies to review. During marine seismic surveys, seismic data is acquired using a purpose-built seismic survey vessel towing an acoustic source and multiple cables of hydrophones, also known as streamers. Streamers are towed with a tail buoy, radar reflectors and lights to mark the end of the array. The streamers will be up to 9 km long to adequately record the necessary information. Both the source and streamers are towed beneath the surface of the water (Figure 2). Acoustic energy from the acoustic source is detected by the streamers and recorded on board the vessel. The recorded signals are then processed to provide information about geological formations below the seabed.

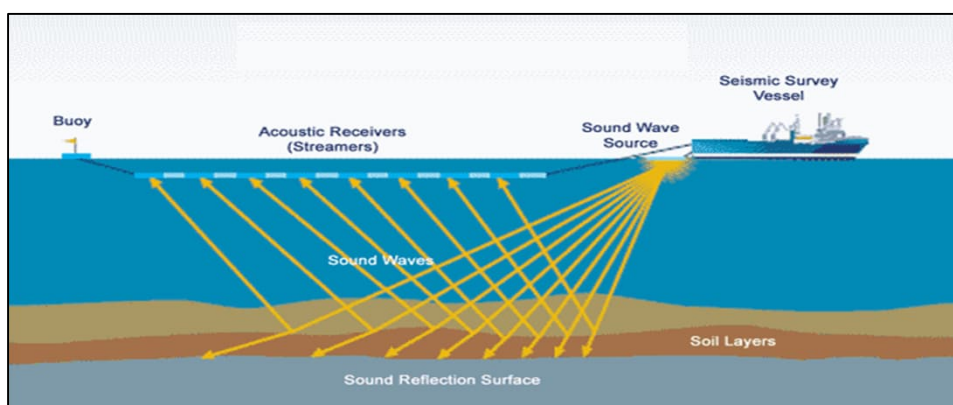


Figure 2 – Schematic illustrating a typical marine seismic survey

When recording the data, the seismic vessel traverses the survey area along a series of pre-determined sail lines at a speed of approximately 4 – 5 knots (7.5 – 9.5 km/hr). The level of acoustic emissions can be adjusted to provide low-power 'soft start' or 'fauna alert' procedures, at any point during the survey or maintenance operations. Support vessels will work with the seismic vessel to assist in communicating with other vessels that have entered the area of operations and to support the overall operations, such as providing food and supplies.

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ENVIRONMENTAL PLANNING AND MANAGEMENT

TGS has a reputation for implementing high standards of environmental protection in environmentally sensitive areas to mitigate and minimise impacts on the surrounding marine environment and relevant persons. TGS intends to carry out their proposed survey in a manner that does not interfere with fishing to a greater extent than is necessary. However, while many fishing activities will be avoided, TGS acknowledges that there is the potential for the survey to interact with fishing activities.

TGS has undertaken a thorough analysis and characterization of environmental values and sensitivities in and around the OA, such as the key commercial fish species, key fishing areas and their existing physical and biological environment, historical spatial catch data and discussions with commercial fishers about their fishing experiences and observations and their concerns regarding the survey. TGS then considers the potential impacts on each of those values and sensitivities for each of the relevant activities associated with the proposed survey. For example, activities such as acoustic disturbance on the marine environment, and associated hydrocarbon spill from a vessel collision. TGS then identifies a suite of control measures to avoid or minimise the impacts and risks to as low as reasonably practicable (ALARP) and acceptable levels in accordance with environmental regulatory requirements.

Examples of control measures that TGS will implement to avoid and mitigate impacts and risks to commercial fishing include exclusion zones and buffers for certain fishing or research areas, limiting acquisition in shallow water depths, daily distribution of 48 hour 'lookahead' plans, clear identification of survey equipment, maintaining constant communication with all relevant marine users and implementing a commercial fishing compensation protocol for those whose commercial fishing operations are impacted by the survey.

FUEL SPILL MITIGATION AND RESPONSE

As part of the environmental planning and approval process, TGS has conducted a modelling study to identify the area of potential impact from an accidental fuel spill from a seismic vessel fuel tank caused by a collision with another vessel. This modelling produced a baseline environment that may be affected (EMBA) (Figure 3) to identify measures for preventing a spill occurring; spill response planning and identifying whom to notify should a spill occur.

It is important to note, there is an extremely low likelihood of this type of event occurring and has never occurred in Australian waters. Additionally, the modelling does not consider the strict control measures TGS has incorporated to prevent this type of event from occurring in the first place, or to minimise the extent of any impact. These include our fuel oil spill response planning, training and preparation.

Modern seismic vessels mitigate the risk of fuel spills via physical design features such as double hull configuration and having multiple compartmentalized fuel tanks of reduced size instead of one large fuel tank. The vessel that will be contracted for this project will have these features.

The seismic vessel provider must also comply with TGS' rigorous quality, health, safety and environment standards and commitments made within the EP which forms part of the regulatory approval process.

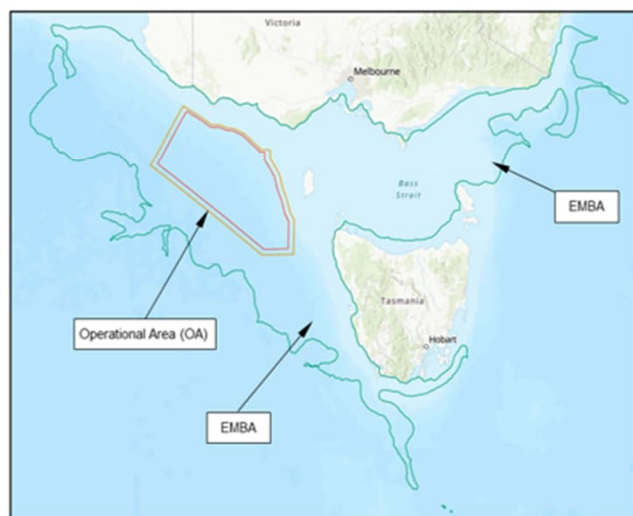


Figure 3 – Environment that may be affected (EMBA)

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WORKING WITH COMMERCIAL FISHERS

WE WANT TO HEAR FROM YOU

We are contacting you because our assessment of values and sensitivities show there may be overlap with areas that are important to you. Therefore, we would like to ensure we know about any functions, interests or activities that may be affected by our proposed marine seismic survey and what these affects are. This helps inform our environmental management and survey planning, including identifying measures to avoid or minimise impacts to your functions, interests or activities and the marine environment.

OUR COMMITMENT TO YOU

TGS is committed to ensuring relevant persons receive sufficient information and a reasonable time to consult TGS about their proposed survey. Because TGS must compile a very large amount of technical information within the EP to address the relevant legislative requirements, the EP is a significant size and can be challenging to understand. Therefore, please let us know if you would like more information about a particular aspect of our survey. Additionally, we would welcome a meeting to discuss any specific concerns or queries you may have.

YOUR INFORMATION AND PRIVACY

If you would like to comment on the survey, request additional information, or meet with us to discuss the survey, please contact us as soon as possible. Please note, all communications with TGS will be logged, assessed and incorporated into the EP. In accordance with regulatory requirements, full copies of correspondence with relevant persons will be provided to NOPSEMA. However, this information and any other information that you determine as sensitive will not be made public. Relevant persons are advised to inform TGS if any information provided is confidential and not to be published in the EP.

TGS would like to acknowledge the Traditional Custodians of the land and sea country in which the Otway Marine Seismic Survey will be carried out. We recognise their continuing connection to the land, waters and culture. We pay our respects to their Elders past, present and emerging.

If you would like to provide comment or request further information on the Otway Basin 3D Multi-client MSS, please contact TGS:

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