

# Calico Survey



Project Summary | May 2023

Beach Energy will be conducting an industry leading seismic survey named the Calico Survey in early 2025.

The Calico Survey will be conducted across both land and ocean to create a continuous image of the subsurface geological structures within permit areas around Port Campbell and Peterborough.

The Calico Survey will be conducted between Nirranda South to the west and approximately 6km east of Port Campbell, out to 3 nautical miles offshore and approximately 4km inland.

Advanced seismic surveying technologies will be used, in accordance with strict regulatory approval conditions and there will be minimal environmental impacts.

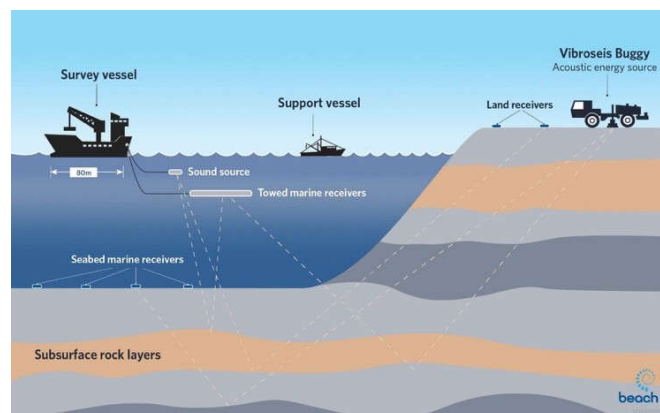
The Calico Survey is being planned to take place between February and May 2025. Detailed project plans and timings will be finalised after Beach has received regulatory and internal approvals.

Beach is committed to keeping local community members and key stakeholders informed and will provide opportunities for questions and feedback.

## Survey Methodology

The Calico Survey will use a vibration source on the land and an acoustic energy source much lower than traditional deep ocean seismic surveys in the water that travels several kilometres below the surface. The energy reflects back like echoes off the different geological layers.

The returning energy is recorded as data signals by receivers that have been placed on the land, seabed and towed by a survey vessel.



Example of how the Calico survey will operate. Not to scale.

After the survey is completed, the data will be processed and transformed into a 3D image of the subsurface geology to identify the different geological layers and presence of hydrocarbons. This process takes around 12 months, and the information will then be used to plan future exploration and development activities to continue meeting the natural gas demands of Victorian homes and businesses.

## Marine Survey

A vessel (approximately 80m long) will tow a set of chambers that release compressed air to create pulses of acoustic energy into the water, travelling through rock layers beneath the seabed. These pulses are detected by marine receiver 'Cables', up to 200m long, attached to the rear of the vessel and submerged between 5m and 15m.

The acoustic pulses will be recorded by seabed receivers approximately 30cm diameter by 10cm high. They are battery-operated, fully sealed units that operate safely in the marine environment. Using vessels approximately 30m long (similar to fishing vessels) the marine receivers will be placed on the seabed in a grid 200m to 400m apart.

The advanced design of the receivers includes remote controls used to release floats that return each receiver to the surface when the survey is complete, for the support vessel to collect them.



Typical marine receiver.

### Land Survey

Small vibrations will be created by a *vibroseis buggy*, a purpose-built vehicle for seismic surveys, approximately 10m long, fitted with hydraulics that lowers a metal plate onto the earth to create vibrations for about 10 seconds (similar to a compactor on a building site) and repeat the process every 5 to 10m. Around 5 vibroseis buggies will operate about 1km apart. If they need to be used off existing farm tracks the extra wide tyres minimise land compaction.



Typical vibroseis buggy.

On paddocks and roadsides, highly sensitive receivers will be placed in a grid pattern around 50m apart, giving broad coverage to record the returning signals. The land receivers are small (approximately 10cm<sup>2</sup>), battery-operated units that operate safely in any environment and weather conditions. Receivers will be buried so the top is just below the surface, to minimise farming disruptions and curiosity from animals. Placement of the receivers in areas accessible to the public will be carefully planned to ensure they do not impact usual foot traffic or the existing environment.

### Maritime safety

The survey vessels will operate in accordance with standards regulated by Maritime Safety Victoria and the Australian Maritime Safety Authority (AMSA). Other vessels in the area will be required to



Typical land receiver.

observe temporary safety exclusion zones (as specified in a Notice to Mariners) around the survey vessels to reduce any safety risks from entanglement of survey equipment and fishing vessels and gear. Beach will consult directly with commercial fishers in the area for avoidance of impacts on each other's activities.

### Community matters

Most activities will be on private lands. Some activities will occur on roadsides and may require traffic management, but no road closures.

There will be minimal impacts to recreational activities including swimming, snorkeling and surfing, as the survey vessels will not operate in water depths of less than 5 metres.

The offshore seismic source will not operate between the hours of 6am and 6pm, and the survey will not take place at surf breaks.

The underwater sound levels will be much lower than traditional deep ocean seismic surveys. Nevertheless, a sound impact study will determine recommended safe distances for SCUBA diving from the survey.

Signs will be placed in public areas and community advisors will be available to answer any questions during the survey.

## We welcome questions & feedback

P: 1800 797011

E: [community@beachenergy.com.au](mailto:community@beachenergy.com.au)

[beachenergy.com.au](http://beachenergy.com.au)

