



Fact Sheet

Proposal by TGS/SLB to seismic blast the Otway Basin

Overview

Multinational companies TGS and SLB (formerly Schlumberger) are seeking approval to conduct 3D seismic blasting in a massive area of the Otway Basin, offshore from Tasmania, South Australia and Victoria, to detect fossil fuels. Seismic blasting is known to maim and kill marine animals and displace fisheries. The proposed area is of critical importance to endangered marine life, commercial fisheries, and ecosystems associated with the Bonney Upwelling. Any reserves discovered during the blasting would take decades to come online, by which time we need to have moved away from fossil fuels. This begs the question of why the blasting is being done in the first place.

What is seismic blasting?

Euphemistically referred to by the industry as seismic testing or surveying, seismic blasting is the first step in offshore oil and gas exploration, and is used to locate fossil fuels under the seabed. Survey ships tow an array of airguns and receivers behind their stern, covering an area of ocean in a grid pattern. The airguns emit blasts that send a deafening soundwave deep into the ocean floor; this bounces back up to the receivers and identifies potential fossil fuel reserves. The blasts are up to 250 decibels (that's louder than the Hiroshima bomb) and go off every 10 seconds, 24 hours a day, 7 days a week, often for months on end.

Because sound travels significantly further and faster under water than through air, the blasts can be heard in the ocean thousands of kilometres away. Moreover, the scale used to

measure decibels is not linear, but logarithmic, so that 20 decibels, for example, are ten times the intensity of 10 decibels; 30 decibels are a hundred times more intense than 10 decibels, and so on. A 250-decibel seismic blast is one million times more intense than the loudest whale calls.¹

Three-dimensional (3D) seismic blasting has a much greater impact on marine life than does two-dimensional blasting (2D). Not only are larger airgun blasts emitted, but these 3D blasts travel out on a broader angle, and the transect lines are spaced closer together to ensure there's overlap and the coverage of the sea floor is thorough. Marine creatures that can't move out of the way, or have impaired movement as a result of the blasts, can therefore be impacted multiple times during 3D seismic blasting.

The TGS/SLB Proposal

The companies are seeking a permit that would allow them to commence blasting on 1 October 2023. Their project is designed to service multiple clients, and to provide geological information and interpretation to companies holding existing exploration titles. This data would be the property of SLB/TGS and would be sold to prospective offshore developers. Much of the area in this proposed site was previously 2D-seismic blasted by SLB in 2019/20, and the site also encompasses areas that have been blasted in the last 5–10 years, meaning some parts of our southern oceans will be repeatedly impacted by seismic blasting.

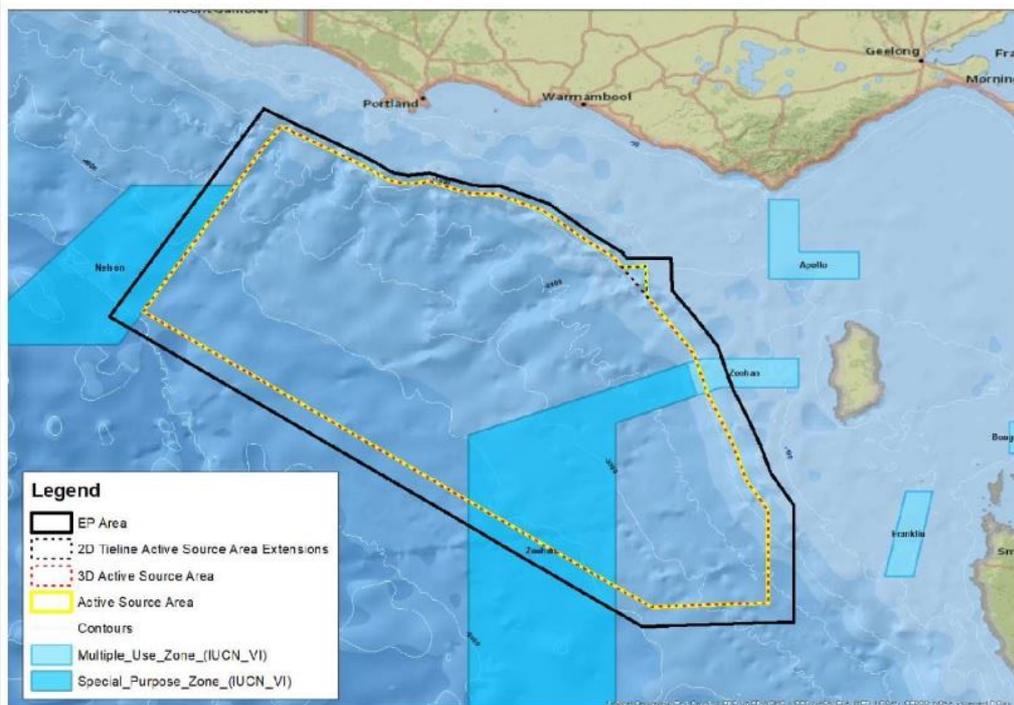


Figure 2 – Location of the proposed Otway Basin 3D Multi-client MSS

Environmental Significance of the Area

The area proposed for blasting extends through the eastern side of the Great Australian Bight (as defined by the International Hydrographic Organization), a unique environment that is home to a diversity of marine species, 85% of which are found nowhere else in the world. The proposed blasting area includes the environmentally significant Bonney Upwelling, which extends from Portland, Victoria to the ocean south-east of South Australia's Kangaroo Island. Upwellings are the powerhouse of ocean nutrient cycling and assist the dispersion of larvae and juvenile organisms. Although upwelling regions cover just one percent of the world's ocean surface, they are responsible for marine health and biodiversity worldwide. The Bonney Upwelling, part of the Great Southern Australian Coastal Upwelling System, is the largest upwelling system in Australia and is a critical phenomenon for many species, including the endangered blue whale and the pygmy blue whale.²

The proposed area also intercepts with the Zeehan Australian Marine Park, located on the west coast of Tasmania, where canyons are responsible for upwellings that support fish nurseries, seabirds, white sharks, and blue and humpback whales.³

What the Science Says About Seismic Blasting

There is an acute paucity of research on the impacts of seismic blasting. The very few studies that have been done were primarily limited to commercial fisheries and ocean mammals. It is logistically extremely difficult, and costly, to conduct controlled studies in offshore seismic blasting areas, and most studies have either been done in a laboratory environment, or funded directly by offshore gas and oil companies.

What we do know is that blasting can damage and kill zooplankton for a radius of at least 1.2 kilometres with every blast. Zooplankton are the foundation of life in the ocean and include the juvenile stages and larvae of many marine species. Any impact to zooplankton communities can have huge impacts on whole ecosystems. A study of the effects of seismic blasting on zooplankton published in 2017 found a twofold to threefold increase in the mortality of those zooplankton exposed to seismic blasting, compared with those not exposed.⁴

It is also known that seismic blasting has wiped out entire scallop beds in the Bass Strait (which neighbours the Great Australian Bight), and that it damages the sensory organs of rock lobsters that enable them to escape predators.⁵ According to research undertaken in Lakes Entrance, Victoria immediately after seismic blasting was conducted in the area in 2020, fisheries suffered a reduction in whiting catches of 99.5%, and a reduction in flathead catches of 71%.⁶ Seismic blasts impact the breeding, feeding and migration of whales, making them

vulnerable to errors in navigation and to predation. There is anecdotal evidence that it displaces fisheries, and impacts both commercial and recreational tuna fishing. These stocks may take many years to recover.

Following seismic blasting in Bass Strait in 2010, scallop fishermen in the area reported large losses in catches. At the end of the 2011 season, the scallop industry attributed a loss of 24,000 tonnes (worth \$70 million) directly to the impact of the blasting. This prompted research by the Fisheries Research and Development Corporation on both scallops and southern rock lobsters. The research found that scallops were severely impacted by seismic blasting, with the rate of scallop mortality directly related to seismic exposure. Over a four-month period the health of scallops in the region declined, with no recovery.⁷

A submission by CSIRO to a 2019 senate inquiry into the impacts of seismic testing expressed concern that a balance has not been achieved between conserving the health and natural capital of our oceans and the economic benefits of resource extraction. It was further noted that this has the potential to result in a lack of confidence in the management and regulation of the industry.⁸

The Permit Approval Process

This is shadowy, to say the least. The type of blasting proposed by TGS/SLB requires a Special Prospecting Authority (SPA). This permit is managed by the National Offshore Petroleum Titles Administrator (NOPTA), a branch within the Department of Industry, Science and Resources. SPAs sit outside the annual Offshore Acreage Release; they're a direct arrangement between oilfield-services companies and NOPTA. Whereas the Acreage Releases require the approval of the Joint Authority (comprising the federal resources minister and, in some states, the relevant state minister, depending on individual states' arrangements with the federal department), an SPA requires *only* the approval of NOPTA. Thus a decision with far-reaching consequences for all Australians is in the hands of a bureaucrat, not an elected member of government.

No blasting can commence until the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) have approved the companies' Environment Plan. SLB is currently under investigation by NOPSEMA for a possibly criminal breach of a limitation placed on the 2D seismic blasting the company conducted in the Otway Basin in 2019/20. OCEAN has been informed by NOPSEMA that the outcome of this investigation will have no bearing on the decision to approve or not approve the current SPA SLB/TGS have applied for.

The SLB corporation

During its 2019 seismic blasting of the Otway Basin, the SLB flagship the *Nordic Explorer* blasted over a dump site for WWI and WWII chemical and artillery weapons. It remains unknown, despite inquiries, what impact these blasts had on the canisters of chemicals.

In late 2022 the Schlumberger corporation rebranded itself as SLB. It is one of the largest companies, in any industry, on the planet, and one of the most secretive. In April 2015, it was handed the biggest corporate criminal fine in US history, along with three years' corporate probation, for violations of sanctions in Iran and Sudan.⁹ These facts indicate that SLB is not a fit company to be seismic blasting in Australian waters.

Sources

1. 'What is seismic blasting?', Dr Cat Dorey, <https://www.marineconservation.org.au/what-is-seismic-blasting/> (accessed August 2022).
2. 'The Bonney Upwelling', <<http://bluewhalestudy.org/the-bonney-upwelling/>> (accessed August 2022).
3. ConocoPhillips, 2020, 'What We Do, Otway Basin', ConocoPhillips Australia, <<https://www.conocophillips.com.au/what-we-do/otway-basin/>> (accessed June 2021).
4. McCauley, R, Day, R, Swadling, K, Fitzgibbon, Q, Watson, R and Semmens, J, 2017, 'Widely used marine seismic survey air gun operations negatively impact zooplankton', *Nature Ecology & Evolution*, vol. 1(7), <<http://Widely used marine seismic survey air gun operations negatively impact zooplankton>> (accessed June 2021).
5. 'Lobster organs and reflexes damaged by marine seismic surveys', University of Tasmania, Institute for Marine & Antarctic Studies, <<https://www.imas.utas.edu.au/news/news-items/lobster-organs-and-reflexes-damaged-by-marineseismic-surveys>> (accessed August 2023).
6. 'Seismic surveying reduces whiting catch rate by 99.5 per cent, research finds', Rio Davis, <<https://amp.abc.net.au/article/12502930>>.
7. Submission to the senate inquiry: Impact of seismic testing on fisheries and the marine environment. 2019. IMAS Submission 34. Hobart: IMAS [online], <https://www.aph.gov.au/Parliamentary_Business/Committees/Senate/Environment_and_Communications/Seismic_Testing> (accessed June 2021).
8. Submission to the senate inquiry: Impact of seismic testing on fisheries and the marine environment. 2019. CSIRO Submission 19/684. Hobart: CSIRO Oceans and Atmosphere. Available at <https://www.aph.gov.au/Parliamentary_Business/Committees/Senate/Environment_and_Communications/Seismic_Testing> (accessed June 2021).
9. *The Guardian*, 19 May 2015.