

## CGG Gippsland Marine Seismic Survey

### 1. Purpose

This report describes NOPSEMA's consideration of key matters in the assessment of the Gippsland Multi-client 3D Marine Seismic Survey environment plan.

This report should be considered in the context of the published *Gippsland Marine Seismic Survey Environment Plan* (EP).

### 2. Background

CGG Services (Australia) Pty Ltd (CGG) is proposing to undertake the Gippsland Marine Seismic Survey (the activity) in the Gippsland Basin within the periods 1 March – 31 July 2019, with the contingency that if the survey is not completed within the 2019 season further activity may occur during the period 1 January – 31 July 2020. In order to gain acceptance to undertake the activity, CGG submitted the Gippsland Marine Seismic Survey Environment Plan (EP) under the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009* (Environment Regulations).

Due to the conservation values and sensitivities associated with this region, the associated socio-economic features and the level of public interest, NOPSEMA is providing this report that outlines how NOPSEMA has considered key matters raised by stakeholders during its assessment of this EP.

The EP was initially submitted to NOPSEMA on 7 September 2018 and was accepted on 25 February 2019 at the conclusion of the assessment. During the assessment NOPSEMA requested that the EP be modified, and also requested further written information from CGG.

In deciding to accept the EP, NOPSEMA was reasonably satisfied that criteria for acceptance specified in the Environment Regulations had been met. In making this decision, NOPSEMA took into account:

- the Environment Regulations;
- NOPSEMA's Assessment Policy (PL0050), Environment Plan Assessment Policy (PL1347), and Environment Plan Decision Making Guidelines (GL1721);
- the CGG Gippsland Marine Seismic Survey Environment Plan (EP);
- relevant published, peer reviewed scientific literature;
- the information raised by relevant persons, government departments and agencies;
- relevant plans of management and threatened species recovery plans developed under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and relevant guidance published on the Department of the Environment and Energy website.

### 3. Key matters

A range of matters of particular interest to stakeholders were raised, reflecting the important values and sensitivities of the region. These have been summarised as:

- Potential impacts from the survey to stocks of commercially important fish species and their food webs and the associated impacts on the fisheries and fisheries associated businesses.

- Potential impacts from the survey on other marine users, including displacement of fishers, and interaction with commercial shipping and existing oil and gas activities.
- Potential impacts from the survey on humpback whales (*Megaptera novaeangliae*), blue whales (*Balaenoptera musculus*) and southern right whales (*Eubalaena australis*).
- Whether the consultation undertaken by CGG in the course of preparing the EP has been in accordance with regulatory requirements and whether arrangements in place for ongoing consultation are appropriate.

This report does not provide an exhaustive record of all matters relevant to environmental management and decision-making for this EP. Readers should also refer to relevant sections of the EP particularly where these references are provided. A copy of the EP is published at <https://www.nopsema.gov.au/environmental-management/activity-status-and-summaries/details/459>.

For further information about NOPSEMA's assessment contact: [environment@nopsema.gov.au](mailto:environment@nopsema.gov.au).

## How NOPSEMA took into account key matters raised by stakeholders

| What was raised:                                                                                                                                                                                                                                                                        | What CGG are doing:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          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| <i>Displacement of commercial fishers</i>                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              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| <p><b>There would be an unacceptable impact on fishing operations.</b></p> <p>Claims were raised that there would be displacement of commercial fishers as a result of the seismic activity which could reduce catch resulting in loss of income to fishing and related businesses.</p> | <p>CGG confirmed with relevant persons that there would be no ban on commercial fishing within the survey area during the activity, beyond a safety exclusion zone in the area immediately around the survey vessel and streamers. The survey vessels will only occupy a small part of the survey area at any one time, and the rest of the area will be available for fishing operations.</p> <p>To identify the location of fishing grounds and the seasonality of the fishing activity over these areas, CGG accessed the available information from State and Commonwealth fisheries authorities. This information was supplemented by a report, commissioned from the South East Trawl Fishing Industry Association (SETFIA), on the catch and effort data for the fisheries operating in the area. This information has been included in the EP (see EP section 6).</p> <p>The results of the impact assessment and response to feedback from relevant persons resulted in CGG adopting an environmental performance outcome that requires activities to be carried out in a manner that does not interfere with the navigation of fishing to a greater extent than is necessary for the reasonable exercise of the rights and performance of duties.</p> <p>CGG have adopted a range of measures to ensure this level of performance will be met (see table 6.25 of the EP). Of particular relevance to addressing this claim, CGG made modification to the survey design and timing. CGG adjusted the survey period to avoid acquisition in November to December to address concerns about seafood sales over the Christmas period. Subsequently the timing of earliest commencement in 2019 has been restricted to 1 March and activity will only occur in the period January to July 2020 if the survey is not completed in 2019. The survey area has also been reduced to limit overlap with areas identified as important to fisheries, including a nearshore scallop bed and some of the fishing habitat targeted by Danish seine fishers.</p> <p>CGG divided the survey area into zones, within which the seismic vessel will operate for no longer than one month, allowing fishers to plan their operations ahead, and limiting the exposure of fish within the zone to less than one month. Following consultation CGG reduced the number of zones from the original 7 to 5 while maintaining the commitment to limit the expose within each zone to one month.</p> <p>CGG established a proactive, formal arrangement to extend ongoing consultation with fishery representatives through the formation and ongoing support of a Scientific Advisory Committee (SAC) to advise CGG on the concerns of fishing stakeholders and identify actions required of CGG to address key concerns raised.</p> | <p>NOPSEMA recognises the matter raised and agrees that there is the potential for the activity to cause displacement of fishers, which if not appropriately managed, could have a materially adverse impact on fishing and associated industries.</p> <p>In making a decision regarding this matter, NOPSEMA took into account the content of CGG's EP; NOPSEMA's Decision Making Guidelines (GL1721); scientific literature; and the views of relevant persons, as documented in the consultation report. These relevant persons included; the Australian Fisheries Management Authority; Victorian Fisheries Authority; as well as the fishery representative organisations Seafood Industry Victoria (SIV), South East Trawl Fishery Association (SETFIA), Southern Shark Industry Alliance (SSIA); and the Lakes Entrance Fisheries Co-op (LEFCOL).</p> <p>NOPSEMA required that the evaluation of impacts from underwater sound on fisheries sensitivities was well supported by a thorough understanding of the fisheries in the survey area, informed by input from fisheries relevant persons (stakeholders). Further, NOPSEMA required that CGG demonstrate that sufficient effort had been given to exploring control measures to address relevant person claims. This included consideration of alternative survey design, such as adjusting the survey location and timing, changing the period of data acquisition to allow further time for recovery, and other initiatives. During NOPSEMA's assessment of the EP, significant changes were made by CGG to the survey design proposed and addition of arrangements to address claims by relevant persons. This included the establishment of the Scientific Advisory Committee (SAC), the commitment to undertake two research projects, and the development of a compensation scheme in the form of a Fisheries Displacement Mitigation Plan.</p> <p>NOPSEMA recognises that the formation of the SAC is a useful initiative given the high level of interest. The Committee has a clear charter and includes good representation of relevant interests of the area with members including an independent Chair with Fisheries experience, representatives of relevant local fisheries, and members with relevant scientific expertise.</p> <p>NOPSEMA recognises that while the research projects are in the final stages of design, a clear requirement has been set for CGG to implement both projects as part of undertaking this petroleum activity. The projects are being developed by expert parties and have clear objectives and design parameters in place.</p> <p>NOPSEMA also recognises that, as a precautionary approach driven by the high level of concern in the fishing industry, CGG have committed to develop and implement, in consultation with the SAC, a Fisheries Displacement Mitigation Plan. While the details of the plan have not been finalised, NOPSEMA is satisfied that a clear, fair and balanced process has</p> |

| What was raised: | What CGG are doing:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | What NOPSEMA decided:                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
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|                  | <p>The SAC is to be used to assist with survey planning and determine which order the zones should be surveyed. CGG commissioned an analysis of commercial catch and effort data to compliment the study already completed by SETFIA which is to be used by the SAC to help inform survey planning.</p> <p>CGG confirmed that the SAC will also inform development of two research studies, in collaboration with University scientists, aimed at evaluating impacts of key concern to fisheries stakeholders. The studies will aim to identify the effect of the seismic survey on octopus and the finfish targeted by the Danish Seine Fishery and will look at before, during and after effects of the survey (see EP section 8.3.3).</p> <p>CGG has committed to the payment of compensation to the rightful owner of any equipment that has been damaged or lost as a result of the survey. Even though significant impacts are not expected, CGG has also committed to develop and implement a Fisheries Displacement Mitigation Plan to formally manage claims by commercial fishing stakeholders for costs due to relocation and loss of catch as a consequence of survey activities. The Plan will be reviewed by the SAC, and CGG have committed to implementing the Plan prior to commencement of survey activities. The Plan is based on industry best practice and will set out decision rules to deal with evidence based claims for loss of catch and revenue due to displacement arising from the survey. The results of the octopus and Danish Seine fishery studies may be used to assess whether fishers claims for compensation are merited (see EP section 8.3.3.3).</p> <p>CGG has committed to undertaking a number of communications measures to ensure that marine users are aware of the location of the survey vessels on a monthly, weekly and daily basis to enable fishers to plan their activities and reduce disruption to their operations.</p> | <p>been established, that is consistent with industry best practice and will meet the standard of performance established in the EP (see table 6.25 of the EP).</p> <p>NOPSEMA is reasonably satisfied that CGG have provided a detailed evaluation of potential displacement of commercial fishers and demonstrated that with the adoption of control measures, impacts and risks of the survey will be reduced to as low as reasonably possible (ALARP) and to an acceptable level.</p> |



| What was raised:                                                                                                                                                                                                                                             | What CGG are doing:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | What NOPSEMA decided:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
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| <i>Fisheries Stock</i>                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <p><b>There would be unacceptable impact from seismic sound on fish stocks.</b></p> <p>Claims were raised that seismic sound would cause mortality, injury and/or displacement of commercially important fish species resulting in a reduced catch rate.</p> | <p>To address these claims CGG identified areas of importance to fisheries stocks, including spawning, and undertook a thorough assessment of the impacts from seismic sound on fisheries species that was informed by underwater sound modelling.</p> <p>CGG identified a number of gaps in the scientific understanding of how underwater sound impacts some specific commercially fished species. In consideration of this uncertainty, CGG adopted a conservative approach in the assessment of impacts to commercially targeted species. Further, CGG established a Scientific Advisory Committee (SAC), committed to two research studies and established a compensation scheme, as discussed above.</p> <p>The results of the impact assessment and response to feedback from relevant persons resulted in CGG adopting an environmental performance outcome that requires there to be no long term, permanent or unrecoverable effects to commercially important fish stocks or fisheries, or impacts during their spawning seasons.</p> <p>The measures in place to ensure this level of performance is met include (see EP section 6.1):</p> <ul style="list-style-type: none"> <li>• For the bulk of the survey, adjacent sail (survey) lines will not be acquired over a period of less than 24 hours.</li> <li>• The survey area avoids the Horseshoe Canyon Key Ecological Feature.</li> <li>• There will be no undershooting of the four existing oil and gas platforms over or in the vicinity of South East Reef.</li> <li>• In the event that another vessel is acquiring seismic data in the region, the CGG survey vessel shall not acquire data simultaneously within 40 km of the other seismic vessel in order to avoid cumulative impacts to marine fauna.</li> <li>• Adjustment of the acquisition area so that the area ensounded by seismic sound at levels predicted to impact scallops lies a minimum of 3.7 km from an identified scallop bed.</li> <li>• Seismic activity over South East Reef will be completed during the months identified as having the lowest sensitivity for spawning of commercially important species, March-April; and the number of shots within this area will be reduced by increasing the distance between them from 12.5m to 37.5m.</li> </ul> | <p>NOPSEMA recognises the matter raised and agrees that there is the potential for the activity, if not appropriately managed, to have an unacceptable impact on commercially important fish stocks.</p> <p>In making a decision regarding this matter, NOPSEMA took into account the content of CGG’s EP, NOPSEMA’s Decision Making Guidelines (GL1721), scientific literature and the views expressed by relevant persons including the fishery representative organisations; Seafood Industry Victoria (SIV), South East Trawl Fishery Association (SETFIA), Southern Shark Industry Alliance (SSIA), and the Lakes Entrance Fisheries Co-op (LEFCOL) as well as the fisheries management authorities (Australian Fisheries Management Authority and Victorian Fisheries Authority).</p> <p>NOPSEMA required that the evaluation of impacts from underwater sound on fish stocks, including spawning commercial species, was well supported and based on information about the sensitive locations within the survey area and acoustic thresholds described in the scientific literature (e.g. Popper et al. 2014, Day et al. 2016 and McCauley et al. 2017). CGG was required to provide justification that control measures would be sufficient to manage impacts to as low as reasonably practical (ALARP) and acceptable levels. During NOPSEMA’s assessment of the EP, CGG provided further information about South East Reef and other important fisheries values. Improvements were also made to the effectiveness of proposed controls and greater clarity provided on how the SAC will function effectively to continue to manage impacts to fisheries and fisheries stocks.</p> <p>Given the evaluation of impacts provided in the EP and the additional, precautionary controls adopted in response to claims raised by relevant persons, NOPSEMA is reasonably satisfied that the control measures proposed will reduce the impacts to commercially important fish species will be reduced to as low as reasonably practicable (ALARP) and to an acceptable level.</p> |



| What was raised:                                                                                                                                                                                                                                         | What CGG are doing:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | What NOPSEMA decided:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
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| <i>Displacement of recreational fishers</i>                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <p><b>There would be unacceptable impacts from the seismic survey on recreational fishing activities</b></p> <p>Claims were raised that the survey would have impacts on the Victorian Broadbill Swordfish Tournament planned from May to June 2019.</p> | <p>CGG has undertaken comprehensive consultation in the course of developing this EP (see the below matter). This includes engagement with Fisheries Managers, recreational fisheries representatives and charter fishermen.</p> <p>A concern was raised that the survey may occur at the same time as the Victorian Broadbill Swordfish Tournament to be based at Lakes Entrance from early May to early June.</p> <p>The activity is to be carried out in a manner that does not interfere with the navigation of fishing to a greater extent than is necessary for the reasonable exercise of the rights and performance of duties.</p> <p>A range of measure have been put in place to ensure this level of performance is met (see table 6.25 of the EP). Of particular relevance to this matter, CGG has contacted the event organiser and developed an ongoing communications plan, so that the tournament can be safely conducted without undue interference by the seismic survey. This protocol includes:</p> <ul style="list-style-type: none"> <li>• Provision of maps and information for distribution to competitors at the pre-tournament briefings held by the organisers in Melbourne and Lakes Entrance, containing CGG vessel and contact information. This will ensure all competitors are aware of the survey and the survey vessel operating in the area.</li> <li>• The survey information and CGG contact information will be posted on the 'Gippsland Lakes Angling, Game &amp; Sports Fishing Club INC' Facebook page.</li> <li>• CGG will provide 24hr look-a-heads of the expected vessel location for that day to organisers, which can be distributed to the competitors.</li> <li>• CGG contact to be added to the organiser's text updates, advising if competition will go ahead that day.</li> <li>• Multiple chase vessels will be operating well in advance of the survey vessel's path, which will be able to verbally alert the competitors of the survey vessel's approach, in case of difficulty in reaching via radio. Fishing vessels will also be provided with phone numbers of the survey vessel so that they can be contacted via satellite phone.</li> </ul> | <p>NOPSEMA recognises the matter raised and agrees that there is the potential for the activity, if not appropriately managed, to have an unacceptable impact on recreational fishing activities.</p> <p>In making a decision regarding this matter, NOPSEMA took into account written comments from the tournament organiser, information provided by CGG about its evaluation of the claim and how it intends to manage the issue, arrangements for ongoing consultation, and control measures in place to prevent unreasonable interference with other marine users detailed in CGG's EP, and NOPSEMA's Decision Making Guidelines (GL1721).</p> <p>NOPSEMA recognises CGG has taken appropriate action to respond to information about the Victorian Broadbill Swordfish Tournament activities and developed a suitable communication protocol. Further, arrangements for ongoing consultation are suitable, and control measures are consistent with good maritime practice to prevent unacceptable impacts to other marine users.</p> <p>NOPSEMA is reasonably satisfied that the EP provides sufficient arrangements to ensure that recreational fishing concerns have been appropriately addressed and that if additional issues are identified, prior to or during the survey, they will be addressed in an acceptable manner.</p> |

| What was raised:                                                                                                                                                                                                                                                                            | What CGG are doing:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | What NOPSEMA decided:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
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| <i>Interaction with commercial shipping and oil and gas activities</i>                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <p><b>The activity has the potential to cause a negative impact on the operation of other marine users.</b></p> <p>Claims were raised that CGG should implement certain control measures to reduce the potential for negative impact on oil and gas activities and commercial shipping.</p> | <p>CGG has recognised that the survey area overlaps an area with heavy shipping traffic and a number of petroleum installation. In recognition of this, and in response to advice from relevant authorities CGG has undertaken additional consultation and put in place a number of control measures.</p> <p>CGG has confirmed that the activity is to be carried out in a manner that does not interfere with the operations of other petroleum activities to a greater extent than is necessary for the reasonable exercise of the rights and performance of duties.</p> <p>The requirements in place to ensure this level of performance will be met include:</p> <ul style="list-style-type: none"> <li>• Refuelling and vessel-to-vessel transfers will occur away from shipping lanes or other high traffic areas</li> <li>• The seismic vessel will maintain appropriate lighting, navigation and communication at all times to inform other marine users of the position and intents of the survey vessel in compliance with the Navigation Act 2012 and Chapter 5 of The International Convention on the Safety of Life at Sea (SOLAS Convention).</li> <li>• The survey vessels will be staffed with Maritime Union of Australia (MUA) crew to provide local knowledge of the area and shipping activities.</li> <li>• The seismic support and escort vessels will maintain communications with vessels in the vicinity of the survey activities via radio and other available means. The support vessels will assist in managing interactions with other vessels and maintain communications with other vessels in the survey area.</li> <li>• The vessel type, location, virtual outer tail buoy locations, azimuth and speed will be broadcast survey vessel's automatic identification system (AIS). This helps outside traffic to see the seismic gear especially during line turns.</li> <li>• The seismic vessel will broadcast twice daily bulletins outlining the seismic vessel location and planned movements over the next 24hrs to all relevant persons in the survey area (via radio, AIS and email).</li> <li>• When the operation is within four hours of crossing the shipping lane, the broadcasts will be increased to an appropriate interval and broadcasting made to all shipping within radio contact. Direct two-way communication will be made to ships that are calculated to be within the vicinity of the crossing at the same time, or within an appropriate period as the survey vessel is crossing the lane.</li> <li>• In relation to other petroleum operations, CGG will continue to provide updates of the proposed activity with petroleum companies and participate in simultaneous operations (SIMOPS) workshops to mitigate any hazards, agree on a communication protocols, operating zones and buffer distances.</li> </ul> | <p>NOPSEMA recognises the matter raised and agrees that there is the potential for the activity to have negative interactions with other marine users.</p> <p>In making a decision regarding this matter, NOPSEMA took into account the content of CGG's EP, NOPSEMA's Decision Making Guidelines (GL1721), and the views expressed by relevant persons such as the Australian Maritime Safety Authority.</p> <p>NOPSEMA required that CGG's evaluation of impacts and risks from the survey to shipping and petroleum activities was well supported by the specific activity context and was informed by relevant person feedback to demonstrate that control measures would be sufficient to manage impacts to ALARP and acceptable levels. During the assessment, NOPSEMA required CGG to formalise control measures and communication protocols to prevent unreasonable interference with other marine users.</p> <p>After taking into consideration all the environmental management requirements, NOPSEMA is reasonably satisfied that the control measures proposed will reduce the impacts and risks to shipping and petroleum operations to an acceptable and ALARP level.</p> |

| What was raised:                                                                                                                                                                                           | What CGG are doing:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | What NOPSEMA decided:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
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| <i>EPBC Listed Whale Species</i>                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <p><b>There is potential for unacceptable impact on EPBC listed whale species.</b></p> <p>Claims were raised in relation to managing impacts to whales, including within biologically important areas.</p> | <p>CGG has responded to this matter by undertaking a comprehensive literature review of whale movement and behaviour within and surrounding the Gippsland survey area (See section 4.5.9.1 of the EP). The three key species identified were blue whales (<i>Balaenoptera musculus</i>), southern right whales (<i>Eubalaena australis</i>) and humpback whales (<i>Megaptera novaeangliae</i>). The survey area overlaps a biologically important area (BIA for possible foraging) for blue whales, a potential migratory pathway for humpback whales and is offshore from a BIA (coastal connecting habitat and migratory movements) for southern right whales.</p> <p>CGG will ensure that there is no mortality or permanent injury to protected marine fauna species due to noise associated with the operation of the seismic source; no injury to pygmy blue whales and no displacement of pygmy blue whales from their possible foraging BIA; no injury to southern right whales and no restrictions to southern right whales resting or migrating (connectivity) with their migration and resting on migration BIA.</p> <p>CGG have adopted a range of measures to ensure this level of performance will be met (see table 6.18 of the EP). Of particular relevance to addressing this claim CGG:</p> <ul style="list-style-type: none"> <li>• Reduced the acquisition area. As a result, the distance between the closest point of seismic acquisition and the southern right whale BIA increased from 8.5 km to 13.6 km. A sufficient distance to avoid behavioural disturbance in the BIA as supported by underwater acoustic modelling that was undertaken for the specific survey area conditions and airgun array volume and configuration (see Appendix D of EP).</li> <li>• CGG has committed to implementing a conservatively derived precautionary zone for whales (including a shut-down zone where the sound source will be silenced should a whale enter the zone). The evaluation of impacts recognises it is possible that humpback whales, pygmy blue whales and southern right whales may migrate through the survey area and pygmy blue whales may undertake foraging activity in the area. As a result, CGG has used modelling results and published effect thresholds to define larger precaution zones for these species than required by standard Part A management procedures outlined in EPBC Policy Statement 2.1 (page 173 of EP).</li> <li>• The implementation of these precaution zones will be supported by two trained marine fauna observers and a 45 minute observation period to increase effectiveness of visual whale detection.</li> <li>• In addition a passive acoustic monitoring (PAM) system and two trained PAM operators are to be used to enable effective acoustic whale detection.</li> </ul> | <p>NOPSEMA recognises the matter raised and agrees that there is the potential for the activity to impact on EPBC listed whale species should they be present in the region during the course of the marine seismic survey.</p> <p>In making a decision regarding this matter, NOPSEMA took into account the content of CGG’s EP, NOPSEMA’s Decision Making Guidelines (GL1721), the views expressed by relevant persons, the Conservation Management Plan for the Blue Whale (DoE, 2015), the Conservation Management Plan for the Southern Right Whale (SEWPC, 2012), the Conservation Advice <i>Megaptera novaeangliae</i> humpback whale (TSSC, 2015) and the EPBC Act Policy Statement 2.1 (DEWHA, 2008). The consideration of effect ranges for whales and selection of appropriate precaution zone sizes was informed by guidance set out in EPBC Policy Statement 2.1 (DEWHA, 2008) as well as more contemporary guidelines (e.g. NMFS, 2018).</p> <p>Through the course of the assessment process, NOPSEMA required CGG to better support the evaluation of impacts and give further consideration of control measure for managing potential impacts to whales. This included greater consideration of distribution and biology of species and interrogation of sound modelling results against published sound effects thresholds, consideration of relevant plans of management, and further consideration of effectiveness of control measures such as PAM. As a result, CGG reduced the acquisition area, has provided robust evidence to demonstrate that control measures will be sufficient to avoid unacceptable impacts, and improved effectiveness of the suite of whale detection and control measures to manage impacts to these species.</p> <p>After taking into consideration all the environmental management requirements, NOPSEMA is reasonably satisfied that impacts to EPBC listed whale species will be managed to acceptable and ALARP levels.</p> |





| What was raised:                                                                                                                                                                                          | What CGG are doing:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | What NOPSEMA decided:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
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| <i>Consultation method</i>                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <p><b>The consultation in the course of preparing the EP was inappropriate.</b></p> <p>Claims were raised that the methods used did not provide relevant persons with sufficient information or time.</p> | <p>CGG commenced consultation with relevant persons (stakeholders) in May 2018. This consultation continued throughout 2018 and will continue prior to, and during the activity. One hundred and thirty-nine (139) relevant persons in total were consulted during the course of developing the EP.</p> <p>SETFIA was engaged by CGG to develop a report on the potential impacts of the activity on commercial fishing in the area. The report includes a list of key contacts for representative bodies for each potentially affected fishery sector and a list of relevant fishers. This information was used by CGG to ensure that all relevant fisheries were included in consultation. CGG's consultation process included all the organisations and fishers on these lists that could be contacted.</p> <p>Between May 2018 and February 2019 stakeholders were engaged through various means such as face to face meetings, public information sessions, direct correspondence and phone calls. The relevant persons were followed up by CGG via letters, emails and phone calls when no response was provided. Information about the activity was also made available on CGG's website for the broader public. Information provided to relevant persons included a summary of the potential impacts of the activity, controls to be applied to the activity, a summary of the underwater acoustic modelling and a list of references used to develop the impact assessment. More detailed information was provided to relevant persons on request.</p> <p>In a number of instances CGG received feedback that stakeholders were not satisfied with the consultation process. In these cases CGG responded and affirmed CGG's commitment to undertake meaningful consultation and encouraged further feedback or requests for information.</p> <p>CGG made a number of adjustments to the consultation approach in response to feedback from relevant persons, including clarifying consultation and notification preferences with individuals and proposing and testing different methods of contact.</p> <p>CGG has also committed to undertaking a full review of relevant persons to ensure that they are consulted and notified prior to commencement of the survey.</p> | <p>NOPSEMA recognises the importance of consultation undertaken with individuals and organisations who may be affected by petroleum activities and recognises the value this has in informing the evaluation of potential impacts and risks.</p> <p>In making a decision regarding this matter, NOPSEMA took into account the content of CGG's EP, which included the full text of the views expressed by relevant persons, the extent of the consultation effort undertaken by CGG, NOPSEMA's Decision Making Guidelines (GL1721), and correspondence received directly by NOPSEMA during its assessment of the EP.</p> <p>During the assessment process, NOPSEMA required CGG to consult with all relevant persons identified and provide them with sufficient information and time to allow them to make an informed assessment of the possible consequences of the activity on their functions, interests or activities. NOPSEMA also required CGG provide a complete report on consultation as part of the EP submission to demonstrate that consultation had been undertaken in accordance with the regulations.</p> <p>NOPSEMA found that the consultation carried out met the regulatory requirements. It is evident that CGG has adopted a methodical approach to the identification of relevant persons, formulation of a consultation strategy, and maintenance of consultation records. It is evident that the information gathered from consultation has been used to inform the development of the EP.</p> <p>NOPSEMA is reasonably satisfied that CGG has provided each identified relevant person with sufficient information and a reasonable period to make an informed assessment of the possible consequences of the activity on their functions, interest, or activities. NOPSEMA acknowledges that there are still some remaining concerns held by relevant persons regarding provision of further information. However, given the provisions for ongoing consultation, including the ongoing commitment for the operation of the SAC, and the specific requirements in place to keep relevant persons updated as the survey is planned and implemented, NOPSEMA considers that consultation for the purposes of preparing the EP is appropriate.</p> <p>NOPSEMA concluded that consultation undertaken and planned is consistent with the requirements of Division 2.2.A and that relevant persons have been provided with sufficient information and time. NOPSEMA is also satisfied that claims about the activity have been adequately addressed through the impact evaluation and the adoption of appropriate control measures.</p> |


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