NOPSEMA
Australia's offshore energy regulator

Our ref: [redacted]
Your ref: [redacted]
Contact: [redacted]
Email: [redacted]

[redacted]
Environment Manager
CGG Services (Australia) Pty Ltd
[redacted]

[redacted]

Dear [redacted]

RE: ENVIRONMENT PLAN SUBMISSION – NOT REASONABLY SATISFIED – REGIA MSS

I write with regard to the environment plan (EP) submitted to NOPSEMA on 12 November 2024 by CGG Services (Australia) Pty Ltd (CGG) for the Regia Marine Seismic Survey (MSS) (Document No. REG-EP-030-F1, Revision 2, dated 11 November 2024).

In accordance with regulation 33(5) of the Offshore *Petroleum and Greenhouse Gas Storage (Environment) Regulations 2023* (the Environment Regulations), NOPSEMA provides this notice because, pursuant to regulation 33(1) of the Environment Regulations, NOPSEMA is not reasonably satisfied that the EP meets the environment plan acceptance criteria set out in regulation 34[a], [b], [c], [d], [e], and [g] of the Environment Regulations. The reasons for this are provided in Attachment 1.

NOPSEMA is giving CGG an opportunity to modify and resubmit the EP (the modified EP). The modified EP must be submitted to NOPSEMA by no later than 9 May 2025. If you feel that this is not a reasonable period of time in which to submit the modified EP, please request an extension within 30 days of receipt of this letter.

Please note the importance of addressing each matter detailed in Attachment 1 in the modified EP, as a failure to do so may result in NOPSEMA's refusal to accept the modified EP.

In accordance with regulation 33(10) of the Environment Regulations, if a modified EP is not submitted within the timeframe, NOPSEMA may refuse to accept the EP, or accept it in part for a particular stage of the activity or accept the EP with limitations or conditions.

Additional matters, including editorial matters, that NOPSEMA wishes to raise for CGG's consideration are provided in Attachment 2.

Please provide the modified EP, together with a copy showing all changes made to each document (via: [redacted] On receiving the modified EP, NOPSEMA will undertake an assessment in accordance with regulations 33(7) and 33(8) of the Environment Regulations.

Should you have any questions please contact [redacted]

Yours sincerely

[redacted]

wA928318

07 February 2025

Attachment 1 – Environment Plan acceptance *criteria that NOPSEMA is not reasonably satisfied has been met*

Item	Reasons why NOPSEMA is not reasonably satisfied the environment plan acceptance criteria has been met

Acceptance Criteria 34(a) – the EP is not appropriate for the nature and scale of the activity because:

1.1 ***The scope and bounds of the activity need to be more clearly defined.***

Issue: The EP should include a suitable description of the activity and how it may affect the environment, including the scope and bounds of the activity (**GL1721, Section 6.3**). The Activity Description in Appendix A2 provides definitions of the Operational Area (OA), Active Source Area (ASA), and a newly defined Survey Acquisition Area (SAA). However, the boundaries for these areas mapped in Appendix B12, and the description of activities elsewhere in Appendix A2 create uncertainty about where the sound source will be operated and where operational activities will take place. The proposed timing of the activity also requires clarification to ensure consistency throughout the EP.

Reasons: Examples of inconsistencies regarding the survey boundaries and locations of specific activities include:

a. The SAA boundary extends up to the boundary of the ASA, where the activity description suggests that north-westerly to south-easterly sail lines would begin/end (e.g. see Appendix B12, Maps 031_B, 089 and 090). The definitions of the OA, ASA and SAA areas in Section 3.4 and the definition of sail lines in Section 1.3 of Appendix A2 imply that the sound source will be active outside the SAA boundary during line run-ins and run-outs, however, the positioning of the SAA boundary relative to the ASA boundary seems to contradict this.

b. The definition of the ASA in Section 3.4 states that line run-outs and run-ins will occur in the ASA. However, Section 3.4 also states that '*the sound source cannot be discharged at full power within the ASA and outside of the SAA*', despite seismic survey line run-outs typically involving the sound source operating at full power.

c. The activity limitation '*operate the sound source at low power during line turns and if transiting between survey lines anywhere in the operational area*' is inconsistent with '*the sound source cannot be active in the operational area outside of the active source area*' in the definition of the OA in Section 3.4 of Appendix A2.

d. The SAA in Appendix B12 (MAP 031_B) appears to extend into water depths shallower than the 50m depth contour and outside of the ASA (see Appendix B12, MAP 031_B).

e. The map legends in Appendix B12 refer to a 'Previous Active Source Area', but NOPSEMA understands from the Activity Description in Appendix A2 that the ASA boundary is still current.

f. Section 3.2.1 of Appendix A2 states that '*the seismic and support vessels will conduct a few days of operational movements to deploy and test the equipment, which may occur within the OA or adjacent to it*'. It is not clear if the equipment testing described here includes testing of the sound source or not, noting that the area definitions in Section 3.4 state that the sound source cannot be active outside the SAA or ASA. The definition of the OA in Section 3.4 also implies that equipment deployment and recovery activities will occur within the OA, not 'adjacent' to it. Additionally, Table F2-10 rejects adoption of a measure to restrict deployment and retrieval of seismic gear to the OA and suggests CGG will deploy equipment en-route to the OA.

Please also note that RFFWI Item 1.1 identified that the EP intermittently references a 'survey area' and it was unclear what area this term referred to. Although CGG has addressed some of these, there are still a few instances where the EP documents refer to a Regia 'survey area' with no explanation of whether this refers to the OA, ASA, SAA or if it is a collective term for all of these.

With regards to survey timing, activity limitations provided in Section 4 of Appendix A2 infer that the survey may take place in either 'April, May or June' or in 'September, October, November or December', but there are examples in other appendices of the EP where the survey timing is not consistent with this (e.g. Section 3.14 of Appendix F3 which indicates survey timing is April-June and September-November). Additionally, EP Section 6 states that "*The Regia MSS provided for in this EP is proposed to be carried out as per the Description of the Activity found in Appendix A2. This allows for the activity to be undertaken during a 5-year period, between 1 April 2024 (subject to acceptance of this EP by NOPSEMA) and 31 December 2028';* however, Appendix A2 (Table A2-1) describes the latest finish date for operations as the 31st of October 2028.

1.2 ***The EP does not demonstrate that the level of analysis and evaluation is commensurate with the nature and scale of the activity and the severity of individual impacts and risks – Physical presence – Commercial fishing***

Issue: The EP does not demonstrate that level of analysis and evaluation undertaken to assess the impacts to key commercial fisheries is commensurate to the nature and scale of the activity or the magnitude of impacts arising from the activity (**GL1721, Section 6.3**). The EP currently identifies the key Commonwealth and State fisheries that the survey is most likely to interact with, but the current level of analysis does not provide an indication of the proportion of key fishing grounds that could be affected or consider the fisheries' capacities to tolerate the predicted level of displacement / relocate to alternative viable areas. Therefore, the magnitude of potential impacts are not adequately predicted.

Reasons: There is no assessment of the proportion of overlap between the survey with areas of historical fishing effort in the Commercial Fisheries Review (Appendix B6) or physical presence impact assessment (Appendix E1). This is despite demonstrating this approach during consultation (Event ID 4934/5195) when further detail on activity overlap with the Commonwealth Trawl Fishery were requested by relevant persons. Such an analysis should consider an appropriate scale (e.g., regional level rather than 'whole of fishery') to provide a suitable and representative evaluation of impacts to local affected fishers, consider the different methods (e.g., 'static gear' – pots and gillnets vs 'mobile' – trawl and 'jigging'), and discuss the potential implications of relocating.

The EP does not demonstrate that the impacts from the activity have been adequately interpretated and evaluated due to the following:

- Discrepancy between the area referred to in the evaluation of physical presence impacts in Appendix E1 (Operational Area) and Activity Planning Area used in the historical fishing catch and effort figures in the Commercial Fisheries Review (Appendix B6). As the Operational Area represents '*the extent of the area where other marine users' activities may be affected by the physical presence of vessels and towed equipment'* as stated in Appendix E1, it would eliminate uncertainty around interpretation of impacts if the Commercial Fisheries Review were able to adopt this boundary throughout. The current situation of assessing fishing activity at one spatial extent and evaluating impacts at another spatial extent introduces uncertainty into accurate interpretation.
- Potential inaccuracies of stated 'fishing day' numbers within the Operational Area in Table E1-1 for Victorian-managed Fisheries (including Giant Crab Fishery, Rock Lobster Fishery, Multispecies Ocean Fisheries, Wrasse (Ocean) Fishery and Octopus Fishery). For some fisheries, it appears they have not been interpreted at the appropriate level (i.e. Operational Area; see above bullet point). For other fisheries, it is unclear what figure or source was used to inform the 'days fished' described in Table E1-1. Consequently, this casts doubt over the qualitative 'activity level' conclusions made in Table E1-1 for certain fisheries. Please review the following Victorian-managed fisheries:
    - Giant Crab Fishery: Table E1-1 (Appendix E1) states that "*the maximum days per year was 24*", however 'MAP-REG-EPM-032_A' of Appendix B12 clearly displays a block of 84 days within the Operational Area. There is a block of 24 days, however this occurs within the Active Source Area.

	• Rock Lobster Fishery: Table E1-1 (Appendix E1) states that "*the maximum days per year was 316*" however 'MAP-REG-EPM-038_A' in Appendix B12 shows the Operational Area partially overlaps a block of 2,412 days fished. Other notable blocks overlapped by the Operational Area include 1,359, 1,227, and 1,007 days fished. • Multispecies Ocean Fisheries: Unclear what figure or source informed the following statement in Table E1-1 of Appendix E1, "*During 2011 to 2021 the maximum number of vessels that fished within the Operational Area was five and the maximum days per year was 40*". The years and days fished do not correspond to Figure 15 of the Commercial Fishing Review (Appendix B6). • Wrasse (Ocean) Fishery: Table E1-1 (Appendix E1) states that "*the maximum days per year was 100*", however, there is no figure in the Commercial Fishing Review (Appendix B6) that displays historical fishing data to substantiate this statement. Figure 20 of Appendix B6 displays grid block numbers but not fishing days. • Octopus Fishery: The stated 'days fished' in Table E1-1 (Appendix E1) correspond to Figure 16 of the Commercial Fishing Review (Appendix B6), however the time frames are different (Appendix E1, 2020-2021; Appendix B6, 2020-2022).
1.3	***There is not a thorough description of the environment that may affected by the activity – Ambient noise*** **Issue:** An understanding of the ambient soundscape provides relevant environmental context that informs the assessment of underwater sound generated by the activity, but this has not been described. **Reasons:** Features of the environment that may influence the activity or the impacts of the activity should be described (**GN1344, Section 3.2**). The ambient soundscape including contributions from existing anthropogenic noise should be identified and described as relevant to the activity location, where data is available (**IP1765, Section 2.2**). The ambient soundscape, as relevant to the area of received sound from the activity, has not been described in the EP.
1.4	***The EP does not demonstrate that the assessment of underwater sound impacts is appropriate for the nature and scale of the activity, or that the predicted impacts will be acceptable – Zooplankton*** **Issue:** The EP must demonstrate that the detail and rigour applied to the impact and risk assessments are commensurate to the magnitude of impacts and risks arising from the activity (**GL1721, Section 6.3**) and that all impacts and risks will be managed to acceptable levels (**GL1721, Section 8**). The EP does not currently demonstrate that the detail and rigour applied in the assessment of underwater sound impacts to zooplankton are appropriate or if impacts will be acceptable because components of the analysis of the predicted level of impact are not clear. **Reasons:** A component of the assessment in Appendix E2 states that '*Based on an effect range of 200 m it is estimated ~2% of the zooplankton, including krill, present within the Regia Active Source Area and less than 0.2% of zooplankton present in the Otway bioregion would be impacted per day*'. However, the impact assessment does not explain the method or assumptions applied to obtain these values, which are required to provide necessary context for comparison with other scenarios considered in the assessment, and prediction of the magnitude of impacts to zooplankton. Additional information provided during relevant person consultation ([redacted] should be considered in the assessment and evaluation of potential control options, if information provided by the relevant person to support their objections or claims has merit.
1.5	

The EP does not demonstrate that the assessment of underwater sound impacts is appropriate for the nature and scale of the activity, or that the predicted impacts will be acceptable – Fish

Issue: The EP must demonstrate that the detail and rigour applied to the impact and risk assessments are commensurate to the magnitude of impacts and risks arising from the activity (**GL1721, Section 6.3**) and that all impacts and risks will be managed to acceptable levels (**GL1721, Section 8**). The EP does not currently demonstrate that the detail and rigour applied in the assessment of underwater sound impacts to fish are appropriate or if impacts will be acceptable because the predicted levels of impact to relevant fish species and stocks are not clear.

Reasons: Specific examples of where the assessment of underwater sound impacts to fish require clarification and/or further assessment include the following:

a. There are inconsistencies between the commercial fish species identified in the Commercial Fisheries Analysis Report in Appendix B6, those described in Section 4 of Appendix E3, and then assessed in Section 8.1.5 of Appendix E3 and Appendix F3, with the reasons not always explained or apparent. For example, Section 4 of Appendix E3 describes the commercial fish species that may be affected by the activity based on Appendix B6, but has not described some species (e.g. redbait, snapper, or Australian salmon). Section 8.1.5 of Appendix E3 then determines that there will be negligible impacts on the basis that there will be negligible impacts due to particular species not spawning near the Operational Area or because species are highly fecund, but a number of the species identified in Section 4 do not appear to have been considered. A different subset of species are then assessed in Section 3.14 of Appendix F3, for reasons that aren't made clear.

b. The assessment in Section 8.1.5 of Appendix E3 states that impacts will be negligible due to species not spawning within the Operational Area, being highly fecund, or due to their serial, broadcast spawning strategies. However, as only some of the relevant target species seem to have been assessed, it is not clear if this justification is appropriate or supported for all fish species. The spatial extent of the relevant stocks and timing of spawning also do not seem to be referenced in the assessment, so the potential for impacts to occur or the magnitude of impacts to the stocks are unclear.

c. Some information does not appear to be accurate, for example, Section 8.1.5 of Appendix E3 states that '*Jack Mackerel spawn off the southeast coast of Australia moving progressively southwards over the summer (AFMA 2023m)*', but this does not justify that they would not be impacted or should be excluded from further assessment; NOPSEMA understands that Jack Mackerel (*Trachurus declivis*) '*spawns throughout Bass Strait and that separation of Eastern and Western stocks may occur around the Bonney Coast*'[1]. Therefore, spawning Jack Mackerel within the western management unit of the Small Pelagic Fishery may occur in the Otway region.

d. The assessment of impacts to spawning patterns in Section 3.14 of Appendix F3 addresses some of the information gaps noted above for some species, but again contains inconsistencies (e.g. see item [a] above, and silver warehou is now assessed, when blue warehou was previously assessed in Appendix E3). Section 3.14 of Appendix F3 does not clearly articulate the potential magnitude of effects (spatial or temporal) for each of the relevant fish stocks.

e. The impact assessment has not determined if there may be impacts to the spawning/reproduction and recruitment other protected (non-commercial) fish species listed in Section 4 of Appendix E3, or what the magnitude of these impacts might be.

f. The assessment of impacts to King George Whiting (KGW) in Section 3.12 of Appendix F3 draws conclusions from linear regression analyses undertaken by CGG to test for any correlations between the annual recruitment of KGW to Port Philip Bay and the annual count of seismic surveys across Victorian waters. It is understood from the study by Jenkins et al. (2000; received during relevant person's consultation) that the primary spawning location for

KGW is in waters offshore from western Victoria. It is not clear from the information provided in Section 3.12 of Appendix F3 if the regression analysis accounts for seismic survey locations or times that do not overlap with KGW spawning areas or spawning periods, or how this could alter the results or reliability of the analyses.

g. The assessment of change in commercial catch in Section 8.1.5 of Appendix E3 as a result of direct behavioural impacts of seismic surveys to commercial catch rates references a number of studies, some finding no or negligible impacts on catch rates, while others report impacts to catch rates for up to 100 or 200 days after the survey. However, there are no clear conclusions to this part of the assessment that articulate why the predicted level of impact is minor.

Overall, the assessments of impacts to fish species (protected and commercial) in Appendix E3 and Appendix F3 do not clearly and systematically identify, describe or assess relevant species. The assessment of impacts to spawning patterns requires a more consistent and systematic assessment, which sets out the logic for each relevant species screened into the assessment in terms of the described spawning depths, spawning periods and spawning activities and the relevant spatial extents of the stock.

In addition, the assessment of underwater sound to fish does not currently consider the potential behavioural disturbance or potential change in distribution of forage/prey fish (e.g. Australian sardines and other sound-sensitive Clupeid species) in the Otway region, to better inform the assessment of impacts to species that rely on these as a key food source.

[1] https://www.fish.gov.au/report/346-Common-Jack-Mackerel-2023.

1.6 ***The EP does not demonstrate that the assessment of underwater sound impacts is appropriate for the nature and scale of the activity, or that the predicted impacts will be acceptable – Southern rock lobster***

Issue: The EP must demonstrate that the detail and rigour applied to the impact and risk assessments are commensurate to the magnitude of impacts and risks arising from the activity (**GL1721, Section 6.3**) and that all impacts and risks will be managed to acceptable levels (**GL1721, Section 8**). The EP does not currently demonstrate that the detail and rigour applied in the assessment of underwater sound impacts to southern rock lobster are appropriate or if impacts will be acceptable because the predicted level of impact for all relevant life stages is not clear.

Reasons: The impact assessment provided in Appendix E4 states that '*Puerulus larvae settle onto reef habitat in shallow waters (50 m to the intertidal zone), not present within the operational area'*. The further assessment of impacts in Section 3.5 of Appendix F3 also states that *'Puerulus settle into their preferred benthic habitat from June – September each year so potential seismic effects on the most vulnerable stage of the life cycle can be drastically reduced by scheduling the MSS for outside this window*'. However, the larval phyllosoma stage occurs in offshore waters and puerulus move from offshore waters to coastal habitat prior to settlement. Therefore, it is not accurate to assume that the puerulus stage will be avoided. Therefore, the assessment of impacts to this stage has not been appropriately addressed.

1.7 ***The EP does not demonstrate that the detail and rigour applied to the assessment of impacts is commensurate to the nature and scale of the activity or the magnitude of impacts arising from the activity – Southern Right Whales***

Issue: Key values and sensitivities should be thoroughly described using relevant references and information sources (**GL1721, Section 6.3**). The detail and rigour applied to the impact and risk assessments are commensurate to the magnitude of impacts and risks arising from the activity (**GL1721, Section 6.3**). The

assessment of underwater sound impacts does not demonstrate that southern right whales are thoroughly described or assessed commensurate to the magnitude of impacts and risks arising from the activity.

Reasons: Southern right whales are not thoroughly described or evaluated to a level of detail that is appropriate to the nature and scale of the activity and its impacts, or utilising key, relevant and contemporary information. The description and evaluation of southern right whales in Appendix E7 and Appendix F3 provides limited information to describe the population (e.g. structure, abundance, trends) and biology (e.g. reproduction, movements, established eastern population calving aggregations within the extent of the reproduction BIAs). Further, the seasonal distribution and movements of southern right whales has been described at a broad population level based on 'CoA (2012)' but without validation with more recent sources. Location-specific southern right whale monitoring project data (DEECA/Arthur Rylah Institute) may be available to improve understanding of timing and movements of southern right whales within the region (first arrival, peak, departures), but has not been explored or evaluated.

1.8 ***There is not a thorough description of the environment that may be affected by the activity – First Nations cultural features and values***

Issue: The EP does not provide a commensurate level of detail to sufficiently describe the First Nations cultural features and values of the environment that may be affected by the activity.

Reasons:

a. The EP (e.g., Appendix F3, Section 3.16) includes reference to "various fish, invertebrate, bird and marine mammals species" that have been identified as First Nations cultural features of the environment that may be affected by the Regia MSS; however, no further detail is provided as to which species this includes. This makes statements such as (Appendix F4, Section 5.5.4) "no cultural features including cultural values, traditions or practices have been identified associated with invertebrates that may be impacted" unverifiable.

b. The EP states that "songlines can extend out to sea country and contain cultural knowledge that is tied to marine plants and animals" and identifies songlines as a cultural feature of the environment that may be affected by the Regia MSS (e.g., Appendix F3, Section 3.16); however, also states that "there are no landforms typical of songlines within the operational area or are anticipated to be impacted by the activity". Additionally, the Sensitive Information Report (i.e., conservation groups full text SIR page 186) contains specific reference to the Koontapool (Southern Right Whale) songline. It is subsequently unclear whether CGG considers that songlines (including the Koontapool songline) may be affected by the Regia MSS.

c. As outlined previously in RFFWI #1, information provided by relevant persons during consultation in relation to First Nations cultural features and values has not been appropriately incorporated into the description of the environment that may be affected by the activity. As a result, this information has not been considered elsewhere in the EP where it may also be relevant. Specifically:

   - [redacted]) informed CGG of the high cultural significance of the Mornington Peninsula and Point Nepean to Bunurong People (feedback ID 1170, event ID 2371). The description of the environment does not identify this, and no consideration is given to whether the activity could affect the Mornington Peninsula and Point Nepean from a cultural significance perspective within the impact and risk evaluations.

- [redacted] informed CGG that the [redacted] Healthy Country Plan includes coastal values (feedback ID 1241, event ID 3674). The description of the environment does not identify this, and no consideration is given to whether the activity could affect the coastal values identified with the [redacted] Healthy Country Plan within the impact and risk evaluations.

d. The EP contains statements that create uncertainty as to whether CGG has appropriately described all First Nations cultural features and values that may be affected by the activity (including from unplanned events). For example:

   - The Sea Country Protection Plan contains the statement that its process includes identification of cultural heritage stories, songlines and other cultural values ***within the operational area and areas affected by sound.***
   - The EP (Appendix E1, Section 4.6) states that "these cultural sites [identified in the Biosis report] ***will not be affected by planned activities associated with the Regia MSS***".

e. Statements within the Sea Country Protection Plan (e.g., "*Activities of the SCPP **will** include*") create uncertainty as to which parts of this process (if any) have already been undertaken as part of relevant person consultation in preparation of the EP to inform the description of cultural features and values that may be affected by the activity and design of cultural heritage protection measures, and which are intended to be part of the ongoing consultation process with First Nations relevant persons.

The above are provided as examples only and the issue may not be limited to these. When modifying the EP, CGG should ensure that a commensurate level of detail is used to describe identified First Nations cultural features and values of the environment and clearly demonstrate that all features/values that may be affected by the activity have been identified and included in this description.

In relation to the Sea Country Protection Plan, CGG should provide clarification around the intent of the plan and ensure the EP itself demonstrates that consultation with First Nations relevant persons has appropriately informed identification of cultural features and values that may be affected by the activity in preparation of the EP.

1.9 ***The level of analysis and evaluation is not commensurate to the nature and scale of the activity – First Nations cultural features and values***

Issue: The EP does not clearly and consistently evaluate all impact and risk pathways to First Nations cultural features and values as required by regulation 21(5)(6).

Reasons:

a. First Nations cultural features and values that may be affected by the Regia MSS are identified and listed in Appendix F3, Section 3.16.1; however, it is not clearly described which impact/risk pathways have been identified for each feature/value.

b. Evaluation of impacts and risks to identified First Nations cultural features and values is not carried through the EP consistently. For example, the EP outlines that southern right whales as a cultural value may be at risk from a release of materials or waste overboard (Appendix D1) but does not do the same for all other impact/risk pathways that may affect southern right whales such as (but not limited to) risk of collisions with marine fauna or impacts from underwater noise.

c. The EP (Section 5.5.7 - Underwater sound – Marine Mammals) states that "impacts [from underwater sound] to cultural features are not predicted", which not consistent with information elsewhere in the EP identifying marine mammals (e.g., SRW and BW and other "various" marine mammals) as cultural features of the environment with clear impact pathways to underwater noise from the activity.

d. The EP (Appendix E1, Section 4.6) states that "although Native Title has not been identified to occur within the Operational Area, it is considered possible that cultural values and sensitivities associated with Eastern Maar and Gunditjmara Native Title determinations adjacent to the Operational Area, may be indirectly affected by planned activities, e.g. through light emissions, and have been assessed elsewhere"; however, Appendix E9 (Impact Assessment – Light Emissions) does not evaluate impacts from light emissions to cultural values and sensitivities associated with Eastern Maar and Gunditjmara Native Title determinations.

e. Predicted levels of risk to cultural features and values do not appear to have been considered consistently through Appendix F4. For example, predicted levels of risk to cultural features and values for accidental release of materials or waste overboard (Appendix F4, Section 5.4.1), collisions with marine fauna (Appendix F4, Section 5.4.2) and accidental release of fuel (Appendix F4, Section 5.4.4) are presented as a level of environmental consequence if the risk were to occur, but IMS (Appendix F4, Section 5.4.3) is presented as not predicted to occur.

f. The Cumulative Impact Assessment (CIA) scoping tool (Appendix F1, Annex 3) identifies the potential for cumulative impacts to First Nations Peoples' heritage including over both spatial and temporal extents from a number of environmental aspects and states that "further assessment [is] required to determine if impacts are material"; however, there appears to be no further assessment included in Appendix F1 and Appendix F3 states that "due to the absence of direct effects and immeasurable indirect effects, there is no pathway to assess for cumulative impacts" under Cultural Features of the Environment (Section 3.16). This statement is inconsistent with other information presented in the EP identifying the potential for direct cumulative impact pathways to cultural heritage features/values such as from underwater noise to BW and SRW. It is noted that the CIA includes consideration of some environmental receptors that are also identified as First Nations cultural features (such as SRW and BW); however, consideration of cumulative impacts to these receptors in a cultural context is not included. See also OMR item 1.11.

The reasons above are provided as examples only and the issue may not be constrained to these. CGG should ensure that all impact and risk pathways to all identified First Nations cultural features and values of the environment that may be affected by the activity are clearly identified, described and evaluated. For receptors that are both biological/physical *and* cultural features of the environment, acknowledgement and consideration of this should be clearly articulated in assessment of all impact and risk pathways to these receptors.

1.10 ***The level of analysis and evaluation is not commensurate to the nature and scale of the activity – accidental release of fuel***

Issue: The risk evaluation for an accidental release of fuel does not align with the description of the activity.

Reasons: The EP (Appendix D4) evaluates the risk of an accidental release of 250m^3 MDO although the largest fuel tank is described as 257.4m^3 MDO. It is noted that the EP includes text stating that "Vessel fuel tank inventory will be limited to 250m^3 to align with the modelling report"; however, the EP (e.g., Appendix A2, Section 3.6.1) also contains statements such as "a volume of 250m^3 has been used as the worst-case release because fuel tanks are rarely topped out and hydrostatic pressure and/or ballasting can prevent release of the full inventory", which creates uncertainty as to whether fuel tank inventory will be actively limited for the duration of the activity.

CGG should consider including a clear measure (with appropriate environmental performance standard/s and measurement criteria to monitor compliance) to ensure fuel inventory in the largest tank is limited to 250m^3 for the duration of the activity to ensure alignment with spill modelling recommendations.

1.11 ***Cumulative impacts have not been appropriately detailed and evaluated, and the level of analysis is not commensurate with the nature and scale of the activity***

Issue: The level of analysis applied to the cumulative impact assessment does not provide sufficient detail about the nature and scale of other future projects and activities, or the cumulative impacts arising from them.

Reasons:

a. Reasonably foreseeable future projects and activities identified in Appendix F1 were based on '*a search of projects and activities on the NOPSEMA and DEECA (Vic) Environment Plan websites*'. However, with the exception of the offshore wind declared area that has been noted and scoped out of the assessment, it is unclear if other reasonably foreseeable (non-petroleum/GHG) projects and activities that may be proposed in Commonwealth or State waters have been considered (e.g. referred or approved marine/coastal activities on the DCCEEW or DEECA websites that may be significant and relevant to the assessment).

b. The locations of the various future projects and activities identified in Appendix F1 relative to the Regia MSS should be provided and clearer explanation of which activities are considered in the credible worst-case scenario(s), to provide necessary context for the assumptions made in the temporal and spatial overlap analyses in Section 3.2 and Annex 2 of Appendix F1.

c. Further information is required regarding the types of sound sources considered for the various projects and activities, as well as assumptions applied regarding sound characteristics and sound exposure regimes (in addition to Annex 3) in order to provide relevant context for assessing potential cumulative impacts from the additive effects of these activities.

d. As described in more detail in OMR item 1.9(f), the Cumulative Impact Assessment scoping tool (Appendix F1, Annex 3) identifies the potential for cumulative impacts to First Nations Peoples' heritage including over both spatial and temporal extents from a number of environmental aspects and states that '*further assessment [is] required to determine if impacts are material*'; however, there is no clear further assessment of this other than statements (i.e., Appendix F3) suggesting there are no pathways to assess for cumulative impacts to First Nations cultural features and values.

e. Further analysis should be provided for the selected scenario(s), such that the of predicted levels of cumulative impact are clear. For example:

- The assessment of cumulative impacts to commercial fisheries does not articulate which commercial fisheries affected by the Regia MSS will also be affected by other future projects and activities or provide an indication of how much of the fishing activities may be affected and total combined impact.
- The Cumulative Impact Assessment scoping tool (Appendix F1, Annex 3) indicates that there is no cumulative effect pathway for underwater sound on birds (including penguins), but it is not clear if this is supported as the rationale for this in the scoping stage only mentions sound from drilling activities, not from other seismic activities that are currently identified in the region.

- With regards to marine mammals, only cumulative impacts to blue whales and southern right whales are assessed. No assessment is made of the potential cumulative impacts to other marine mammals, despite the Cumulative Impact Assessment scoping tool (Appendix F1, Annex 3) identifying potential for cumulative impacts.
- The assessment of cumulative impacts to blue whales and southern right whales states that cumulative impacts are not predicted as each titleholder will be required to undertake their activity in a manner that will not be inconsistent with the Conservation Management Plan / Recovery Plan, such that they do not result in impacts such as injury, auditory impairment, displacement from a foraging area, prevent utilisation of the area. However, measures implemented by each titleholder may be designed to be effective for their own sound effects fields in isolation; without clearer understanding of the sound characteristics, sound fields and potential exposure regimes, it is not clear if this assumption is supported for cumulative (additive) sound fields.

Acceptance Criteria 34(b) – the EP does not demonstrate that the environmental impacts and risks of the activity will be reduced to as low as reasonably practicable (ALARP) because:

2.1 ***It is unclear from the EP whether the evaluation of impacts and risks has informed the selection of suitable temporal limitations / control measures to reduce the consequence, severity or likelihood of impacts and risks.***

Issue: There is insufficient information provided in the EP to demonstrate that the selected temporal limitations and control measures adopted for the Regia MSS are ALARP.

Reasons: In demonstrating that the impacts and risks from the activity are ALARP, the EP should provide a clear demonstration that the evaluation of impacts and risks has informed the selection of suitable control measures to either reduce the consequence/severity or likelihood (**GL1721, Section 7.3**). The consideration of what control measures are reasonably practicable should be directly informed by a thorough understanding of the extent, severity, duration and uncertainty of predicted impacts (untreated), and thus the benefit of reducing these impacts for different biota (**IP1765, Section 3.5**). The level of rigor required in the ALARP demonstration will be directly influenced by the magnitude of the predicted impacts from acoustic emissions and the sensitivity of the receptors and areas affected; identification and evaluation of control measures should consider differences between fauna groups, and even species, to determine required effectiveness of controls at reducing impacts from acoustic emissions (**IP1765, Section 3.5**).

It is evident that the Regia MSS is located in an area with numerous seasonal ecological and socio-economic values and sensitivities. '*No discharge of the sound source in January, February, March*' has been selected as an activity limitation, Section 6.1 of the EP provides some context for the January – March exclusion (being largely in response to concerns from relevant stakeholders regarding productivity and biodiversity in the summer months and with reference to EP Annex 1 – Presence / Absence Analysis). However, a clear and rigorous evaluation of the sacrifice vs benefit of the survey timing to reduce impacts has not demonstrated that the selected timing is ALARP (i.e. the "trade-off" and prioritisation of some receptors over others, taking into account the relative sensitivity and predicted impacts/risks to different receptors, not simply presence/absence).

2.2

	The EP does not demonstrate that the method of evaluating ALARP is systematic, applied thoroughly, defensible and reproducible **Issue:** The EP should demonstrate that the costs of implementing any further control measures to reduce risks would be grossly disproportionate to the benefits to the environment that could be gained. The method of evaluation must be systematic, applied thoroughly, defensible and reproducible (**GL1721, Section 7**). In its current form, it is not evident that the method of evaluating ALARP is applied thoroughly, defensible and reproducible. **Reasons:** The 'sacrifice ratio' in Appendix F4 and how it is calculated are not clearly explained. Section 4 of Appendix F2 outlines the conceptual parameters and ALARP baselines considered when determining "sacrifice". However, it is unclear how subsequent sacrifice values for controls have been calculated, and the sacrifice statements provided in the ALARP assessment tables do not clearly explain or substantiate the sacrifice scores provided. It is, therefore, unclear how CGG have evaluated the costs of control measures and the environmental benefits.

2.3	***There is not a thorough consideration and evaluation of all reasonable control measures***
	
	Issue: The EP does not demonstrate, through reasoned and supported arguments, that there are no other practicable control measures that could reasonably be taken to reduce impacts and risks any further (**GL1721, Section 7.3**). In addition, information provided during relevant person consultation, including suggestions for reasonable control measures, should be incorporated, considered and evaluated where applicable (**GL1721, Section 7.3**).
	
	Reasons: The EP (Appendix F2) does not evaluate all mitigation measures that could reasonably be considered, including some measures suggested by relevant persons which should be evaluated in the EP. Examples include:
	
	<u>Underwater sound:</u>
	
	• Further consideration of measures that avoid or reduce the need for seismic sound emissions, consistent with the mitigation hierarchy, such as:
	  ○ Reduction of the spatial extent and duration of the survey by reprocessing existing seismic data that is available for the SAA using modern seismic data processing techniques.
	  ○ Alternative and emerging sound source technologies (in addition to marine vibrosis already assessed) (e.g. eSource, eSeismic).
	  ○ Reduction of the ASA to the north of the SAA to reduce uncertainty and prevent unnecessary operation of the sound source in areas proximal to sensitive nearshore areas (e.g. southern right whale reproduction area, little penguin and pinniped colonies).
	• Shut down of the sound source during line turns to further reduce potential for behavioural disturbance and limit sound accumulation.
	• Start-up delay and shut-down procedures for dolphins, pinnipeds and turtles.
	• Additional and complimentary fauna detection and management options, such as:
	  ○ Integration of marine fauna observations from other petroleum titleholders and operators in the region, particulalrly in relation to blue whales and SRWs
	  ○ Incorporation of existing SRW monitoring programmes (e.g. DEECA/Arthur Rylah Institute SRW Monitoring Programme)

- Coastal observations for SRWs to inform fauna management measures
- Dedicated support vessel roles and procedures (e.g. "scouting" / "sentry") in marine fauna observations
- Automated camera-based technologies (e.g. WhalePOD, Seiche Smart Visual Detection Systems) to be used in conjunction with other observation and detection techniques, as raised by relevant persons

Commercial fisheries (physical presence / underwater sound):

- Spatial and temporal control options to reduce impacts to commercial fisheries, as discussed with relevant persons during consultation. For example:
  - [redacted] (preference for April to June);
  - Victorian southern rock lobster fishers (preference for February to April);
  - [redacted] – Spatial controls for both sound source operation and vessel operations in relation to CTS and SGHS fishing activities, and a reasonable buffer for avoidance of orange roughy research program sites from April to October;
  - Avoidance of MSS with the giant crab spawning period (as stated in Section 3.6.1 of Appendix F3, 'to avoid any potential effects from the MSS this period should be avoided to align with fisheries protections already in place').

Risks – Unplanned events:

- Consideration of visibility conditions during bunkering operations to reduce the likelihood of hydrocarbon spillage.
- Use of locally available vessels or equipment (particularly support vessels) if practicable to reduce the likelihood of introduction of IMS species not yet established in Australian waters.

Any consideration of temporal controls should be considered with regard to OMR item 2.1.

2.4 ***The EP does not demonstrate that measures will be effective in reducing impacts and/or risks for the duration of the EP – General***

Issue: Enough detail of control measures should be provided to demonstrate that the control measure will be effective in reducing impacts and/or risks for the duration of the EP. The control measures should be evaluated for its functionality, availability, reliability, survivability, independence and compatibility with other control measures. The method of evaluation should also be systematic, applied thoroughly, defensible and reproducible (**GL1721, Section 7**). There are instances throughout the EP where the measures adopted (control measures or activity limitations) to manage environment impacts do not adequately demonstrate their functionality, availability, reliability, survivability, independence and compatibility with other control measures, and/or are evaluated thoroughly, defensible and reproducible.

Reasons: The EP does not provide adequate detail for some of the measures adopted to demonstrate that they will be effective, and/or some measures are not evaluated thoroughly, defensible and reproducible. Examples include, but may not be limited to:

a. Line orientation to minimise impacts to zooplankton in Appendix E2 (i.e. Activity limitation: '*Data acquisition will follow a 130 orientation*') is suggested to have been adopted part because '*Richardson et al. (2017) recommends that to reduced impacts to plankton that a seismic survey run perpendicular to prevailing currents, minimising the duration of exposure of plankton to seismic source, as plankton will be moving away from the seismic source not with it*'. However, the EP does not demonstrate that this measure is practicable, functional or reliable measure to reduce impacts to zooplankton because (i) the prevailing currents and metocean conditions have not been described; and (ii) the rational for this control is unfounded, as Richardson et al. (2017) suggest that '*Surveys conducted into or across prevailing currents would ensure zooplankton particles would be less likely to be impacted multiple times by a seismic gun. Here the impact on zooplankton were greatest when ocean circulation carried zooplankton particles in the same direction as the seismic survey, as the zooplankton were exposed multiple times to the airgun*'.

b. '*If the survey occurs in September, October, November or December, the acquisition lines will be acquired working from the deepest lines first*' and '*If the survey occurs in April, May or June, the acquisition lines will be acquired working from the shallowest lines first*'. It is noted that these activity limitations were adopted to mitigate interactions with Blue Whales as they move towards their summer feeding grounds and to minimise interference with Southern Bluefin Tuna, though the EP also notes their utility in minimising interactions with SRW. However, the functionality and compatibility of these measures in reducing impacts to these receptors is not sufficiently demonstrated, considering the ranges to potential disturbance and noting OMR item 3.1 regarding southern right whales.

c. '*Minimise operational activity deeper than 200 m*' (Section 4 of Appendix A2) – Given the scale of concern raised during consultation attributed to activity overlap interfering with Commonwealth trawl operations and key fishing grounds linked to such depths, vague and ambiguous language such as "minimise" does not demonstrate that the measure will effectively limit on-water interactions.

d. Not enough detail is provided to determine whether the "IMS Risk Assessment Procedure" control measure includes key factors for risk assessments presented in NOPSEMA's Reducing marine pest biosecurity risks through good practice biofouling management information paper.

2.5 ***The EP does not demonstrate that measures will be effective in reducing impacts and/or risks for the duration of the EP – Fauna Management Plan***

Issue: Enough detail of control measures should be provided to demonstrate that the control measure will be effective in reducing impacts and/or risks for the duration of the EP. The control measures should be evaluated for its functionality, availability, reliability, survivability, independence and compatibility with other control measures (**GL1721, Section 7**). Information provided in the EP and the Fauna Management Plan does not demonstrate why measures such as activity limitations, control measures and protection procedures, individually and collectively, will be effective in reducing impacts to marine fauna to ALARP and acceptable levels.

Reasons: The EP and Fauna Management Plan do not demonstrate how fauna management measures, individually and collectively, will function effectively. For example:

a. '*The sound source will only be discharged in the Pygmy Blue Whale foraging BIA when low numbers of Pygmy Blue Whales and other foraging whales are in the BIA off Otway. The relevant area and definition of 'low numbers' of BWs will be decided by the Whale Expert Panel'* – The EP / FMP does not justify why it is appropriate to defer the definition of 'low numbers' or how this relative term will be meaningfully determined. Also, the inclusion of 'other foraging whales' in the pygmy blue whale foraging BIA is ambiguous.

b. Noting that the detection zone / shut down zones (SDZ) for blue whales and southern right whales have been defined as 23 km and 15 km respectively (accounting for predicted distances to both TTS and behavioural disturbance criteria; Section 8 of Appendix E7 and Figure G2-4 of the FMP), the different 10 km and 23 km zones applied to blue whales in the pre-start up and shut-down procedures in the FMP require further detail to explain their effectiveness.

Acceptance Criteria 34(c) – the EP does not demonstrate that the environmental impacts and risks of the activity will be of an acceptable level because:

3.1 ***The EP does not demonstrate that potential impacts and risks of underwater sound emissions will be of an acceptable level – Southern Right Whales***

Issue: The assessment of underwater sound impacts to southern right whales does not demonstrate that key areas of uncertainty in impact predictions are identified and addressed, or that impacts will be managed to acceptable levels (**GL1721, Section 8.3**) or that impacts will be reduced to an acceptable level, consistent with the National Recovery Plan for the Southern Right Whale.

Reasons:

a. The EP does not adequately acknowledge or address uncertainty associated with the prediction of behavioural impacts to southern right whales and does not adequately demonstrate that the Regia MSS will be undertaken in a manner that is not inconsistent with the National Recovery Plan for the Southern Right Whale. Appendix B8 outlines the exposure criteria that have been adopted for the assessment of behavioural responses from marine mammals to impulsive sound, which include the interim NMFS 160 dB re 1 µPa (SPL) step function criterion for impulsive sound. However, this criterion does not account for uncertainty regarding behavioural impacts to southern right whale migration (including pregnant females and mother-calf pairs) and reproduction (including calving, nursing, accompanying dependent young).

b. Also, noting the high site fidelity displayed by southern right whales and the potential duration that pregnant females and females with calves may be present in the region while the survey is being undertaken, the assessment of acute response thresholds may not adequately consider longer term sustained/repeated exposures and other relevant exposure context (e.g. as per Southall et al. [2021]) are also not clearly described or assessed.

c. Appendix F3 states that there is 'an increase in the long-term population trend for southern right whales, albeit slowly for the eastern population, which has been achieved whilst co-existing with marine seismic surveys, noting there has been >80 marine seismic surveys in the last 60 years in the Otway region, including at least 10, 3D surveys in the last 20 years'. The validity of this assessment or relevance of past seismic surveys are unclear, given that the timing of past seismic surveys relative to the seasonal distribution of southern right whales in the region, the proximity of the surveys to reproduction areas and the core aggregation at Logan's Beach, or whether impacts to southern right whales were monitored during or after these surveys, are not presented or evaluated.

3.2 ***The EP does not demonstrate that potential impacts and risks of underwater sound emissions will be of an acceptable level – Pinnipeds***

Issue: The assessment of underwater sound impacts does not demonstrate that pinnipeds are thoroughly described or assessed commensurate to the magnitude of impacts and risks arising from the activity (**GL1721, Section 6.3**), or that impacts will be managed to acceptable levels (**GL1721, Section 8.3**).

Reasons:

a. Section 4 of Appendix E7 provides a description of otariid pinnipeds. However, Long-nosed Fur Seal, an otariid species that may occur in the region, has not been described or assessed, but Southern Elephant Seal, a phocid pinniped species that is unlikely to occur has been described.

b. The assessment of behavioural impacts to the breeding colony of Australian Fur Seals at Deen Maar is based on predicted behavioural disturbance ranges and proximity of the survey relative to the colony and haul out site, but does not adequately describe or assesses impacts to their foraging or impacts to their prey.

3.3 ***The EP does not demonstrate that potential impacts and risks of underwater sound emissions will be of an acceptable level – Little penguins***

Issue: The assessment of underwater sound impacts does not demonstrate that little penguins are thoroughly assessed commensurate to the magnitude of impacts and risks arising from the activity (**GL1721, Section 6.3**), or that impacts will be managed to acceptable levels (**GL1721, Section 8.3**).

Reasons:

a. The impact assessments (Appendix E5 and F3) describe the little penguin colonies and populations at Deen Maar, Middle Island and London Bridge. The assessments should also clarify the population status of other past/present little penguin colonies shown in Figure F3-1 and raised by relevant persons during consultation (Person ID 716) (e.g. Gibson Steps, Lawrence Rocks, Griffith Island and Portland Harbour), noting that some but not all of these colonies are included in impact analyses in Appendix F3 (e.g. and Figure F3-4).

b. The impact assessments consider breeding season daily foraging ranges, including those reported for penguins at the London Bridge colony (Berlincourt & Arnould 2015). However, the foraging directions, core foraging areas and influence of environmental conditions on foraging behaviour presented in the same report are also relevant to the impact assessment.

c. Noting that the two alternative windows for acquisition of the Regia MSS may overlap different life stages for little penguins, the impact assessment does not currently address impacts during both the guard (provisioning) stage and post-guard stage (e.g. Figure F3-2 indicates only the April-June survey period).

d. Analysis in Appendix F3 considers the amount of time and proportion of core foraging habitat that the Regia MSS "seismic area" will intersect with, but does not adequately consider the amount of time and proportion of core foraging habitat that potential behavioural disturbance effects intersect, a concern raised by relevant persons (Person ID 716).

e. The impact assessment does not adequately consider indirect effects of sound to the distribution and availability of key prey, which includes sound-sensitive Clupeid fish species (e.g. sardines).

f. The assessment currently suggests all the habitat running parallel to the coast out to 20km will provide suitable feeding opportunities, but does not adequately address the issue of energetics, provisioning, fitness and survival that may occur as a result of changes to prey distribution and foraging durations, as raised by relevant persons (Person ID 716).

3.4 ***Underwater sound model predictions for marine mammals need to consider the best available science and appropriate impact threshold criteria***

	Issue: The EP must provide evidence that all impacts and risks (in particular to protected matters) will be managed to acceptable levels, and Areas of uncertainty in predictions of impact and risk are identified, acknowledged and addressed (**GL1721, Section 8.3**). The evaluation and prediction of impacts from acoustic emissions should be supported by the best available science (i.e. relevant, applicable, contemporary, peer-reviewed and published by reputable sources) and appropriate impact threshold criteria (**IP1765, Sections 3.3 and 3.4**). On 24 October 2024, the United States' National Marine Fisheries Service (NMFS) published a peer-reviewed update to their Technical Guidance for Assessing the Effects of Anthropogenic Sound on Marine Mammal Hearing. The updates include new information and changes to sound impact threshold, which are likely to alter the predicted effects ranges for marine mammals detailed in the EP. **Reasons:** The updates to the NMFS technical guidance include changes to the auditory weighting and exposure function parameters for marine mammal hearing groups, as well as thresholds for the onset of auditory injury and temporary threshold shift (TTS) in marine mammal hearing for non-impulsive and impulsive sound sources. The updated NMFS technical guidance includes contemporary published scientific information and thresholds that CGG should consider in the assessment of underwater sound impacts to marine mammals. CGG should review the updated NMFS technical guidance and consider how it may affect the outcomes of the predictive acoustic modelling and impact assessments already undertaken, as well as the selection or effectiveness of control measures.
3.5	***The EP does not demonstrate that fauna detection methods will be effective in reducing impacts and risks to acceptable levels, or that the effectiveness of fauna detection methods has been thoroughly evaluated.*** **Issue:** The EP must include evidence that all impacts and risks (in particular to protected matters) will be managed to acceptable levels (**GL1721, Section 8.3**) In addition, enough detail of control measures should be provided to demonstrate that the control measure will be effective in reducing impacts and/or risks for the duration of the EP. Control measures should be evaluated for their functionality, availability, reliability, survivability, independence and compatibility with other control measures. The method of evaluation should also be systematic, applied thoroughly, defensible and reproducible (**GL1721, Section 7.3**). The EP does not provide sufficient evidence that the approach to fauna detection (particularly in relation to southern right whales and blue whales) will be effective in reducing impacts and risks to blue whales and southern right whales to an acceptable level, or that the proposed methods or other available options have been evaluated thoroughly, or are defensible and reproducible. **Reasons:** CGG has proposed a combination of visual observations (vessel-based marine fauna observers [MFOs]), passive acoustic monitoring, near real time acoustic detection monitoring, and aerial surveys to ascertain the presence of whales. An Activity Action Zone (AAZ) and Shut Down Zones (SDZs) have been defined based on the maximum effects distances predicted by acoustic modelling, which for blue whales and southern right whales extend up to 23 km and 15 km

respectively. CGG proposes to monitor these zones using a number of visual and acoustic detection methods, including passive acoustic monitoring (PAM) and acoustic detection monitoring (ADM) deployments.

Visual observations proposed to be undertaken by MFOs on the survey vessel during daylight hours are described in the EP as being effective up to ~5km in optimal conditions, and the PAM system to be used on the survey vessel is described as having a detection distance ~10 km from the vessel. The EP further states that 24-hour PAM and ADM will be the primary whale detection methods at night and during low visibility conditions.

Noting the potential nature and scale of impacts arising from the activity, and the criticality of effective fauna detection to inform impact management, the effectiveness of the proposed detection methods (individually and collectively) has not been demonstrated in the EP because:

- Appendix F5 (Marine Mammal Detection Technology Assessment) presents the findings of a preliminary desktop assessment of available whale detection technologies. Appendix F5 considers aspects including availability, practicality of implementation, possible safety concerns, and some high-level information on past performance for each of the technologies. However, the effectiveness and capability of detection technologies in the specific circumstances of the Regia MSS and its predicted impacts are not evaluated in sufficient detail within Appendix F5. It is also unclear how information in Appendix F5 has been considered or what further evaluation has since been undertaken by CGG in determining the whale detection methods proposed in Section 8 of Appendix E7. Generally, the high-level ALARP assessments of marine fauna detection options presented in Appendix F2 (ALARP assessment) are not thorough and are sometimes inconsistent with options described as practicable in Appendix F5. For example, Appendix F5 describes practicable and complimentary acoustic detection solutions, including the potential use of supplementary PAM vessels, and consideration of a hybrid acoustic monitoring array using a combination of tethered buoys in the shallower waters and unmanned surface vessels or underwater gliders in deeper waters. However, these approaches have either not been considered or are not thoroughly evaluated in Appendix F2.
- It is not appropriate for the EP to defer parts of the detection strategy (e.g. design and layout of the ADM systems, frequency and design of aerial surveys) to the Whale Expert Panel, without giving details for their fundamental features, e.g. objectives and criteria that would need to be met to achieve the objectives of the broader detection strategy ensure it will be effective.
- As the specific PAM and ADM systems to be used are not specified in the EP or not known, of the EP does not provide confidence that methods that CGG eventually select for acoustically detecting low-frequency species such as blue whales/pygmy blue whales and southern right whales will be effective over the proposed distances. Only general statements of detection distance ranges for unspecified systems are provided in Appendix E7 and Figure G2-2. There is inadequate information or consideration of relevant intrinsic factors such as technical information (e.g. hydrophone operating frequencies, appropriateness of detection and classification software), documentation of the efficacy of their detection capabilities (e.g. range, bearing, detection rates for key species of interest, or the influence of ambient noise levels, seismic signals and low-frequency mooring self-noise on the detection capabilities), or the adequacy of data streaming (range and timeframes) to inform real time / near-real time decision making. There is also inadequate consideration of the extrinsic factors, such as call production rates and call detection ranges for key species.
- Section 8 of Appendix E7 states that a single ADM unit will be tested to assess the efficacy of the system, including the performance of data streaming (e.g. transmission range to onshore monitoring station), information management and delivery systems. There is no further information on the timing or status of this trial. The information from CGG's proposed trial is fundamental to the evaluation of the effectiveness of the acoustic monitoring approach, but no details on the trial, such as its objectives and assessment methods, including as they relate to requirements of system performance to ensure

impacts will be acceptable, are presented. If there have been other system efficacy trials undertaken elsewhere in the world that may be relevant to low-frequency species, these also have not been provided.

- The efficacy of the proposed towed PAM system(s) also requires further information to demonstrate its effectiveness in detecting low-frequency species such as blue whales and southern right whales, including the range of detection for these species during seismic surveys. It is noted that PAM technologies being considered by CGG for the Regia MSS have been trialled in other locations around the world and utilised during other marine seismic surveys in Australian waters (including for the detection of blue whales), which may provide CGG with further information with which to evaluate system performance and effectiveness.

The overall fauna detection strategy (i.e. all acoustic and visual techniques, individually and collectively) requires further consideration of the relevant intrinsic and extrinsic factors to understand how effective the monitoring techniques will be to inform mitigation decisions, and demonstrate that impacts will be reduced to an acceptable level.

When addressing the issue above, CGG should also have regard to OMR item 2.3 (consideration of other reasonable fauna detection options), OMR item 2.5 (Fauna Management Plan), and OMR item 3.1 (demonstrating an acceptable level of impact to southern right whales).

CGG should also consider how the ADM component of the activity is communicated to other marine users and/or potentially affected relevant persons, and how the potential impacts or risks from the deployed array (i.e. physical presence and interactions) are assessed and managed.

Further, CGG should consider where ADM devices (including their deployment and retrieval) are part of the petroleum activity covered under the EP, as well as how this might affect the authority application process.

3.5 ***Defined acceptable levels of impact are not clear or appropriate***

Issue: Some defined aspect-level acceptable levels of impacts and risks are not appropriate and relevant to the environment that may be affected by the activity (**GL1721, Section 8.3**), where an 'acceptable level' is the specified amount of environmental impact and risk that an activity may have which is tolerable, is consistent with all relevant principles, and does not compromise the management/conservation/protection objectives of the environment (**GN1344, Section 3.5**).

Establishing what an acceptable level is, needs to be informed by Australian Government policies, relevant documentation on the DCCEEW website relevant to matters protected under Part 3 of the EPBC Act, guidelines for environmental management and by consultation with relevant persons (**GL1721, Section 8.2**). To define the acceptable level of impacts and risks a titleholder should have regard to all relevant context including, but not limited to the principles of ecologically sustainable development (ESD), other requirements (e.g. relevant policies, standards, conventions, statutory instruments such as recovery plans for threatened species), and other internal/external context, guidance and best practice (**GN1344, Section 3.5**).

Reasons: Examples of defined acceptable levels that do not appropriately reflect a tolerable level of environmental impact and risk include:

- Appendix E2: '*Plankton communities should not be exposed to peak sound levels of >210dB SELcum24hr for longer than 12 hours*'. This example is not clear or appropriate, primarily because it reflects a sound exposure criterion for TTS but does not provide a meaningful, tolerable level of environmental impact to plankton communities. Secondary to this, the defined level is not clear or appropriate because it is inconsistent with the PK criterion and effects range that

underpins the evaluation of impacts to zooplankton, the acoustic modelling demonstrates that the selected 210 dB SEL_{24h} criterion is exceeded, and it is also unclear why CGG has applied a 12-hour period to the criterion.

- Similar acceptable levels (based on exceeded sound exposure criteria and representative of a single acoustic effect instead of a tolerable level of environmental impact) are also defined for fish (Appendix E3), invertebrates (Appendix E4), turtles (Appendix E6), 'all cetaceans' and otariid pinnipeds (Appendix E7).
- Appendix E5: '*Diving birds can continue critical life-cycle behaviours without injury (PTS)*'. This example is not appropriate as limiting effects to PTS discounts other (e.g. behavioural) effects to birds such as little penguins, which have the potential to lead to impacts to critical life-cycle behaviours that may not be tolerable.

Further, between the defined acceptable levels at the activity level for biological/ecological values (which primarily reflect the ESD principle for the conservation of biological diversity and ecological integrity) and the defined acceptable levels at the aspect level, the EP does not demonstrate that acceptable levels have been informed by relevant policy documents, guidance, wildlife conservation plans, recovery plans, management plans, gazettal instruments under the EPBC Act, conservation advices, marine bioregional plans or other relevant documents

In regard to First Nations cultural heritage, it is not clear what, policies, documents or information received through consultation with relevant persons may be relevant to defining more appropriate and meaningful acceptable levels of impact. For example:

- Appendix F4 provides an activity-level defined acceptable level of '*Impacts and risks to cultural features including cultural values, traditions, or practices, will be temporary / reversible, small scale, and/or low intensity*'. It is not clear what relevant information was considered by CGG when defining this level of impact as being tolerable to First Nations peoples. Additionally, this appears to allow for impacts and risks to First Nations Cultural features including cultural values, traditions or practices to be permanent (i.e., not temporary or reversible) as long as they are 'small scale' or 'low intensity'. Again, it is not clear if this would be tolerable or acceptable to First Nations peoples.

When addressing the above issue, CGG should also review parts of the EP that compare predicted levels of impact with the defined acceptable levels (i.e., Section 9 of each Appendix D and E, and Appendix F4) to ensure they clearly relate to the defined acceptable levels and provide clear comparisons with the predicted levels of impact made in the impact assessments.

This letter point should be read in conjunction with OMR item 4.1 regarding EPOs linked to acceptable levels.

3.6 ***The EP does not clearly demonstrate that the proposed activity is not inconsistent with a management plan in operation for a Commonwealth reserve (e.g. an Australian Marine Park)***

Issue: The EP does not clearly demonstrate that the proposed activity is not inconsistent with relevant management plans for Australian Marine Parks (AMPs).

Reasons: The EP must demonstrate that the proposed activity is not inconsistent with a management plan in operation for an AMP. It is noted that Appendix F4 (Section 5.8) states '*It respects the management plans in place for Commonwealth reserves, such as Australian Marine Parks, and upholds the Australian IUCN Reserve Management Principles. It shows that the activity will not have unacceptable impacts on the values of these protected areas'*, further justification should

be provided to clearly identifies and links relevant AMP values, the predicted levels of impact to those values, and demonstrate how the predicted levels of impact are not inconsistent with the relevant marine park management plan objectives.

3.7 **Areas of uncertainty in predictions of impact and risk are not correctly identified, acknowledged and addressed – Commercial fisheries**

Issue: The EP does not demonstrate that that the environmental impacts and risks of the activity to commercial fisheries will be of an acceptable level if all areas of uncertainty in predictions of impact and risk are not correctly identified, acknowledged and addressed (**GL1721, Section 8**).

Reasons: In Section 8.3 of Appendix E1, the EP states there is low uncertainty in the assessment of impacts associated with the physical presence of the survey vessel to the functions, interests and activities of other marine users. It provides a series of justifications and measures to how uncertainty will remain low during the activity. Absent from consideration, is the uncertainty linked to data underpinning the commercial fishing review (Appendix B6) which informs impact evaluation. Uncertainty of the commercial fisheries historical catch and effort data is evident in the following forms:

- Data confidential blocks / maximum area fished: Due to privacy constraints, relative fishing intensity is unknown when four or less operators have actively fished in a designated block in Commonwealth-managed fisheries. CGG's treatment of these blocks suggests that these blocks represent low fishing activity (see Table E1-1 of Appendix E1). A data confidential block, in fact, may correspond to high, medium or low fishing intensity for up to four operators in each block. Thus, there is uncertainty in the degree of impact the seismic activity may have on the commercial fisheries with overlap of this nature (e.g., Eastern Tuna and Billfish Fishery, Shark Hook sub-sector Fishery, and Danish Seine sub-sector Fishery). The coarse resolution of the blocks (111 x 111 km blocks) adds to the uncertainty in predicting potential for interference.
- Historical data: The data utilised to inform the physical presence impact assessment (Appendix E1) is not always up-to-date (e.g., up to five years old for Commonwealth-managed fisheries). Historical data may provide an indication of possible future fishing locations and indicative effort; however it is not without predictive uncertainty, especially where it has utilised data that is no longer contemporary.
- The titleholder has introduced further uncertainty in the mismatch of area boundaries used to detail historical fishing activity (Commercial Fishing Review; Appendix B6) and later evaluate (Appendix E1) physical presence impacts to commercial fisheries. This is discussed further in OMR # 1.7 (Acceptance criteria 34(a)).

In acknowledging all possible forms of uncertainty, CGG could reconsider the uncertainty evaluation for the assessment of impacts associated with physical presence (Section 8.3 of Appendix E1), with due consideration to the uncertainty in the data underpinning the commercial fishing review. In addition, CGG could distinguish its evaluation of fisheries where there is activity overlap with a data confidential block from fisheries where there is activity overlap with 'known' low fishing intensity (i.e., on review of Table E1-1 of Appendix E1, each scenario is treated the same).

Acceptance Criteria 34(d) – the EP does not provide for appropriate environmental performance outcomes, environmental performance standards and/or measurement criteria because:

4.1 ***The EP does not provide appropriate environmental performance outcomes (EPOs) linked to acceptable levels of environmental impact***

Issue: Environmental performance outcomes (EPOs) should be linked to acceptable levels of environmental impact (**GL1721, Section 9.3**), where an environmental impact is defined as a change to the environment (regulation 5) and an 'acceptable level' is the specified amount of environmental impact and risk

that an activity may have which is tolerable (**GN1344, Section 3.5**). EPOs should also address the specific environmental features or receptors that may be affected by the activity, and reflect levels of environmental performance equal to or better than the defined acceptable level of environmental impact for those features or receptors (**GN1344, Section 3.7**). Currently, some EPOs presented in Appendix G1 of the EP are not outcomes linked to acceptable levels of environmental impact, or do not reflect levels of environmental performance equal to or better than the defined acceptable level of environmental impact to environmental features or receptors.

Reasons: Some EPOs provide clear and appropriate environmental outcomes linked to acceptable levels of environmental impact, for example, '*No death or injury to fauna, including listed threatened or migratory species, from the activity*' in relation to the risk of collisions with marine fauna. However, a number of other EPOs do not reflect appropriate environmental outcomes linked to acceptable levels of environmental impact. Instead, many EPOs appear to be statements of performance that are more appropriate as environmental performance standards (EPSs) for control measures (or activity limitations). For example:

- 'No discharge of the sound source in January, February, or March'
- 'Sound source shutdown when any cetacean is observed within 500 m of the sound source'
- 'The sound source will not remain stationary at full power at any time'
- 'No vessel movements within 5 km of the Twelve Apostles State Marine Park'
- 'The sound source will not remain stationary at full power at any time'
- 'The community and relevant persons are informed about the operational details of the activity and relevant persons objections and claims are promptly assessed'
- 'Maintain arrangements to respond to an unplanned release of fuel in accordance with the OPEP'

In addition, some EPOs do not reflect either the activity-level or aspect-level defined acceptable levels. For example, the EPO for plankton, zooplankton and krill in Appendix G1 is '*The sound source will not remain stationary at full power at any time*', which is not clearly linked to the aspect-level acceptable level '*Plankton communities should not be exposed to peak sound levels of >210dB* $SEL_{cum24hr}$ *for longer than 12 hours*' or the activity-level biological/ecological acceptable levels '*Impacts and risks to* [biological/ecological] *features will be temporary / reversible, small scale, and/or low intensity damage to the overall health, diversity, or functioning of the ecosystem*'. This example is representative of a broader issue with the EPO's and the defined acceptable levels in the EP, and this letter point should be read in conjunction with OMR item 3.5 regarding defined acceptable levels of impact.

The EPOs should be clearly linked to and address all of the identified impacts and risks. The EPOs should be linked to, equivalent to or better than the acceptable level(s) of environmental impact and risk from an activity. Current EPOs that provide EPS-type statements of performance may be appropriate as EPSs for adopted control measures.

4.2 ***The EP does not clearly provide EPOs for impacts and risks to First Nations cultural features and values***

Issue: The EP does not demonstrate that it provides for appropriate environmental performance outcomes (EPOs) as the EP does not clearly set levels of performance for impacts and risks to First Nations cultural features and values.

	Reason: The EP does not include EPOs that clearly address impacts and risks to First Nations cultural features and values. As a result of this, the EP does not demonstrate that there is a measurable level of performance that will be met during this activity and subsequently does not provide confidence that the activity is able to be managed to ensure that all impacts and risks to First Nations cultural features and values are managed to acceptable levels.
4.3	***Some EPSs cannot be easily monitored for compliance*** **Issue:** The EP does not demonstrate that it provides clear EPSs and measurement criteria that can be easily monitored for compliance and demonstrate that the desired environmental performance is being met (**GL1721, Section 9.3**). **Reason:** Some EPSs/MC do not demonstrate that the desired environmental performance is being met because they provide for monitoring whether data has been collected, or a person has undertaken a task, rather than whether that data itself demonstrates compliance with an environmental mitigation measure. For example, while compliance with EPS '[The Quality Control and Reporting Representative will] *Always monitor the location and planned activities of the contracted vessels in accordance with the Sail Line Plan*' can be confirmed through the presence of continuous vessel tracking data records, the presence of this data does not directly demonstrate that vessels have complied with measures outlined in the Sail Line Plan. CGG should consider how to best modify the EP to demonstrate that all commitments within the EP (particularly key measures to reduce impacts and risks from the activity to ALARP and acceptable levels) have appropriate arrangements to ensure they are implemented effectively and monitored for compliance throughout the life of the EP and during the activity. This could be achieved by including additional EPSs that provide clear and specific levels of performance for key mitigation measures such as activity limitations and/or including more robust and detailed assurance measures for monitoring compliance with the whole EP through measures within the Environmental Management System. This item should be considered in conjunction with OMR items 5.1 and 5.2.
Acceptance Criteria 34(e) – the EP does not include an appropriate implementation strategy and/or monitoring, recording and reporting arrangements because:	
5.1	***There are not appropriate assurance mechanisms – Environmental Compliance Register*** **Issue:** The ECR mechanism does not demonstrate that the auditing process will provide for sufficient review of the implementation strategy or other commitments in the EP if they are not included as performance measures. **Reasons:** The implementation strategy describes development of an ECR which will include controls, performance standards, performance outcomes and measurement criteria and monitor compliance with these; however, it does not appear to provide for monitoring compliance with the activity description, activity limitations or other commitments in the EP that aren't reflected as control measures, EPOs, EPSs or MC. Additionally, the EPS related to implementing environmental performance audits (Appendix G1, Appendices PDF page 1845) provides for the audit of EPOs and EPSs only. This is of particular importance if the activity limitations outlined in Section 4 of Appendix A2, or other specific measures captured within the Sail Line Plan, which are fundamental to reducing impacts and risks to a range of receptors, are not captured in an EPS. See also OMR items 4.3 and 5.2(b).
5.2	

There are not appropriate assurance mechanisms – Other

Issue: The EP does not demonstrate that the assurance mechanisms for the EP (including audit, review and management of non-conformance) are appropriate (**GL1721, Section 10.3**).

Reasons:

a. When considering the maximum of 60 days acquisition and 90 days operations:
    i. The commencement audit being undertaken "once within the first 30 days of the survey starting" (Appendix B3, Section 5.6.3) does not appear appropriate as an assurance mechanism, considering acquisition could potentially be halfway completed if conducted at the end of the 30-day period.
    ii. The EP does not demonstrate that a monthly environmental performance audit (as outlined in an EPS on Appendices PDF Page 1845) is sufficient as an assurance mechanism, considering the importance and in some cases complexity of key performance measures that will require ongoing monitoring to effectively ensure compliance.

b. The commencement audit outlined in Appendix B3 Section 5.6.3 provides for checking conformance with regulatory requirements detailed in the ECR rather than the whole EP (see also OMR item 5.1).

c. Some assurance measures are high-level and lack detail. For example:
    i. Section 5.6.3 Appendix B3 outlines that the commencement audit will "ensure that the relevant documents that support implementation of the management and mitigation measures in the EP are accessible and have been communicated to the contractor and vessel crew" but does not specify which documents this includes.
    ii. Section 5.6.3 Appendix B3 outlines a daily report that will be reviewed at least weekly or on request, but it is unclear what information will be recorded in the daily reports for review.
    iii. Environmental Management System EPS 'Conduct daily informal HSE checks of vessel operations to ensure that the EP commitments are implemented' does not provide any further detail as to what these checks will include. Use of the word "informal" also creates uncertainty as to whether non-compliances would be effectively captured and actioned through this process.

d. Section 5.4.6 of the Implementation Strategy in Appendix B3 states that CGG proposes to attempt sound source verification using the hydrophones in the towed streamers, as a specific measure to ensure effectiveness of control measures. However, as noted by CGG, the method is unreliable. Therefore, it is unclear why CGG propose attempting such a verification and the approach is not an appropriate assurance mechanism.

e. Measures should be incorporated into the EP to ensure that relevant spatial data (e.g., survey boundaries, spatial exclusions, BIAs) are accurately communicated to the survey contractor, is incorporated into the survey vessel and support vessel systems.

f. The EP includes the statement "where more immediacy is required, non-compliances will be communicated to relevant personnel immediately and responded to as soon as possible" and it is unclear under which circumstances CGG may consider it appropriate for a non-compliance to not be communicated responded to as soon as possible.

g. The EP states that the performance of key equipment as described in this EP (i.e., oil-in-water separator) will be checked to ensure ongoing reduction of risks and impacts to ALARP but does not specify which equipment besides the oil-in-water separator will be checked and at what frequency.

5.3 ***Levels of competency for persons responsible for implementing critical control measures have not been clearly described***

Issue: The EP should describe how role awareness, training and competency will be maintained for the duration of the activity, for all personnel and contractors with responsibilities under the EP. Particular emphasis should be placed on describing training and competency for those persons who are responsible for implementing critical control measures. Doing so will help demonstrate that those control measures can be effectively implemented (**GN1344, Section 3.10**).

The effectiveness of fauna detection measures will be influenced by the training and competency of the personnel implementing them. Consideration should be given to minimum competency requirements and personnel numbers relative to expected level of fauna encounters and the measures being applied, e.g. passive acoustic monitoring or visual observations (**IP1765, Section 3.5**).

The required personnel numbers and levels of competency for key roles have not been adequately defined in the EP.

Reason: The level of training and competency and personnel numbers required for MFOs, PAM and ADM operators, and the Whale Expert Panel is critical for the successful implementation of fauna detection management measures. The required personnel numbers and levels of competency for these roles have not been defined in the EP.

5.4 ***There is not an appropriate OPEP***

Issue: The OPEP does not demonstrate that it is appropriate for the nature and scale of the activity (**GL1721, Section 10.3**).

Reasons:

a. The OPEP states that it is based on a different and more volatile/less persistent fuel type (MGO – for example, Appendix G3 Section 7) than what the EP describes will be used in the activity (MDO – for example, Appendix D4 Section 2.1).

b. The OPEP defines a Level 2 spill as a loss of 286m^3, which is larger than the worst-case spill scenario defined for the Regia MSS.

c. The OPEP does not provide sufficient detail regarding notifications that will be provided in the event of a spill. For example:

- The OPEP states that "*Further reports will be sent at regular intervals to inform relevant stakeholders and agencies (AMSA, NOPSEMA, CGG, survey contractors, etc.)*" and some further information about reporting is included in Appendix B3, but it remains unclear whether "relevant stakeholders and agencies" includes all relevant persons or not.

- The OPEP states that "*commercial and recreational fishers and other users that operate in the area would be advised of a large spill and response activities via CGG's 24-hour look-ahead*"; however, a "large" spill is not defined, and it is unclear how operators who had not requested to receive these look-aheads would be notified.

5.5 ***The management of knowledge process is unclear***

Issue: There is not an appropriate management of knowledge process in place (**GL1721, Section 10.3**).

Reason: Appendix B3, Section 5.3.4 provides a list of documents that will be available to all staff and contractors and, although this list includes a copy of the implementation strategy, it is unclear whether full versions of key documents outlined in the implementation strategy (e.g., the Sail Line Plan, the Fauna Management Plan, etc.) will also be made available.

5.6 ***No assurances that control measures in the EP will continue to remain effective***

Issue: It is not clear how certain control measures in the EP will continue to be effective in reducing impacts and risks to ALARP and acceptable (**GL1721; Section 10.3**).

Reasons:

a. The OAP (Appendix G4), which is an essential process for ensuring unavoidable impacts (i.e., those that remain following all reasonable attempts to avoid on-water interferences) to commercial marine users are reduced to acceptable levels, is in 'draft' form (e.g. '*KSV has undertaken preliminary consultation with some fishing industry associations prior to publishing this draft protocol*'; Section 1.6 of Appendix G4). As a result of its draft status, it is unclear if the OAP has been reviewed by relevant and potentially impacted fishing stakeholders of the Otway area, or if it will be finalised in its current form.

b. As a key process linked to acceptable outcomes for commercial marine users; feedback from ongoing consultation and amendments to the OAP should be captured in the Implementation Strategy, to ensure impacts to all commercial marine users remain acceptable. Section 4 of the OAP (Appendix G4) specifies periodic review and maintenance (on a 12-monthly basis) of the protocol however there is no explicit mention of continual OAP review covered in the Implementation Strategy.

5.7 ***The EP does not provide for appropriate ongoing consultation***

Issue 1: The EP does not demonstrate that ongoing consultation arrangements are in alignment with NOPSEMA's Environment Plan Content Requirement guidance note.

Reason 1: The activity may be undertaken up until October 2028 and, although the implementation strategy allows for new relevant persons to self-identify (Appendix B3, Section 8.5), it does not provide for CGG to perform a periodic review of relevant persons to ensure new relevant persons are identified and consulted over the life of the EP (**GN1344, Section 3.10.3.6**).

Issue 2: The EP does not demonstrate that ongoing consultation arrangements with recreational divers are sufficient.

Reason 2: The implementation strategy (Appendix B3, Section 8.1) does not provide timing for the commitment to placing adverts in local papers and dive shops to inform recreational divers about the diving SIMOPS plan to demonstrate sufficient time will be provided to raise awareness and encourage participation.

Acceptance Criteria 34(g)(i) – the EP does not demonstrate that the consultations required by regulation 25 have been carried out, because:

6.1 ***It is not clear that effective consultation has taken place with each relevant person***

Issue: The EP does not demonstrate that effective consultation has taken place with each relevant person (GL1721, Section 12.3). Effective consultation includes relevant persons have been provided sufficient information (regulation 25(2) of the Environment Regulations), and relevant persons have been provided a reasonable period to consider information and make an informed response (regulation 25(3) of the Environment Regulations).

Reasons: NOPSEMA is aware, from being copied into correspondence from [redacted] *acting* on the behalf of [redacted]) dated 11 November 2024, that [redacted] has now finalised and given CGG a copy of the [redacted] The EP does not describe or address the [redacted] in demonstrating that effective consultation has taken place with [redacted] in the manner required under regulation 25 of the Environment Regulations.

6.2 ***The report on consultation is not in line with the content requirements***

Issue: The EP does not contain a report on consultation that includes the prescriptive elements outlined in regulation 24(b) of the Environment Regulations (GL1721, Section 12.3).

Reasons:

1. The full text records for the following relevant person responses described within the report on consultation (i.e. Appendix C2) could not be located in the sensitive information part of the EP:
    a. [redacted]
    b. [redacted].
2. The report on consultation does not include any details or records relating to the correspondence described at item 7.1 from [redacted] *acting* on the behalf of [redacted] dated 11 November 2024 despite this being sent to CGG prior to the submission of the EP to NOPSEMA on 12 November 2024. The report on consultation should include details and records of any correspondence between CGG and relevant persons, up until the point that the EP is submitted to NOPSEMA, in accordance with the requirements under regulation 24(b) of the Environment Regulations.

Acceptance Criteria 34(g)(ii) – the EP does not demonstrate that appropriate measures have been adopted, or proposed to be adopted, because of consultation, because:

7.1 ***Not all information gathered through consultation has been incorporated into the EP***

Issue: Information gathered through the consultation process has not always been incorporated, considered and evaluated in the rest of the EP and effectively informed the identification of environmental values and sensitivities to ensure impacts and risks are reduced to ALARP and acceptable (**GL1721, Section 12.3**).

Reasons:

1. As set out in OMR item 1.8 above, there is some information that was provided by [redacted] during consultation in relation to First Nations cultural features and values that has not been incorporated into the description of the existing environment and considered elsewhere in the EP where it may be relevant.
2. As set out in OMR item 3.3 above, there is some information that was provided by [redacted] during consultation in relation to impacts to little penguins that has not been adequately accounted for within the impact and risk evaluations for the activity.
3. As set out in OMR item 1.2 above, additional spatial analysis of overlap with Commonwealth trawl historical fishing areas at an appropriate scale, as requested during consultation by [redacted] and provided by CGG in subsequent exchanges ([redacted] has not been incorporated into the EP or applied for other key fisheries predicted to be impacted.
4. As set out in OMR item 2.3 above, there is no consideration given in the EP to avoiding the western orange roughy data collection (research) program (WORDaC) Central Sampling Area despite this being a key concern raised in consultation by [redacted], requesting "that no MSS collection or turning overlaps these areas and further that there be a reasonable buffer to ensure that fish are not disturbed" [redacted]). While CGG committed to not acquiring during the months May to October ([redacted]), CGG's assessment of merit or responses to [redacted] do not make clear if this commitment relates to the Central Sampling Area or the specific mapped points, and also does not make clear if a separation distance would apply. [redacted] also subsequently requested exclusion to start a month earlier (April) ([redacted]), which does not appear to have been considered in CGG's assessment of merit or subsequent responses to [redacted].
5. Information about the risks of unexploded ordinances (UXOs) that was given by [redacted] during consultation has not been thoroughly accounted for by CGG within the impact and risk evaluations for the activity (i.e., UXOs are only addressed within the cumulative impact assessment scoping tool and not elsewhere).

7.2 ***Not all assessments of merit and all responses to objections and claims are reasonable and supported***

Issue: CGG's assessments of merit and responses to objections and claims made by some relevant persons do not always demonstrate that they are reasonable and supported to inform the appropriateness of the measures adopted because of consultation (**GL1721, Section 12.3**).

Reasons:

1. There are some assessments of the merits and response statements presented in the EP (i.e., Appendix C2) that apply to claims about commercial fisheries compensation that does not adequately describe how these claims were taken into consideration by CGG. In particular, reference is made to OMMIC consultation that is separate to the relevant persons consultation carried out by CGG in the preparation of the EP (and therefore not included in the EP submission for NOPSEMA's visibility). This specifically relates to claims raised by the [redacted] via [redacted] (i.e., recommendation of the Otway Adjustment Protocol (OAP) to consider 'retirement of quota'; [redacted] and by [redacted] (i.e., clarification pertaining to the loss adjustment in the OAP; [redacted]
2. The assessment of the merits and response statements presented in the EP (i.e., Appendix C2) that apply to [redacted]'s two discrete preferences relating to the environmental management of the activity (i.e., firstly for the activity timing to occur within the April to June period, and secondly for the survey to start in shallow waters and progressively move to deeper regions by the end of the survey period; [redacted] does not adequately describe how and why it is

reasonable for CGG to have incorporated the following activity limitation in response - "if the survey occurs in April, May or June, the acquisition lines will be acquired working from the shallowest lines first" (which does not appear to be an accurate representation of [redacted]s preferences). Further to this, the EP is lacking content showing that consideration was given to ASBTIA's preferences by CGG during the preparation of the EP (also refer to OMR item 2.4).

7.3 ***Not all assessments of merit and all responses to objections and claims are reasonable and supported –*** [redacted]

Issue: CGG's assessments of merit and responses to objections and claims made by [redacted] and [redacted] regarding commercial fisheries data analyses do not always demonstrate that they are reasonable and supported to inform the appropriateness of the measures adopted because of consultation (**GL1721, Section 12.3**).

Reasons: The full text records of consultation with [redacted] and Annex 1 of Appendix C1 present an extensive record of consultation with [redacted], including the issue of the adequacy of the data used to assess possible impacts to commercial fisheries, in particular to the Commonwealth Trawl Sector (CTS) and the Shark Gillnet and Hook Sector (SGHS) of the Southern and Eastern Scalefish and Shark Fishery (SESSF). [redacted] and CGG present reasons for and against utilising more detailed fishing effort and catch (tonnage and value) data.

However, it is not evident to NOPSEMA if CGG's assessment of the merits of [redacted]' request to use more detailed data is reasonable or supported because the format, resolution, accuracy, reliability and availability of data held by AFMA has not been clearly and explicitly described by either CGG or [redacted]. It is therefore unclear how the AFMA data compares with the ABARES fishing intensity data and other information learned by CGG from relevant fishers.

Consequently, it is also not evident from CGG's assessment of merit and responses to [redacted] whether or not the additional data could improve understanding and further inform:

- minimisation of impacts to the CTS. NOPSEMA notes that CGG has committed in the EP to no acquisition in water depths less than 200m, which indicates that 'remaining overlap with trawl fishing would be outside of 'high' intensity zones', but how CGG would "minimise" operational activities with the CTS remains unclear. Refer to OMR item 2.3 and OMR item 2.4, for further considerations around this activity limitation; and
- measures to reduce interactions with the SGHS. As described in OMR item 2.3, they do not appear to have been considered.

Attachment 2 – Additional items* NOPSEMA *wishes to raise, including editorial matters and errata

Item	Matter to be raised
1	Figures depicting the Environmental Planning Area (EPA) for the activity are inconsistent. For example, Figure A2-1 in the activity description (Appendix A2) includes the whole of Point Nepean within the boundary, but the EPA depicted in Appendix B5 (used to generate Protected Matters Search Tool report) appears to be constrained to the southern coastline of Point Nepean and the Mornington Peninsula.
2	The titleholder response to RFFWI #1 states that "*Map MAP-REG-EPM-076 has been included in the submission"* but this map does not appear to be included. The response also states that "*CGG notes that there are no overlaps with any native title determinations and thus they are not affected by the activity and thus have not been described*" despite the EP (Appendix E1, Section 4.6) stating that "*although Native Title has not been identified to occur within the Operational Area, it is considered possible that cultural values and sensitivities associated with Eastern Maar and Gunditjmara Native Title determinations adjacent to the Operational Area, may be indirectly affected by planned activities*".
3	Maps in Appendix B12 present a series of maps developed during the preparation of the EP. However: • Hyperlinks to maps from the Appendix B12 table of contents direct to elsewhere in the Appendices rather than to the correct maps so the appendix is challenging to navigate. • The content and utility of some maps is not always obvious from the maps or related text in the EP (e.g. a number of maps depicting fishing effort for giant crab and rock lobster, spanning different timeframes, but it is not clear what the primary source of information considered in the impact assessments is). It is not always clear if some of these maps supersede figures/maps in other appendices. • Some maps do not present all relevant and latest survey boundaries (OA, ASA and SAA). Therefore, interpretation of information in these maps and visualisation relative to current OA, ASA and SAA boundaries and the latest impact and risk assessments can be challenging. Hyperlinks to maps should be fixed, the purpose of maps should be clear from the titles or where they are referred to within the text, and the latest boundaries applicable to each of the map's content and purpose should be included.
4	In response to NOPSEMA's RFFWI, CGG added maps MAP-REG-EPM-089_A and MAP-REG-EPM-089_A, stating in the response that single impulse sites and SEL_{24h} scenarios had been included. However, the maps do not include the SEL_{24h} scenarios. These maps should be updated with the SEL_{24h} scenario lines and bathymetry contours to enable a reasonable understanding of the modelling scenarios that have been undertaken for impact prediction relative to the latest survey boundaries and water depths.
5	Mapped underwater noise 'exposure areas' appear inappropriate for some fishery target species in the commercial fishing review (Appendix B6). For example, in Figure 11 of Appendix B6, the legend indicates that a "Fish and Shark Sound Exposure Area" has been used for the Southern Squid Jig Fishery. In Figure 4 of Appendix B6, the "Fish and Shark Exposure Area" has been used for the Small Pelagic Fishery but unclear if it is representative for some target species (e.g., Australian sardine) with specialised hearing structures.
6	The EPO for IMS is presented inconsistently throughout the EP (for example in Appendix G1 versus in Appendix D3).

7	The EP (Appendix A2) appears to describe the potential for up to five vessels (a purpose-built seismic vessel, a maximum of three support vessels and an additional "spotter vessel" dedicated to marine fauna observations); however, the impact assessment for atmospheric emissions (EP Section 8.2, page 41) only evaluates emissions from up to four vessels.
8	Survey timing in Table F3-5 does not reflect the timing described in the activity description (A2).
9	Appendix D2 describes implementation of EPBC Regulations 2000 – Part 8 Division 8.1 Interacting with Cetaceans to reduce the risk of collision with marine fauna during the activity; however, the EPS related to this is included under the "Operating Procedure" control measure under underwater noise in Appendix G1. Furthermore, the "Operating Procedure" control is described in Appendix E7, Section 8.4 (Underwater sound – marine mammals) as being applicable to requirements from the EPBC Act Policy Statement 2.1 rather than the EPBC Regulations 2000 – Part 8 Division 8.1. This creates uncertainty as to whether this will be implemented when the seismic source is not operating.
10	Appendix E3 groups protected and commercial fish species based on whether they have a swim bladder or not, but the prediction of changes to fish behaviour does not distinguish between the different relative risk rankings assigned by Popper et al. (2014) to groups of fish according to their sensitivity to sound (based on the presence and connectivity of the swim bladder).
11	Subheadings in the table of EPOs for 'Management of the Activity (All Aspects)' in Appendix G1 (e.g. 'Plankton, zooplankton and krill') appear as EPOs, rather than sub-headings.
12	The Acquire Seismic on Paper (ASOP) workshop is described in Appendix B3, Section 5.3.1 as occurring *prior to the commencement of the survey*; however, an EPS in Appendix G1 states that this exercise will be conducted "*within a month of the survey starting*".
13	The ALARP assessment for accidental release of fuel rejects enhanced crew training in relation to this risk pathway in Appendix F2, Table F2-6 but Section 5.4.1 then states that "*The existing control measures, **supplemented with enhanced crew training**, are considered to meet the ALARP criteria for this activity, effectively minimising the risk of accidental fuel release to a level that is as low as reasonably practicable*". It is subsequently unclear whether this will be adopted or not.
14	The assessment IMS risk (Appendix D3) includes statements that marine pest establishment in the OA is considered unlikely due to water depth (40 – 1,400 m); however, also includes a description of IMS present in Victorian waters that have been documented in waters over 100 m depth (i.e., the New Zealand screw shell and the Northern pacific sea star). Additionally, the activity limitation to "minimise operational activity deeper than 200 m" suggests that vessels will be in shallower areas of the OA (where IMS would be more likely to become established) more often than the deeper areas of the OA during operations.
15	Appendix D3, Section 9 states IMS risk has been assessed as "low"; however, Section 10 assesses this risk as "medium".
16	Sufficient information on the methods, inputs, assumptions, limitations and uncertainties of predictions of received sound levels should be clearly presented and is important for transparency and accurate interpretation (**IP1765, Sections 3.3**). Some of the methods, inputs, assumptions, limitations and uncertainties of the acoustic modelling are not clearly presented, for example: • Significant differences in the modelled per-pulse sound fields are evident at different single impulse sites in Appendix B7 (e.g. Appendix B7b, Table 13 where ranges to 160 dB SPL vary from 2.9 km to 11.8 km) that are not explained by the bathymetry, sound speed profile, presence of calcarenite and other geoacoustic parameters described in Appendix D3 of the modelling reports. These differences would benefit from further explanation.

- Section 4 and Appendix D4 within EP Appendices B7a and B7b summarise input parameters and assumptions used for animal movement and exposure modelling. Further clarification is needed on the following:
    - Whether animats included in the pygmy blue whale foraging scenario and southern right whale aggregation scenarios included any directional bias or if they were undirected.
    - Whether the model assumes any avoidance in response to the sound source or if animats remain undirected.