

TGS is proposing to undertake a three-dimensional (3D) marine seismic survey (MSS) in the Otway Basin, in Commonwealth waters offshore of Victoria and Tasmania (Figure 1) commencing Q1 2024. TGS is undertaking this MSS to gather information about the geology and natural gas resources in the area.

## What is marine seismic surveying?

Marine seismic surveying is used to improve the understanding of marine subsurface geology. During MSS, data is acquired using a purpose-built seismic survey vessel towing an acoustic source and multiple cables of hydrophones, also known as 'acoustic receivers' or 'streamers' (see Figure 2). Streamers can be up to 10 km long and are towed below the water surface with a tail buoy, radar reflectors and lights to mark the end of the array.

The acoustic source is also towed below the water surface and directs acoustic energy downwards towards the sea floor. The acoustic energy bounces off the sea floor towards the water surface depending on the different underlying geology. The streamers receive the reflected sound waves and transmit the information back to the seismic vessel for recording. The recorded signals are then processed to provide information about geological formations below the seabed. The level of acoustic emissions are slowly ramped up when commencing data acquisition and are adjusted to accommodate environmental sensitivities, such as fauna sightings.

When recording the data, the seismic vessel crosses 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).

Support vessels work with the seismic vessel to assist the overall MSS operations, such as communicating with other marine users, supplementing marine fauna observation duties and providing food and other essential resources.

## Survey overview

The acquisition area (AA) is the smaller 'internal' area and the area where seismic data can be acquired using the acoustic source (Figure 3). The operational area (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 be not be acquired outside of the AA. The closest distance between the OA and land is 38 km along the west coast of King Island, Tasmania, with water depths ranging throughout the OA between 510 m to 5,650 m, excluding a single tie-in line with potential minimum depth of 115 m for less than one day duration. Seismic acquisition will commence once regulatory approvals are received in several phases with a maximum of 200 days within any single year.

**IMPORTANT** – The total AA TGS has specified to carry out the MSS is 45,000 km<sup>2</sup>. However, TGS has committed to acquire data over a maximum of 15,000 km<sup>2</sup> (one third of the AA size) for the entire project duration with a maximum of 8,000 km<sup>2</sup> in any single year. More MSS details are summarised within Table 1 over the page.

## Current proposed activity status

TGS has prepared an Environment Plan (EP) for their proposed MSS in accordance with the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009*. The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) is currently assessing the EP, which can be viewed on their website here: [https://info.nopsema.gov.au/environment\\_plans/617/show\\_public](https://info.nopsema.gov.au/environment_plans/617/show_public).

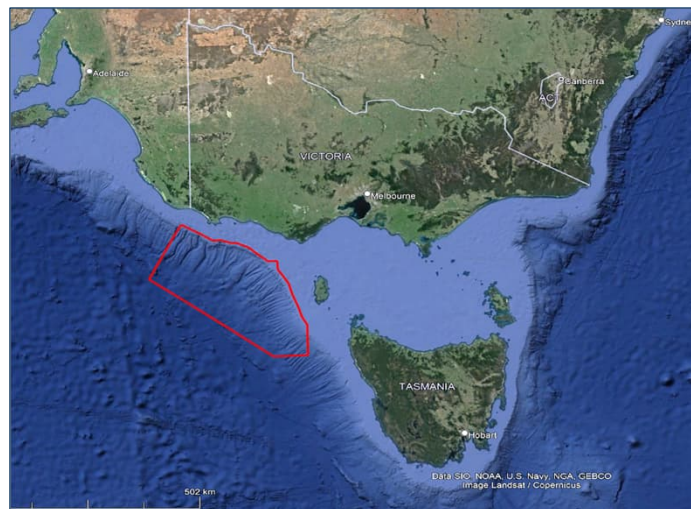


Figure 1 – marine seismic survey location

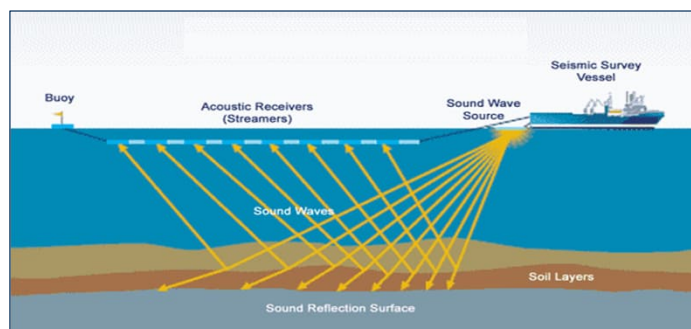


Figure 2 – Schematic illustrating a typical marine seismic survey

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

Proposed survey duration	The survey duration specified is a maximum 400 days over a 4-year period, with a maximum of 200 days within any single year. However, this period is highly conservative and includes time when TGS will not be acquiring data (i.e., utilising the acoustic source), such as during equipment deployment, vessel maneuvering, adverse weather conditions, and accommodating environmental sensitivities.
Timing	Between 2024 and late 2027 (pending regulatory approvals, environmental sensitivities and vessel availability).
Survey area size	The EP specifies an OA of 55,000 km <sup>2</sup> and AA of 45,000 km <sup>2</sup> . However, data will <u>not</u> be acquired over the entire AA. Maximum area where data will be acquired over the project duration is 15,000 km <sup>2</sup> (one third of the AA) and 8,000 km <sup>2</sup> in any single year.
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	Maximum acoustic source 3,500 in <sup>3</sup> 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.

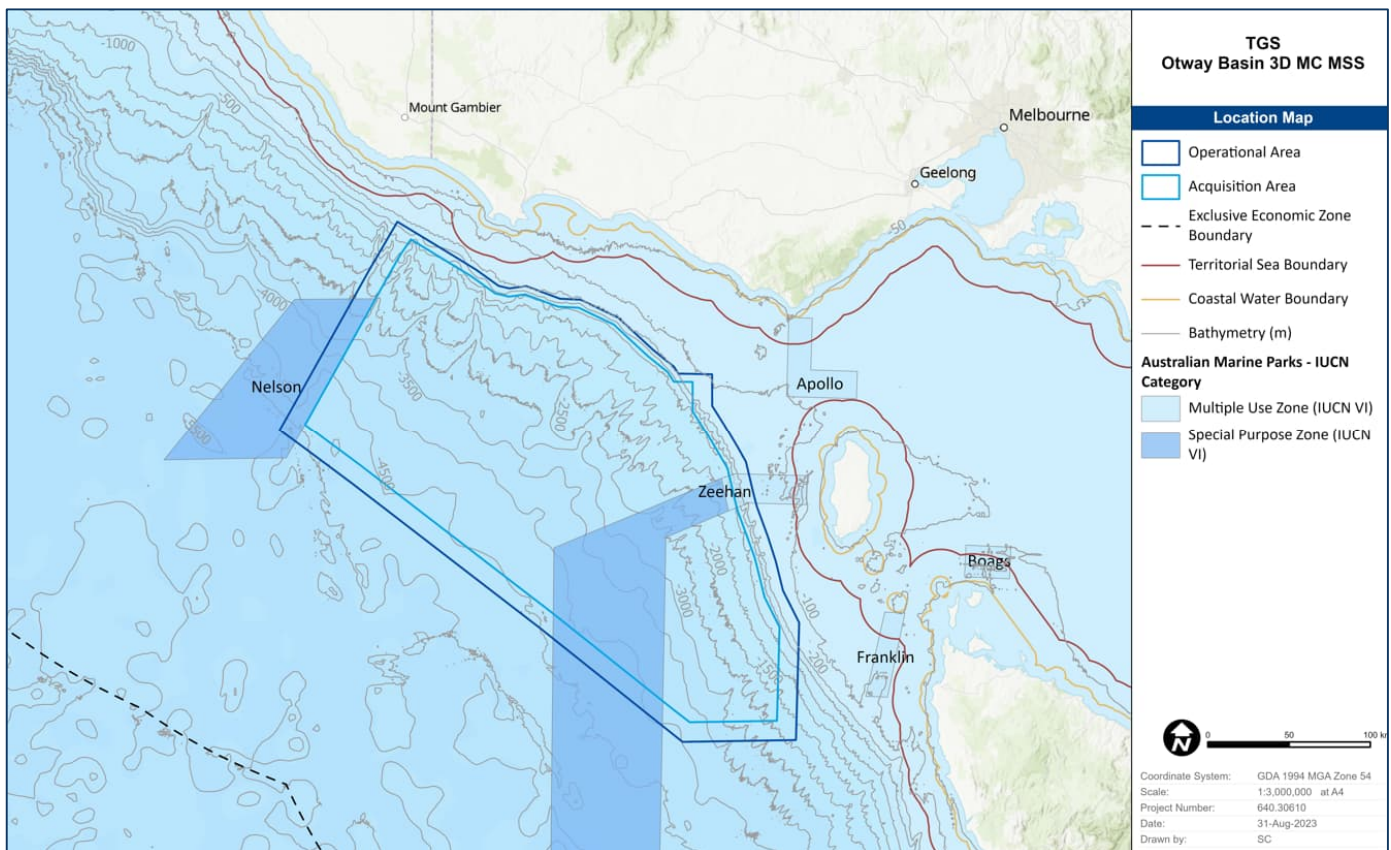


Figure 3 – Location map of TGS Otway Basin 3D Marine Seismic Survey

TGS would like to acknowledge the Traditional Custodians of the land and sea country in which the Otway Basin 3D 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.

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