NOPSEMA
Australia's offshore energy regulator

ASSESSMENT REPORT
INTERNAL USE ONLY

Assessment Report – CGG Regia Marine Seismic Survey

Document No: A1096104

Assessment Team: [redacted]

RMS ID: 7701

Background

Details of the Activity, assessment brief and assessment team can be found here.

Details of the assessment topic scopes can be found here.

Details of the completeness check for assessment can be found here.

Details of the 'request for further written information' and 'not reasonably satisfied' notices issued to the titleholder and the titleholder's response to these notices can be found here.

Record of assessment decisions can be found here.

Assessment team recommendation

The assessment team recommends that the decision maker cannot be reasonably satisfied that the Regia Marine Seismic Survey (MSS) environment plan (REG-EP-030-EP, Revision 5, dated 9 December 2025) (the EP) meets the criteria set out in sub-regulation 34 of the Offshore Petroleum Greenhouse Gas Storage (Environment) Regulation 2023 (Environment Regulations).

The findings of the assessment team are outlined below in support of this recommendation.

The key materials which were considered by the assessment team during the EP assessment are set out in **Attachment A**.

Assessment team findings against regulation 34 – Criteria for acceptance

Criterion 34(a) - EP is appropriate for the nature and scale of the activity

In determining whether the EP demonstrates that the requirements of regulation 34(a) are met, the assessment team found that:

1. There is a suitable description of the activity to inform how it may affect the environment. This is because the scope and bounds of the activity are clearly described in the EP (Appendix A2). In particular, the EP provides an appropriate level of detail to describe the proposed location, timeframe and duration of the activity and an outline of the operational details of the activities that may occur within the Operational Area. This is because the EP includes the following:
    a. An appropriate description of the Operational Area (OA) (Figure A2-1) – an area in which survey vessel activities can occur including equipment maintenance and deployment/recovery, crew change, and resupply. The sound source cannot be Active in the OA outside of the ASA and MSA.
    b. An appropriate description of a Mitigation Source Area (MSA) (Figure A2-1) - an area at the end and beginning of the sail lines where a very small source (~70 cui) will be discharged during line changes to alert marine fauna to the presence of the activity.
    c. An appropriate description of an Active Source Area (ASA) (Figure A2-1) - area within the OA in which the sound source can be Active. Line run-ins occur within this area (including ramp ups) and outside of the Survey Acquisition Area. The sound source cannot be discharged at full power within the ASA and outside of the SAA.
    d. An appropriate description of a Survey Acquisition Area (SAA) (Figure A2-1) – the primary target area (full fold) for the survey and the area in which seismic data will be recorded, including runouts, and the sound source can be discharged at full power.
    e. An appropriate description of proposed activity timing. Operations are defined as a single phase with a maximum of 90 continuous days. Acquisition is defined as a maximum of 60 days within the 90 days of operations. The maximum area of acquisition is 2750km2. Earliest start date 16 September 2025 and latest finish date 31 December 2028.
    f. Streamer and sail line parameters are outlined with sufficient detail in Table A2-3. For example:
        i. Maximum of 16 solid or gel core streamers
        ii. Maximum length of 8,100 m
        iii. Maximum tow depth 25m below the surface
        iv. 100m (average) - 200m (maximum) separation
        v. 500m minimum sail line separation
        vi. North-west to South-east sail line orientation (likely)
        vii. “Racetrack” sail line pattern
    g. Sound source parameters are outlined with sufficient detail in Table A2-4:
        i. Three arrays
        ii. 8m maximum tow depth
        iii. Working frequency range 0 – 200 Hz
        iv. Low-power mode 70 – 100 cui
        v. Maximum total volume 2,630 cui

vi. Maximum operating pressure 2000 psi (~1950 – 2050 psi)

vii. Shot point interval 12.5 m

viii. Towing speed 4-6 knots

h. Support activities are described in sufficient detail, including:

i. Survey vessel when the sound source is not Active

ii. Support vessel operations for safety, resupply, staff transfers and maritime observations

iii. Aviation operations for staff transfers and resupply

i. An appropriate description of vessels/aircraft and their roles during the activity. For example:

i. Marine fauna spotter vessel operations and deployment of passive acoustic monitoring buoys will occur within the Support Operations Area (SOA) (MAP-REG-EPM-168_A), which is outside the defined OA and relevant petroleum titles but within the Environmental Planning Area. The EP states that no separate title is required for these support operations under the recently extended meaning of "explore". This is confirmed by legal advice requested by NOPTA from DISR (A1218365).

ii. Proposed project vessels (Appendix A2 Section 3.6.1) include a purpose-built seismic vessel with parameters described in Table A2-5 and a minimum of two, maximum of three support vessels comprising a supply vessel and one to two smaller escort vessels to provide logistical, safety and equipment management duties. Additionally, there will be one "spotter vessel" dedicated to marine fauna observation that will be used near the survey vessel and tasked as required by the prevailing circumstances to improve marine fauna detection capabilities.

iii. Aircraft may be used for crew changes, critical equipment supply, surveillance, and emergency response uses. Aircraft include helicopters, fixed wing planes, and drones. Helicopter operations will occur approximately once every 3-4 weeks.

2. There is an appropriately thorough description of the activity relevant to the consideration of environmental impacts and risks of the activity. For example:

a. An appropriate description of the seismic source array that will be used to acquire the survey and associated underwater noise modelling undertaken for the activity (Appendix B7). The modelling comprises two studies undertaken by JASCO Applied Sciences (JASCO) (Appendix B7a and B7b) in 2023 and 2024, and a third modelling study undertaken by SLR in 2025 (Appendix B7c) in support of the latest EP revision (December 2025). The seismic source parameters applied in these modelling studies are representative of the seismic source characteristics that were relevant to the activity description and impact assessments at the time they were undertaken; for the two JASCO modelling studies (appendix B7a and B7b), seismic source parameters included a 2820 in3 seismic source discharging at 12.5m intervals at 8m depth. For the SLR modelling study supporting the latest EP revision (December 2025), the seismic source parameters included a 2630 in3 source.

b. A technical review of oil spill modelling was undertaken to support CGG in its impact and risk assessment for the activity and determination of the EMBA, which is referred to as the "Environmental Planning Area" (EPA) in the EP. The EPA is defined as 155km around OA. The technical review recommended that the selected EPA is appropriate for a largest fuel tank of up to 250m3.

c. An appropriate description of other planned discharges and emissions, including planned discharges (Appendix B4), atmospheric emissions (Appendix B4), and artificial light emissions (Appendix E9).

3. There is an appropriately thorough description of the environment that may be affected by the activity. This is because the environment that may be affected by planned and unplanned components of the activity is clearly defined with a logical basis for deriving boundaries. For example:

    a. The environment that may be affected by the activity is defined by an Operational Area (referred to as 'Operational Area') (Appendix A2 Section 3.4), which represents the spatial boundary of the petroleum activity, and an 'Environmental Planning Area' (EPA), which represents the spatial extent and variability of the receiving environment's contact with oil (MAP-REG-EPM-083_A, Appendix D4 Section 2.2). A technical review of spill modelling conducted for other EPs in the region (Appendix B11) to determine the appropriateness of the selected EPA, and it was concluded that it is appropriate for estimating the spatial extent of oil exposure at the low thresholds (NOPSEMA 2019) for a 250m3 diesel spill within the Regia MSS activity Planning Area. Due to the remote likelihood of the risk occurring (i.e., a vessel collision followed by a full release of MDO from the largest fuel tank) and operational and scientific monitoring strategies that would be implemented to track trajectory and threshold exceedances in the event of a worst-case spill, this evaluation is considered sufficient for the nature and scale of the activity.

4. In relation to planned components of the activity, the titleholder has defined the extent/footprint of each impact with sufficient detail. For example:

    a. The titleholder has defined a noise impact footprint from the survey based on effect ranges derived from underwater noise modelling and published thresholds (Appendix B7a, B7b and B7c). The extent of the underwater sound aspect is defined as 0.74 km for plankton (Appendix E2), 10.95 km for fish (Appendix E3), 2.74km for invertebrates (Appendix E4), 10.62 km for diving birds (Appendix E5), 6.25 km for turtles (Appendix E6), 44 km for marine mammals (Appendix E7) and 42.35 km for divers (Appendix E8). The distances applied for PMST searches are described in Appendix B5 (PMST Reports) and Section 4 of Appendices E3-E8. It is noted that there are inconsistencies between the distances stated in Appendix B5 and impact assessment appendices that create uncertainty as to whether an appropriate distance has been used to define the extent/footprint of impacts and the PMST searches. It is also noted that the latest acoustic modelling submitted with the latest EP (December 2025) creates some uncertainty as to what the precise extent of impacts will be. However, the distances applied to PMST searches and the relatively coarse resolution of the online PMST search tool provide adequate conservatism to account for this.

    b. The titleholder has defined the extent of impacts from artificial light emissions as the OA plus a 20km buffer in line with recommendations in the National Light Pollution Guidelines for Wildlife to provide a precautionary limit based on observed effects of sky glow on marine turtle hatchlings (demonstrated to occur at 15-18 km) and grounding of fledgeling seabirds (observed at 15 km).

5. The EP describes the environment that may be affected by planned and unplanned components of the activity in sufficient detail to inform the evaluation of environmental impacts and risks. This is because the EP includes:

    a. An appropriate description of the regional setting of the Operational Area and EPA detailed in Appendices D1 – D4 and E1 – E9.

    b. An appropriate description of the physical features of the Operational Area and EPA is included within relevant impact and risk assessment sections, for example water and sediment quality are described in Appendix D4 and a description of the West Tasmanian Canyons KEF is included in Appendix D3.

    c. An appropriate description of the biological environment of the Operational Area and EPA, including plankton, fish, invertebrates, birds, marine reptiles, and marine mammals. These descriptions are included in relevant impact and risk assessment appendices. For example, a

description of marine mammals that may be affected by underwater sound is included in Section 4 of Appendix E7. Further information is included on key sensitivities in Appendix F3.

d. An appropriate description of matters protected under Part 3 of the EPBC Act within the Operational Area and EPA, with reference to relevant plans of management, threat abatement plans, recovery plans, and conservation advice. The titleholder conducted searches for Matters of National Environmental Significance (MNES) and other matters protected by the EPBC Act within the Operational Area and EMBA, using the EPBC Act Protected Matters Search Tool (PMST) (Appendix B5). Descriptions of individual matters protected are included in relevant impact and risk assessments. For example, a description of various EPBC Act listed cetacean and pinniped species is included in Section 4 of Appendix E7.

e. There are no World Heritage Areas within the OA; however, the EPA (the extent of a worst-case unplanned hydrocarbon spill) overlaps the Budj Bim Cultural Landscape World Heritage Property. The EP provides a sufficiently detailed description of planned aspects of the activity (e.g., location of vessel operations, underwater noise emissions), of which none will be undertaken in any Part of a declared WHP within the meaning of the EPBC Act.

f. An appropriate description of the values of National Heritage Places located within the EPA, including (but not limited to) Great Ocean Road and Scenic Environs and Point Nepean Defence Sites and Quarantine Station Area (Appendix D4 Section 9.5.5). The activity or any part of the activity will not be undertaken in any part of a National Heritage Place within the meaning of the EPBC Act.

g. An appropriate description of the Wetlands of International Importance (RAMSAR) located within the EPA, including Glenelg Estuary and Discovery Bay Wetlands, Lavinia, Piccaninnie Ponds Karst Wetlands and Port Phillip Bay (western shoreline) and Bellarine Peninsula (Appendix D4, Section 6.16).

h. An appropriate description of the values and sensitivities of Australian Marine Parks (AMPs) within the EPA, including Apollo, Franklin, Nelson, and Zeehan (Appendix D4, Section 9.5.5).

i. An appropriate description of the values and sensitivities of Victorian State protected areas within the EPA, including Barwon Bluff Marine Sanctuary, Bay of Islands Conservation Park, Discovery Bay Marine National Park and Coastal Park, Great Otway National Park, Lady Julia Percy Island Wildlife Reserve, Lawrence Rocks Wildlife Reserve, Marengo Reefs Marine Sanctuary, Merri Marine Sanctuary, Mornington Peninsula National Park, Historic Seawinds Gardens in Arthurs Seat State Park, Port Campbell National Park, Port Phillip Heads Marine National Park, Twelve Apostles Marine National Park and The Arches Marine Sanctuary, Lowe South East Marine Park, Douglas Point Conservation Park, Nene Valley Conservation Park, Piccaninnie Ponds Conservation Park, Black Pyramid Rock Nature Reserve, Cape Wickham State Reserve, Christmas Island Nature Reserve, Councillor Island Nature Reserve, Disappointment Bay State Reserve, Lavinia State Reserve, Reid Rock Nature Reserve and Seal Rock State Reserve (Appendix D4, Section 9.5.5).

j. An appropriate description of the values and sensitivities of the Commonwealth Key Ecological Features (KEFs) located within the Operational Area and EMBA. The Operational Area overlaps the Bonney Coast Upwelling (Appendix B12, MAP-REG-EPM-003_F) and the West Tasmanian Canyons KEFs (Appendix B12, MAP-REG-EPM-004_C).

k. It is noted that Victorian Marine Key Ecological Features (https://www.marineandcoasts.vic.gov.au/marine-and-coastal-knowledge/marine-key-ecological-features) are not described or considered in the EP because they were released on 19 December 2025, after submission of the latest EP on 10 December 2025. The assessment team notes that the Victorin Marine KEFs include areas in Commonwealth waters, such as 'Shipwreck Shelf Coastal Krill' and 'Shipwreck Shelf Reef', which overlap with the OA.

l. An appropriate description of the EPBC Act listed species identified to occur, may occur or are likely to occur, within the meaning of the EBPC Act, in the Operational Area and EPA. 42 listed threatened and 40 listed migratory species or their habitat were identified to occur, may occur or are likely to occur, in the Operational Area (Appendix B5). 135 listed threatened and 72 listed migratory species or their habitat were identified to occur, may occur or are likely to occur, in the EPA (Appendix B5).

m. The titleholder has utilised appropriate references and information sources to adequately inform and support the descriptions of EPBC Act listed threatened and migratory species, such as contemporary peer reviewed scientific literature, the Australian Government's bioregional profiles and Species Profiles and Threats (SPRAT) database and listed threatened species recovery plans. For example:

n. An appropriate description of southern right whales is provided in Appendix E7 and Appendix F3 that includes details of the two Australian populations, abundance estimates, recovery rates, relevant life history (reproduction and migration), site-fidelity, key reproduction areas, seasonal presence and variability based on contemporary peer reviewed scientific literature, information within the National Recovery Plan for the Southern Right Whale, and data from the Victorian Department of Environment, Land, Water and Planning's (DEECA's) whale research and monitoring project.

o. An appropriate description of pygmy blue whales in provided in Appendix E7 and Appendix F3 that includes details of the East Indian Ocean population, relevant life history (foraging and migration), seasonal presence, and variability based on contemporary peer reviewed scientific literature and information within the Blue Whale Conservation Management Plan.

p. An appropriate description of the biologically important areas (BIAs) and habitat critical to survival (HCTS) for species in the Operational Area and EPA (Appendix B5). For example, BIAs overlapping the OA include:

    i. A number of foraging BIAs for seabirds (e.g., Wedge-tailed shearwater, Wandering albatross, Australasian gannet)

    ii. White shark foraging

    iii. Pygmy blue whale foraging (known and annual high use)

    iv. Southern right whale migration

q. In addition to the BIAs overlapping the Operational Area, the EPA also overlaps with:

    i. Southern right whale reproduction (Habitat Critical to the Survival)

    ii. Several additional breeding and foraging BIAs for seabirds (e.g., little penguin)

r. An appropriate description of the Commonwealth managed fisheries with management areas that overlap with the EPA. The Bass Central Zone Scallop Fishery; Eastern Tuna and Billfish Fishery; Small Pelagic Fishery; Southern and Eastern Scalefish and Shark Fishery including Shark Hook Sub-Sector, Shark Gillnet Sub-Sector, Commonwealth Trawl Sector –Danish Seine and Otter-board; Southern Squid Jig Fishery and Western Tuna and Billfish Fishery were appropriately identified as having a potential interaction with the activity, based on current distribution of target species and fishing effort (Appendix E1, Section 4.1).

s. An appropriate description of the Victorian state managed fisheries with management areas that overlap with the EPA. The Giant Crab Fishery; Multispecies Ocean Fishery; Octopus Fishery; Southern Rock Lobster Fishery and Wrasse Fishery were appropriately identified as having a potential interaction with the activity, based on current distribution of target species and fishing effort (Appendix E1, Section 4.1).

t. An appropriate description of social, economic, and cultural features of the EPA, including offshore energy, shipping, submarine cables, defence, marine tourism, and recreational fishing. Descriptions of these features of the environment are included under various impact and risk assessment sections.

u. An appropriate description of First Nations cultural features and heritage values that may be affected by the activity, which includes both tangible and intangible aspects, is supported by multiple appropriate sources of relevant information. The EP states that the scope of advice sought during consultation and research about Sea Country was not limited by reference to any specific boundaries or limits. Identified First Nations cultural features and values are described in a number of areas throughout the EP:

    i. Appendix B10 includes a cultural heritage desktop assessment that was undertaken for a different activity, but has a study area that encompasses the proposed permit areas for the Regia MSS. The EP (Appendix E1, Section 4.7.2) highlights that this study did not identify any specific indigenous cultural features within the benthic environment of the EPA.

    ii. Appendix E1, Section 4.7 provides a high-level description of indigenous culture in relation to physical presence of the Regia MSS;

    iii. The Budj Bim Cultural Landscape World Heritage Site and its outstanding universal value is described in Appendix F3, Section 3.15.

    iv. Appendix F3, Section 3.16 describes cultural features of the environment identified through relevant literature, case law and information provided through consultation. For example (but not limited to):

        - Koontapool, Woorrkngan and Yakeen - Whale birthing dreaming sites in coastal bay areas from Port Campbell to Portland, including Warrnambool;
        - Whales, particularly southern right whales, and blue whales as having a spiritual connection to the Gunditjmara people and holding a significant place in their cultural practices;
        - Native Title Areas and Rights for Gunditjmara and Eastern Maar peoples;
        - Deen Maar as containing important cultural sites and a place of spiritual significance;
        - Point Nepean and the Mornington Peninsula as a place of cultural significance;
        - Kooyan (eels) as a culturally significant resource;
        - The Bonney Upwelling as a food source supporting culturally significant species;
        - Intangible values including totemic value and kinship with marine species, Sea Country knowledge, Songlines, connection out to the continental shelf and Connection to Country;

v. The titleholder has utilised relevant references and information sources to adequately inform and support the descriptions, such as contemporary peer reviewed scientific literature and other authoritative sources. For example, the description of First Nations cultural features and values includes consideration of peer-reviewed literature and statutory documents (including the National Recovery Plan for the Southern Right Whale), as well as information provided by First Nations relevant persons through consultation and publicly available information.

w. The EP includes a greater level of detail on those receptors that may be impacted by planned components of the activity. For example, additional information is provided in Appendix F3 for key environmental values and sensitivities (including SRW and BW) susceptible to higher order planned impacts from the activity (i.e., underwater noise).

6. The EP includes sufficient information on the legislative requirements that are relevant to the activity and demonstrates how they will be met throughout the life of the activity. This is because:

    a. The EP includes an appropriate overview of relevant legislation and other environmental requirements (such as laws, codes, standards, agreements, treaties, conventions, or practices) that apply to the activity and demonstrates how they will be met. Appendix B2, Section 5 describes legislative and other requirements and outlines their relevance to the Regia MSS. Information is also included within each impact and risk assessment Section to describe requirements relevant to each impact/risk and an explanation of how these will be met. For example, Appendix D3 Section 5 outlines requirements relevant to the prevention of introduction of IMS including (but not limited to) the Biosecurity Act 2015, the Biosecurity Regulations 2016, and the Australian Biofouling Management Requirements.

    b. The EP appropriately describes the requirements from policies, plans of management, recovery plans, conservation advice, and other guidance for matters protected under the EPBC Act in Appendix B2 and, in general, demonstrates how these will be met. Within each impact and risk assessment section, legislative and other requirements relevant to particular impact/risk pathways (including relevant recovery Actions and objectives from recovery/conservation management plans) are outlined and statements are included describing how these will be met. For example:

    c. Appendix B2 and Section 5 of Appendix E7 identify the legislative requirements of EPBC Act Policy Statement 2.1 (Interaction between offshore seismic activities and whales), and the relevant recovery Actions of the National Recovery Plan for the Southern Right Whale and the Blue Whale Conservation Management Plan. The activity limitations in Appendix A2, impact assessments in Appendices E7 and F3, and Fauna Management Plan in Appendix G2 present information relevant to how the titleholder intends to meet the requirements. It is noted that issues remain with the EP demonstrating consistency with some key documents (e.g., the National Recovery Plan for the Southern Right Whale, Blue Whale Conservation Management Plan). Please refer to the protected matters assessment under acceptance criteria 34(c) and 34(d) for further findings related to this issue.

    d. Appendix E9, Section 5 describes that the Vessel Lighting Management Plans include measures to ensure that light emissions will be reduced to a level where wildlife will not be disrupted within, nor displaced from, important habitat and will be able to undertake critical behaviours such as foraging and reproduction, which aligns with Action Area A8 from the Recovery Plan for Marine Turtles in Australia.

7. The EP impact and risk assessments is commensurate to the magnitude of impacts and risks, and the level of analysis and evaluation presented in the EP is commensurate with the nature and scale of the activity and the severity of individual impacts and risks. This is because:

    a. The EP includes details of all environmental impacts and risks that are relevant to the activity and provides an evaluation that is appropriate to the nature and scale of each impact and risk. Relevant aspects include:

        i. A sufficiently robust method, consistent with internationally recognised standard ISO 31000:2018 Risk Evaluation, has been applied in the EP for the identification and evaluation of environmental impacts and risks of the petroleum activity (Appendix B4, page 6).

        ii. The EP contains an appropriate evaluation of all impacts and risks, arising directly or indirectly from all operations of the activity and potential emergency conditions (whether an accident or another reason). The details of environmental impacts and risks are summarised in Appendix B4 and were considered representative of the nature

and scale of the activity. The EP details the sources, potential events, likelihood and consequences, confidence levels and the magnitude of impacts and risks.

iii. The EP includes an appropriate analysis of the extent, duration, severity and certainty of impacts and risks, including cumulative impacts and risks (where applicable). The EP describes an "operating envelope" (Appendix A2, Table A2-2) which outlines activity parameters including maximum days of operation (90 continuous days in a single phase), maximum days of acquisition (60 days) and maximum survey acquisition area (2,750 km2). For example, although operations may occur for a maximum of 90 days, survey acquisition will only occur for a maximum of 60 days, and this has been considered in the assessment of impacts and risks (including cumulative impacts (Appendix F1)). Each impact and risk evaluation has been based on the described extent and duration of the relevant impact/risk.

b. The impact and risks evaluations are specific for the nature and location of the activity and the environmental receptors that may be affected. The titleholder conducted a "Preliminary Environmental Impact and Risk Assessment" to identify all impact and risk pathways relevant to the nature of the activity and the environmental sensitivities in the location. It was determined which impact/risk pathways were higher order and required a more detailed analysis. For example, additional effort has been applied in the evaluation of impacts from underwater noise to sound-sensitive environmental receptors including cetaceans (e.g., Appendix E7 and Appendix F3) and commercial fish species (e.g., Appendix E3 and Appendix F3).

c. The titleholder has applied more detail and rigour to the evaluation of higher order impacts and risks and to receptors with the greatest potential for impact/most vulnerable. For example, the EP applies more detail and rigour to the impact and risk assessments where there is a higher degree of scientific uncertainly in predictions of impacts and risks and/or severity of potential consequence of impacts and risks. The EP provides details of the additional studies that were undertaken by the titleholder to support and inform corresponding impact and risk evaluations. For example, the titleholder has commissioned activity-specific acoustic modelling (Appendix B7a, B7b and B7c) in support of underwater sound impact assessments in Appendices E2-E8 and Appendix F3.

8. In general, there is a demonstration that the evaluation of impacts and risks has informed the selection of a number of suitable control measures appropriate for the nature and scale of the activity to either reduce the consequence/severity or likelihood of environmental impacts and risks. For example:

   a. The evaluation of underwater sound impacts has informed the selection of a suite of control measures, where the types of control measures and the methods adopted are appropriate for the nature and scale of the activity, either to reduce the consequence/severity or likelihood of impacts (notwithstanding issues identified under acceptance criteria 34(c) regarding the effectiveness of controls and not adequately demonstrating that impacts will be reduced to acceptable levels).

   b. The evaluation of the risk of potential introduction of invasive marine species (IMS) has informed the adoption of an appropriate IMS risk assessment procedure and an anti-fouling system (i.e., hull coatings compliant with relevant international convention) to reduce the likelihood of IMS establishment.

9. Information provided during relevant persons consultation appears to be appropriately considered, evaluated, and incorporated into the EP where it is relevant. For example, southern right whales and blue whales were identified through consultation with relevant persons as culturally significant species to First Nations peoples. Subsequently, they have been included in the description of cultural features and values that may be affected by the activity (e.g., Appendix F3, Section 3.16) and consideration has been given to how impacts and risks to these species as an environmental receptor also constitutes impacts and risks to these species as a cultural value (e.g., Appendix E7, Section 4.5.2 and 10.2).

Based on the above findings, the assessment team recommends that the decision maker can be reasonably satisfied that the EP meets the requirements of regulation 34(a).

Criterion 34(b) - EP demonstrates that the environmental impacts and risks of the activity will be reduced to ALARP

In determining whether the EP demonstrates that the requirements of regulation 34(b) are met, the assessment team found that:

10. The EP describes the method applied to evaluate whether impacts and risks are reduced to ALARP. The ALARP assessment (Appendix F2, Section 2.1) states that 'the ALARP assessment focuses on the decision-making process for adoption/rejection of control measures only (where control measures are defined as 'a system, an item of equipment, a person or a procedure, that is used as a basis for managing environmental impacts and risks of an activity'). Several other elements of the broader environmental management system are excluded from the assessment'. These include:

    a. **Activity limitations** (defined as '*A measure that eliminates or substitutes, constrains, limits, or otherwise restricts the activity such that impacts and risks can be avoided, or lessened to or below acceptable levels*') – The titleholder does not consider these to be control measures, and states that they cannot be reasonably considered in the ALARP decisions process because '*i) Their costs are variable and context-specific, arising from survey design and environmental constraints rather than implementation choices; ii) They relate to the activity's scope and objective, not the cost of adopting a control measure; iii) They are either complied with or not, lacking a performative or measurable management component; iv) They eliminate or substitute risks (at the top of the hierarchy of controls), rather than managing them; v) They are used to set the boundaries of the assessment, forming the baseline against which ALARP can be argued; vi) They do not serve as discretionary control measures subject to cost-benefit evaluation*'.

    b. **Environment management system** (defined as '*For an activity, includes the responsibilities, practices, processes and resources used to manage the environmental aspects of the activity*') – The titleholder states that *'supporting measures that are part of the Environmental Management System (found in the Implementation Strategy (Appendix B3)) are part of establishing baselines for the ALARP assessment and excluded from the ALARP assessment. These elements are designed to support the effectiveness of all control measures, not Act as control measures themselves'*. For example, measures that form part of the titleholder's environment management system include the Sail Line Plan, Fauna Management Plan (FMP), SRW Coastal Monitoring Program Implementation Plan, and Oil Pollution Emergency Plan (OPEP). Therefore, the individual procedures and Actions contained within these other plans, are not subject to ALARP evaluation.

    c. The titleholder's ALARP evaluation method does not provide a transparent evaluation of costs and benefits of the individual activity limitations, procedures, and Actions within the various EMS elements. Consequently, it is not evident from Appendix F2 in isolation that the method of evaluating ALARP is applied thoroughly, defensible, and reproducible for all control measures. The assessment team has, through review and evaluation of other EP appendices and relevant EMS elements, formed the view that reasonable control measures have either been adopted or reasonably considered which is sufficient for NOPSEMA to be reasonably satisfied in relation to this factor under acceptance criterion 34(b).

11. All control measures that could be reasonably considered are evaluated. The ALARP method includes base level measures adopted in line with relevant legislation and industry best practice as well as additional measures that were evaluated for each identified impact and risk. For higher order impacts and risks, the exploration of alternative, additional or improved control measures is evident by the titleholder. For example, a vessel bunkering procedure with best practice measures such as use of dry break couplings and environmental condition restrictions has been adopted to reduce the likelihood of

a hydrocarbon spill during bunkering and an additional activity Limitation (12 - "Bunkering operations will not occur within 50km of a Commonwealth or state marine park") will be implemented to create a buffer zone to further reduce the likelihood of hydrocarbon spill risk to these protected areas.

12. The evaluation of impacts and risks has demonstrably informed the selection of a number of suitable control measures to either reduce the consequence/severity or likelihood of impacts and risks. However, due to the residual uncertainty created by different sets of modelling with materially different predicted impact ranges, it is not demonstrated that certain control measures are suitable for managing impacts from underwater noise to an acceptable level. Please refer to the protected matters Section under acceptance criteria 34(c) and 34(d) for further detail.

13. There is sufficient detail provided for most control measures to demonstrate that the measures will be effective in reducing impacts and risks to ALARP for the duration of the EP. For example, the EP has evaluated and described a range of control measures in sufficient detail to manage the risk of accidental release of materials or waste overboard, such as streamer recovery units, a garbage management system, use of a support vessel to assist in recovery of lost equipment if required and a consultation management system to alert other marine users if lost equipment poses a threat to them.

14. For most identified impact and risk pathways, the EP has demonstrated that there are no other practical control measures that could reasonably be taken to reduce impacts and risks any further. Where additional controls are evaluated but not adopted, reasonable justifications are provided. For example (but not limited to):

    a. A zero-discharge system for planned discharges where all waste fluids are captured and stored for later disposal was evaluated; however, given the small volumes and lower-order impacts from planned vessel discharges, the cost of implementing this was determined to be grossly disproportionate to the environmental benefit that would be gained.

    b. The adoption of advanced light filters to reduce the spectral range of light emitted during the activity was evaluated but not adopted as a control as it was determined that it would incur significant extra cost for minimal additional environmental benefit due to the use of other controls already in place to minimise light spill to the environment including management of lighting directionality and use of blackout blinds at nighttime.

15. Information provided during relevant persons consultation appears to be appropriately considered, evaluated, and incorporated into the EP where it is relevant. For example, activity Limitation 16 (No vessel movement within 5km of the Twelve Apostles State Marine Park) was adopted in response to consultation with Parks Victoria, who were concerned about IMS risks from the activity to values of the marine park including southern rock lobsters (Appendix D3, Section 8). Adopting this buffer will reduce the likelihood of vessels used in the Regia MSS introducing IMS into the marine park.

Matters protected under Part 3 of the EPBC Act

16. All control measures that could be reasonably considered that relate to Protected Matters are evaluated (Appendix F2, Section 6.5). For example:

    a. Baseline measures adopted to manage impacts and risks from underwater sound are in line with relevant legislation and industry best practice, for example, procedures aligned with EPBC Act Policy Statement 2.1 (Interaction between offshore seismic exploration and whales: Industry guidelines), scheduling measures to avoid the activity overlapping with periods of peak presence of blue whales and southern right whales, use of trained marine fauna observers (MFOs), and development of management Actions and procedures within a Fauna Management Plan (FMP).

    b. The exploration of reasonable alternative, additional and improved control measures to manage impacts and risks from underwater sound to protected matters is appropriate within the EP. This is because:

i. Alternative sound source technologies to minimize sound emissions have been explored and where not adopted, with the reasons explained in terms of their suitability for the geophysical objectives of the survey or their limited commercial availability.

ii. A range of fauna detection technologies and deployment methods have been considered to improve fauna detection capabilities, including passive acoustic monitoring (PAM; via various deployment options and combinations), a spotter vessel, aerial overflight surveys, shore-based observations, drone technologies, infra-red (thermal) cameras, satellite imagery, and integration of citizen science observations. Reasons are provided for the adoption, partial adoption, or rejection of these measures in terms of their feasibility, benefits, cost/sacrifice, and safety considerations.

c. The use of moored acoustic detection monitoring (ADM) units is proposed primarily for the purpose of sound source verification; detection of vocalising cetaceans is a potential secondary function but not relied upon as part of the broader detection approach. The evaluation of ADM units in Appendix F2 does not include the titleholder's rationale for rejecting their use as a detection measure for southern right whales; the described effectiveness and sacrifice for ADM remains framed as if ADMs will be used for detection, but there is no evaluation of their application for sound source verification. However, noting that the titleholder has evaluated ADM and adopted it for SSV, this is not a reason to be not reasonably satisfied that the EP meets the overall object of criterion 34(b).

d. Activity limitations and specific procedures and Actions outlined in documents such as the Sail Line Plan, FMP and SRW Coastal Monitoring Program Implementation Plan are not evaluated in the ALARP assessment (Appendix F2), as explained in [10]. However, through review and evaluation of these documents, there is sufficient information on detection measures, mitigation measures, sound verification, and adaptive management measures for NOPSEMA to be reasonably satisfied that all reasonable control measures have been considered (not withstanding issues identified under acceptance criterion 34(c) in relation to the managing underwater noise impacts to an acceptable level).

17. The evaluation of impacts and risks has informed the selection of reasonable and suitable control measures to either reduce the consequence/severity or likelihood of impacts and risks. For example, the evaluation of underwater sound impacts has informed the selection of an extensive suite of control measures for EPBC Act listed threatened and migratory species such as southern right whale and blue whale:

    a. For southern right whales (which utilise the area for reproduction and migration), suitable control measures comprise temporal and spatial activity limitations to reduce both the severity and likelihood of impacts during periods of peak presence, multi-platform observation and detection measures (e.g. MFOs, PAM systems, spotter vessel scouting and sentry procedures, coastal observers, drones), shut-down procedures in the event of a southern right whale detection, sound source verification program and adaptive management.

    b. For pygmy blue whales (which utilise the area for foraging), suitable control measures comprise temporal and spatial activity limitations to reduce both the severity and likelihood of impacts during periods of peak presence, multi-platform observation and detection measures (e.g. MFOs, PAM systems, spotter vessel scouting and sentry procedures, coastal observers drone observations), and shut-down procedures in the event of a pygmy blue whale detection.

18. It is noted that issues remain with the EP demonstrating that some control measures will be adequately effective to manage impacts to an acceptable level, as well as demonstrating consistency with some key documents (e.g., the National Recovery Plan for the Southern Right Whale, Blue Whale Conservation

Management Plan). Please refer to the protected matters assessment under acceptance criteria 34(c) and 34(d) for further findings related to these issues.

19. There is generally sufficient detail of the control measures to demonstrate that the measures will be effective in reducing impacts and risks to ALARP, for the duration of the EP. For example, in relation to marine mammals, information is presented in Appendix E7 (Underwater sound impact assessment – Marine mammals), Appendix F3 (Further assessment of key values and sensitivity – Southern right whales and blue whales), Appendix F4 (Acceptable levels assessment), Appendix G2 (Fauna Management Plan), Appendix G5 (Whale Coastal Monitoring Programme Implementation Plan), Appendix G7 (Sound Source Verification Procedure), which collectively provide sufficient detail on the functionality, availability, reliability, independence and compatibility of the various measures. It is noted that issues remain with the EP demonstrating that some control measures will be adequately effective to reduce impacts to an acceptable level. Please refer to the protected matters assessment under acceptance criteria 34(c) and 34(d) for further findings related to these issues.

Socio-economic

20. All control measures that could be reasonably considered are evaluated. For higher order impacts and risks, the exploration of alternative, additional or improved control measures is evident by the titleholder. For example, in the physical presence ALARP assessment (Appendix F2), the administrative control measure 'Adjustment Protocol' was adopted as its minor costs are offset by its value in mitigating conflict and maintaining good faith with other marine users that may be subject to any unreasonable interference from the activity.

21. There is sufficient detail of the control measures to demonstrate that the measures will be effective in reducing impacts and risks to ALARP for the duration of the EP. For example:

    a. All measures that are additional to 'baseline measures' are listed in Section 6.4 (physical presence; Table F2-11) and Section 6.5 (underwater sound; Table F2-12) of Appendix F2. In addition to semi-quantitative descriptors of each control measure's effectiveness, marginal reduction, residual impact, or risk level, and sacrifice relative to the baseline, are qualitative descriptions of 'intrinsic effectiveness' (i.e., environmental benefit) and 'sacrifice quantum' (i.e., costs such as money, time, and trouble).

    b. Adopted control measures are presented in Section 1.7 (physical presence) and 1.8 (underwater sound) of Appendix G1 alongside their relevant EPS and MC. Control measures are suitably detailed commensurate to their complexity. For example, the 'Otway Adjustment Protocol' (OAP) is further described in Appendix G4 and Appendix B3 (Section 5.2.1) and highlights key features that assure impacts to commercial fishers and other marine users shall be reduced to ALARP during and following the seismic activity. Examples of sufficient details captured in Appendix G4 include:

        i. eligibility (Section 1.5 'Scope'). This describes two important areas for which adjustment types are based upon; 1) an 'Adjustment Area' extending 10km around the perimeter of the seismic survey acquisition area, and 2) a 'Displacement Area' which is an alternative fishing ground within 50km of the 'Adjustment Area';

        ii. the commercial adjustment types available (e.g., displacement, loss-of-catch adjustment, fishing gear loss of damage);

        iii. claim information and assessment process (i.e., who can claim and when, information required, who will assess the claims, expected duration for assessment of claim, independent expert review of a claim, expected time to claim reimbursement, etc.);

        iv. claim window ("from the notified start date of an activity and no more than 30 days after the notified end date of an activity"); and

v. lodgement period ("from the notified start date of an activity and no longer than 183 days after the notified end date of an activity"). Note, the claim period provided is inconsistent with that of the accompanying EPS (i.e., 180 days) – refer to socio-economic findings under acceptance criterion 34d for further detail.

22. The EP has demonstrated, though reasoned and supported arguments that there are no other practical control measures that could reasonably be taken to reduce impacts and risks any further. For example:

    a. the titleholder has shown due consideration to proposed seismic activity timing and peak fishing periods ('Seasonal Avoidance of Peak Fishing Overlaps'; Section 8.2, p. 24) in the physical presence impact assessment (Appendix E1). The titleholder demonstrates that pre-existing activity limitations to avoid overlap with other environmentally sensitive periods such as peak upwelling events (i.e., no petroleum activity to be carried out between 1 January and 15 September) have resulted in minimal temporal overlap with peak fishing periods. The rejection of the activity limitation is reasonable given most fisheries operate year-round, the addition of further restrictions for less productive fishing times would be of marginal benefit at the cost of doubling the duration of the MSS survey.

    b. The EP has demonstrated consideration to limiting equipment deployment and retrieval of streamers and the seismic source to defined areas such as the Operational Area. The environmental benefit of providing certainty to other marine users of a boundary representing potential interference was considered grossly disproportionate to the higher operational risks (e.g., likelihood of entanglement during vessel turning manoeuvres). An argument is made that legislative requirements (e.g., adherence to maritime laws) and controls already in place (e.g., on-water communications) would effectively reduce the likelihood of any on-water interactions to an acceptable level.

23. The information provided during relevant persons consultation appears to be appropriately considered, evaluated, and incorporated into the EP where it is relevant. For example:

    a. it is evident that information concerning the survey timing to avoid peak commercial fishing periods has been reasonably considered and evaluated, with environmental benefit weighted against sacrifices, concluding that implementation of further measures would be grossly disproportionate to the impact reduction achievable. Survey timing overlap with peak fishing times for key targeted species such as Gould's squid (e.g., avoidance of survey timing in February was stipulated from relevant person consultation), giant crab, and southern rock lobster has been avoided by the activity limitation of "*no petroleum activity to be carried out between 1 January and 15 September*" (Section 4.2 of Appendix A). This activity limitation had primarily been incorporated to avoid behavioural disturbance to southern right whales, however, has indirectly led to a temporal reduction of the activity with several key fisheries' peak seasons.

    b. In addition, activity limitation measures were incorporated into the EP, directly informed by commercial fishers/recreational divers and other marine users. Key examples include:

        i. No seismic acquisition within 17km of Deen Maar / Lady Percy Julia Island (reduce spatial overlap with most commercial fishing in the region / reduce acoustic impacts to short-ranging fish species / avoid acoustic impacts to commercial abalone and recreational divers);

        ii. Excise areas of the acquisition area that have been identified to cause exceedance of safe diving thresholds (avoid potential acoustic impacts to recreational divers);

        iii. In waters deeper than 200 m, interfere with commercial fishers to no greater extent than is necessary for the efficient completion of the survey (manage interference with Commonwealth Trawl fishers);

iv. No MSS acquisitional beyond 200m depth contour (manage interference with Commonwealth Trawl fishers / protection of commercial fish and invertebrate species);

v. No vessel movements within 700m of fishing blocks G12, G13, H13, and H14 (minimise interference with nearshore SRL fisher and mitigation of acoustic impacts to target species); and

vi. No sound source discharges within the Orange Roughy research program areas (avoid acoustic impacts to research program reference sites / SETFIA concerns). Noting that this activity limitation does not provide for a reasonable buffer, as per the request from SETFIA during consultation (Event ID 1649). Refer to socio-economic topic findings under acceptance criterion 34(c) for further detail.

24. Based on the findings above, the EP demonstrates that impacts and risks will be reduced to ALARP, consistent with the requirements of regulation 21(5).

Based on the above findings, the assessment team recommends that the decision maker can be reasonably satisfied that the EP meets the requirements of regulation 34(b).

Criterion 34(c) – EP demonstrates that the environmental impacts and risks of the activity will be reduced to acceptable levels

Reasons to be reasonably satisfied

In determining whether the EP demonstrates that the requirements of regulation 34(c) are met, the assessment team found that:

25. The EP describes the process for defining acceptable levels of impact and risk, and the method for comparing predicted impacts and risks to acceptable levels of impacts and risks:

a. Acceptable levels are defined in a number of locations throughout the EP and its appendices. Acceptable levels are defined at a general activity level (EP Table 11), at an aspect-specific level (EP Table 12). The aspect-specific defined acceptable levels are also presented in Section 6 of each individual impact and risk assessment in Appendices D and E, where the rationale for defining the levels as relevant to the particular aspect-receptor combination is also described.

b. The process of defining acceptable levels considers different categories of internal and external context, including the Principles of ESD, legislative context (including, but not limited to, applicable plans of management, recovery plans conservation advice and other guidance for matters protected under the EPBC Act), biological, ecological, economic, cultural, internal company, and social contexts (including how measures adopted during relevant persons consultation are incorporated and the views of the public are considered). Therefore, acceptable levels are defined and based on reasonable internal and external context, legislative and industry standards.

c. The method used to compare the predicted impacts and risks to acceptable levels of impacts and risks is also presented in a number of locations throughout the EP. Section 10 of each individual impact and risk assessment in Appendices D and E provides the titleholder's demonstration that impacts will be of an acceptable level under the headings 'Principles of ESD', 'Biological and Ecological Categories', 'Economic, Cultural and Social Categories' and 'Consistency with Company Processes', such that there is some relationship with the various contexts that different acceptable levels are defined against. In addition, further assessment of key values and sensitivities in Appendix F3 includes additional text in the impact assessments that also compares the predicted levels of impact to defined acceptable levels (e.g. reasons why the activity will not be inconsistent with a recovery plan for threatened species).

d. Appendix F4 (Acceptable Levels Assessment) also sets out the titleholder's process and methods for defining acceptable levels (Section 4) in more detail. Section 5 of Appendix F4 includes acceptable level demonstrations, including comparisons of predicted impacts and risks for each aspect. However, these demonstrations are high-level statements of concordance with the defined activity-level acceptable levels, and little or no explanation is included to support these high-level statements of concordance.

26. Defined acceptable levels for impact pathways to some environmental receptors reflect consideration of relevant recovery plans, conservation management plans, conservation advices, and other guidance. For example, defined acceptable levels for impacts from artificial light emissions to marine turtles and birds align with relevant guidance (e.g., The National Light Pollution Guidelines for Wildlife) and recovery plans (e.g., The Recovery Plan for Matine Turtles in Australia).

27. Defined acceptable levels for unplanned risks reflect that any occurrence is inherently unacceptable. For example, Appendix D4, Section 6 provides a defined acceptable level of "Prevent any accidental release of fuel to the marine environment".

28. The EP demonstrates that the titleholder has engaged extensively on the topic of acceptable levels of impacts and risks. However, the rationale for the defined levels and demonstration of acceptability are sometimes fragmented, not well explained and not reproducible. There are examples of defined acceptable levels not being achievable or being inconsistent with impact predictions [55].

29. The process for demonstrating that certain impacts and risks will be of an acceptable level is commensurate with the nature and scale of the activity and the severity of its impacts and risks. The titleholder has applied more effort and rigour to evaluations where there is a higher degree of scientific uncertainty in predictions of impacts and risks and/or severity of potential consequence of impacts and risks (for example, a far greater level of detail and evaluation has been applied to the assessment of impacts from underwater noise (Appendices E1-E8) in comparison with planned discharges (Appendix B4)).

30. The EP demonstrates that the activity is not inconsistent with certain recovery plans /threat abatement plans for a listed threatened species or ecological community, management plans, or IUCN Reserve Management Principles in operation for an Australian Marine Park or a management plan for a Commonwealth Heritage Place. For example, the EP confirms that the OA does not overlap with any AMP or any Victorian State protected marine areas (e.g., activity Limitation 15 - "No activities within a designated Australian Marine Park (State and Commonwealth)") and the EP identifies the values of the Commonwealth and state marine protected areas overlapping the EPA (e.g., Table F4-3) and provides appropriate rationale as to why the activity is not inconsistent with the objectives of the South-east Marine Parks Network Management Plan (Table F4-2).

31. In general, the EP includes assessment of relevant key documents and demonstration that the nature and scale of activities described in the EP will not impact these key receptors in a manner inconsistent with the key document. For example, the EP (Appendix E9) acknowledges that light pollution is identified as a high-risk threat in the Recovery Plan for Marine Turtles in Australia and sets an acceptable level of impact that "turtles continue to utilise the area without disruption to critical life-cycle behaviours", which is consistent with Action Area A8 from the recovery plan.

32. The EP demonstrates that the activity does not contravene Australian World Heritage Management principles, National Heritage management principles, Australian Ramsar management principles or Commonwealth Heritage management principles. This is because there is no spatial overlap of the Operational Area with these protected places. The EP includes consideration of indirect impacts to World Heritage Place values, specifically an assessment of a potential impact pathway to cultural values of the Budj Bim Cultural Landscape (Appendix F3, Section 3.15) such as glass eels (Appendix F3, Section 3.7) and shows regard to relevant plans of management including the Budj Bim Cultural Landscape Master Plan (2022 – 2030), the Ngootyoong Gunditj Ngootyoong Mara South West Management Plan (2015), the Tyrrendarra Indigenous Protected Area Management Action Plan (2015 – 2018) and the Gunditj Mirring

Budj Bim Indigenous Protected Area Plan of Management (2022 – 2027). The activity includes no planned impacts to the Budj Bim Cultural Landscape World Heritage Property.

33. The EP has had regard to relevant policy documents, guidance, bioregional plans, wildlife conservation plans, management plans, instruments under the EPBC Act, conservation advice, marine bioregional plans, and other information on the DCCEEW website. For example, the EP has regard to the National Light Pollution Guidelines for Wildlife in its evaluation of potential impacts from light emissions and adopts control measures in line with this guidance material.

34. The titleholder has identified and addressed areas of uncertainty in some impact and risk evaluations (notwithstanding issues related to the underwater noise impact assessment). It is demonstrated that predictions of environmental impact and risk pathways outlined below are suitably conservative and supported by appropriate evidence. For example:

    a. Predictions of impacts from light emissions have used a conservative boundary of 20km around the Operational Area to provide a conservative limit proposed in the National Light Pollution Guidelines for Wildlife.

    b. The EPA (MAP-REG-EPM-083_A), which represents the spatial extent and variability of the receiving environment's contact with oil, was selected via a technical review of spill modelling conducted for other EPs in the region (Appendix B11). It was concluded that it is appropriate for estimating the spatial extent of oil exposure at the low thresholds (NOPSEMA 2019) for a 250m3 diesel spill within the Regia MSS activity Planning Area.

Matters protected under Part 3 of the EPBC Act

Reasons to be reasonably satisfied

35. The EP includes defined acceptable levels for underwater sound impacts to protected matters that are appropriate and based on relevant context, including the principles of ESD and the relevant requirements of threatened species recovery plans. For example:

    a. The EP includes defined acceptable levels relating to zooplankton and krill (a component of the Commonwealth Marine Area and food source for blue whales and other fauna) that are considered to be appropriate on the basis that they are consistent with the principals of ESD and reflect a level of impact that will not be serious or irreversible, and will not compromise the ecological integrity of the food web.

    b. The EP includes defined acceptable levels for marine mammals that reflect the principles of ESD, EPBC Act Policy Statement 2.1, and the relevant requirements of the Blue Whale Conservation Management Plan and National Recovery Plan for the Southern Right Whale. For example:

        i. 'Anthropogenic noise in biologically important areas must be managed such that any blue whale is not displaced from a foraging area'.

        ii. 'Sound exposure levels to blue whales must be below a TTS per pulse and TTS 24 hr SEL thresholds of 216 dB and 168 dB respectively'.

        iii. 'Actions within and adjacent to southern right whale BIAs and HCTS should demonstrate that they do not prevent any southern right whale utilising the area or cause auditory impairment'.

        iv. 'Actions within and adjacent to southern right whale BIAs and HCTS should demonstrate that they minimise behavioural disturbance'.

    c. The EP includes a number of other defined acceptable levels for marine mammals (other cetaceans and otariid pinnipeds) based on PTS or TTS exposure thresholds. Rationale presented in the EP demonstrates that these are appropriate and achievable through the implementation

of control measures consistent with EPBC Policy Statement 2.1 that would be sufficient to prevent exposure of a marine mammals to these effects.

36. The EP demonstrates that the impacts and risks to zooplankton will be of an acceptable level and that the defined acceptable levels are achievable. This is because the impact assessment in Appendix E2 and the further assessment in Appendix F3 expand upon the model predictions against effects criteria to provide further context to the potential magnitude and extent of impacts to plankton relative to natural spatial and temporal variability in abundance, distribution, mortality, and advection processes.

37. The EP identifies, acknowledges and addresses uncertainty regarding the exact extent of impacts to zooplankton. The EP acknowledges research that identifies species and stage-specific differences in sensitivity. The EP also acknowledges research by McCauley et al. (2017) and subsequent modelling by Richardson et al. (2017) that examined potential impacts from seismic to zooplankton over larger extents than have been found in other research. The EP addresses the uncertainties by considering a broader body of peer-reviewed scientific literature including recent studies undertaken using full commercial scale seismic sources and designed to consider some of the experimental design limitations of the McCauley et al. (2017) study; the general consensus of this broader body of recent and peer-reviewed literature is that mortality impacts of impulsive sound from seismic sources to zooplankton are localised and of a magnitude that is difficult to separate from background mortality and natural variation.

38. The EP demonstrates that defined acceptable levels of impact for turtles ('Sound exposure to marine turtles must be below a permanent threshold shift at thresholds in exceedance of 232 dB PK' and impacts and risks to be temporary / reversible, small scale, and/or low intensity environmental damage at population levels') are achievable and that the activity is not inconsistent with the Recovery Plan for Marine Turtles. This is because the EP identifies the relevant content of the recovery plan (the requirement to undertake soft starts) and has implemented this and other controls to demonstrate that PTS and population level impacts are not expected to occur.

39. The EP has not addressed uncertainty in relation to predictions of PTS and TTS effects to turtles, as it has not incorporated the most recent updates to turtle auditory effects criteria in Accomando et al. (2025) into the impact assessment. However, noting that waters adjacent to the survey do not support turtles in high numbers and there are no BIAs or HCTS, the assessment team is reasonably satisfied that this does not materially erode the EP's rationale for demonstrating that the activity will not be inconsistent with the Recovery Plan for Marine Turtles.

40. The EP identifies, acknowledges, and addresses key areas of uncertainty in predictions of impact and risk of underwater sound to southern right whales. For example:

    a. The EP identifies and acknowledges the uncertain recovery trajectory of the south-eastern population. The EP also acknowledges the sensitivity of southern right whale reproduction behaviours, the significance of historic high use calving areas adjacent to the proposed activity, and the species high site fidelity.

    b. The EP identifies and acknowledges uncertainty regarding the received sound levels and exposure contexts that might result in disturbance to southern right whales, in particular reproduction behaviours. The uncertainty associated with received sound levels and exposure contexts is addressed to a reasonable degree, for example:

        i. The EP (Appendix F3) acknowledges that that there may be behavioural responses below the typical NMFS 160 dB SPL threshold and that behavioural disturbance to SRWs in the reproduction BIA could occur at sound levels below 140 dB SPL.

        ii. The EP (Appendix F4) explores a range of scientific literature on behavioural response and acknowledges studies where behavioural responses have occurred at levels lower than 120 dB SPL, stating that 'the transition between a behavioural change (i.e. within the expected behavioural repertoire) and a behavioural disturbance likely occurs somewhere between the ~110 dB SPL and >160 dB SPL thresholds. Behavioural

changes in response to sound exposures below 120dB SPL are unlikely to be distinguishable from the normal range of biological behaviours'.

iii. The EP (Appendix F3) makes the case that received sound levels within the reproduction BIA are predicted to be within ~120-140 dB SPL and attempts to qualify this against natural ambient sound levels in the Otway region, which the EP states can vary between 90–158 dB, with a mean of ~110 dB. While it is not be entirely appropriate to compare received impulsive seismic sound levels during typical ambient noise conditions with some of the more infrequently occurring and highest ambient sound levels associated with extreme ambient conditions (e.g. up to 158 dB), the range of ambient sound levels does provide some relevant additional context.

iv. The EP has reasonably addressed the uncertainty associated with behavioural disturbance to southern right whale reproduction behaviours by adopting a more precautionary trigger for mitigation and adaptive management measures if received sound levels from the Regia MSS exceed 120 dB in the southern right whale reproduction BIA during periods when southern right whales may be utilising the BIA for reproduction behaviours (i.e. from 16 September and in October).

41. It is noted that there is unresolved uncertainty with model predictions [45-47], though the EP proposes a programme of sound source verification and adaptive management for southern right whales [42] to address this predictive uncertainty.

42. The EP provides reasonable evidence that (with the exception of predictive uncertainties in [45-47] and uncertainties in [43], there are appropriate detection and control measures to manage underwater sound impacts to southern right whales to acceptable levels. For example, Appendix F3 and the FMP (Appendix G2) outline the combination of measures that will be implemented, which in combination with activity limitations (Appendix A2), include:

    a. Pre-survey SRW detection (from 1 May) to establish SRW presence in the season prior to commencement.

    b. Pre-survey ambient sound measurement programme.

    c. The activity will be undertaken between 16 September and 31 December – By commencing on or after 16 September, the activity avoids historical high use periods of SRW presence, though it is noted that there is still some potential for disturbance to SRWs in the reproduction BIA in late September and potentially into October.

    d. The acquisition lines will be acquired working from the deepest lines first (which is approximately 70 km offshore from the reproduction BIA).

    e. Only commence lines 1 - 30 after 1 November and if SRW are confirmed to have been absent from the reproduction BIA (between and inclusive of Cape Bridgewater and Cape Otway) for 24-hours.

    f. A range of SRW detection methods have been selected, including coastal observers, drones (5 km flight range + 30 km observation range in optimal conditions), integration of citizen science/third party observations, MFOs (5km detection range) and PAM (10 km detection range) on the survey vessel, a spotter vessel positioned 20 km shoreward of the survey vessel with MFOs (5km observation range) and PAM (10 km detection range), and observations supported by the support vessels. The EP demonstrates how the various detection methods will function together to provide for a reasonable level of detection over distances commensurate with control measures.

    g. Sound source verification – Shut down the sound source if impulsive noise levels exceeding 120 dB SPL are repeatedly detected by the SSV buoys. In October, if there have been 14

consecutive days without a confirmed SRW detection, the shutdown trigger for repeated impulsive-noise exceedances increases to 140 dB SPL.

h. Sound source verification - During seismic acquisition, sound levels at 5 km, 10 km, 15 km and (if required) 20 km will be measured through drift deployments to provide real-time verification of the horizontal extent of the seismic sound field.

i. Shutdown the sound source upon "confirmed detection" of any SRW from any detection platform. Soft restart of the survey can only commence when there have been no confirmed detections of a SRW across all the platforms for a period of 24 hours.

43. The EP includes a number of inconsistencies where information is provided to explain how the detection and control measures will function to be effective in managing impacts to an acceptable level. For example (but not limited to):

    a. Appendix E7, Section 9.1.3.2 states that a precautionary 13 km shutdown measure will be implemented for southern right whales, based on the modelled animat distances for cow-calf pairs at 140 dB SPL. The 13 km distance is not repeated elsewhere in other parts of the EP, but is reflected in the offshore boundaries of the broader 'SRW Shutdown Area' presented in Figure G2-5 in the FMP, where the shutdown would only be relevant in the migration BIA (i.e. to migrating southern right whales). However, the specified 13 km shutdown distance does not correspond with the correct animat modelling result for cow-calf pairs during migration behaviour at 140 dB SPL, which is predicted to be 18.4 km. On this basis, the EP does not demonstrate that the 13 km distance would provide sufficient to coverage for exposures above 140 dB SPL. Irrespective of whether the extent of the proposed shutdown is 13 km or 18.4 km, the shutdown range would be beyond the observation range of MFOs (~5 km) and PAM (~10 km) from the survey vessel, noting that and the spotter vessel with MFOs and PAM is proposed to be located 20 km inshore of the survey vessel. Therefore, the EP does not demonstrate that detection capabilities can monitor over the required distance. These inconsistencies would benefit from clarification to ensure they can be implemented correctly. However, the assessment team has also considered that this control measure seems to apply only offshore of the survey vessel, only within the migration BIA, and at a time when the whales in that location would be departing the region. Further, the control is based on exposure to 140 dB, which is conservative for migration.

    b. Pre-start up procedures include 'No confirmed detections of a SRW in the preceding 24 hours from any detection platform (including shore based MFOS)'. However, noting that the recovery plan and historic data show that SRWs are present in the reproduction BIA in September, the EP has not demonstrated that this 24-hour criterion would be sufficient in the event that SRW cow-calf pairs were observed in the reproduction BIA in the days prior to start-up. While it is noted that a reasonable coastal monitoring programme will be underway, it is possible that SRWs could go undetected for 24 hours and would still be utilising the BIA for reproduction behaviours at the time the survey commences. However, it is also noted that sound source verification will be implemented with the intent of promptly shutting down the seismic source if received levels of impulsive sound in the reproduction BIA exceed 120 dB SPL.

    Giving appropriate consideration to these issues, the assessment team does not consider these inconsistencies or uncertainties a reason to not be reasonably satisfied that measures can function effectively

44. The EP includes a comprehensive evaluation of whether the proposed activity will be of an acceptable level and will not be inconsistent with relevant recovery actions in the SRW recovery plan. The titleholder's rationale is presented in the further assessment in Appendix F3 (Section 3.1) and in the acceptable levels assessment in Appendix F4 (Section 5.9 'Compliance with the EPBC Act'). A well-reasoned case is made that the activity can be managed in a manner not inconsistent with the recovery plan.

Reasons not to be reasonably satisfied

Uncertainty in acoustic modelling and impact predictions

45. The EP does not demonstrate that underwater noise impacts to protected matters will be of an acceptable level because predictive uncertainty has not been adequately addressed. The EP contains numerical acoustic modelling studies prepared by two different modelling providers and different modelling methods. These studies produce materially different predicted impact ranges, resulting in two contrasting lines of evidence that are not adequately evaluated, reconciled, or justified in the EP.

46. Control measures are not adequately conservative to address the level of uncertainty that has been introduced, or account for potentially larger areas of impact. Despite the substantial uncertainty created by the divergent modelling outputs, the EP adopts some control measures derived solely from the shorter predicted ranges, without demonstrating an appropriate level of conservatism. For example, given the two contrasting lines of evidence, the EP has not demonstrated that the reduced 5 km shutdown zone for blue whales will be sufficient to manage sound in a manner that is not inconsistent with the Blue Whale Conservation Management Plan (e.g. 'any blue whale continues to utilise the area without injury, and is not displaced from a foraging area').

47. The EP does not provide adequate adaptive management for receptors other than southern right whales in the event that sound verification indicates exceedances, leaving a clear gap in the ability to manage impacts to foraging pygmy blue whales and other fauna, if predictions prove unreliable.

Uncertainty in prediction of impacts to penguins

48. The EP has not adequately demonstrated that areas of uncertainty in impact predictions have been addressed or that defined acceptable levels relating to behavioural disturbance impacts to little penguins ('Any behavioural responses to diving birds including penguins are minor, short-lived and do not reduce survival, reproductive success, access to nesting sites, or overall population viability') are achievable. The reasons include:

    a. The EP has not provided sufficient clarity on what constitutes a 'population' for a reasonable conclusion about population viability to be made.

    b. Uncertainty in acoustic modelling predictions [45-47].

    c. Lack of clarity on the magnitude of impacts due to inconclusive lines of evidence presented in the impact assessment.

Impacts to blue whales not demonstrated to be consistent with the Blue Whale CMP

49. The EP has not adequately identified, acknowledged, and addressed uncertainty, or demonstrated that impacts to blue whales will be of an acceptable level or consistent with the requirements of the Blue Whale CMP ('any blue whale continues to utilise the area without injury, and is not displaced from a foraging area'). This is because the primary control measure proposed to prevent behavioural disturbance and TTS to blue whales is a 5 km shutdown zone that is based on the least conservative set of modelling predictions presented in the EP. Therefore, the EP has not demonstrated that uncertainty has been addressed or that measures for blue whales will be sufficient to manage sound in a manner that is not inconsistent with the Blue Whale Conservation Management Plan.

Socio-economic

Reasons to be reasonably satisfied

50. The process for evaluating acceptable levels involves evaluating impacts and risks in the context of how they comply or align with relevant internal and external policy settings, consideration of feedback received by the titleholder during relevant persons consultation (e.g., influenced multiple activity limitations which constrain spatial and temporal overlap with most fisheries in the region), relevant

legislative requirements such as s280 of the OPGGS Act and the principles of ESD as defined under the EPBC Act. The framework for defining acceptable levels is presented in Table F4-1 (Appendix F4).

51. The process for demonstrating that impacts and risks will be of an acceptable level is mostly commensurate with the nature and scale of the activity and the severity of its impacts and risks. The titleholder has typically applied more effort and rigour to evaluations where there is a higher degree of scientific uncertainty in predictions of impacts and risks and/or severity of potential consequence of impacts and risks. This is evident for:

    a. Underwater sound - concerns raised during consultation regarding the seismic activity and its potential (i.e., acoustic impacts) to affect King George Whiting recruitment into Corner Inlet. The titleholder acknowledged and reviewed cited literature provided, then provided a report assessing the state of the science on spawning locations and larval dispersal for Corner Inlet to demonstrate that any effects from the Regia MSS would be small and extremely unlikely to have any influence on population dynamics. Further, a targeted impact assessment of King George Whiting was conducted in Appendix F3, including data exploration of historical seismic surveys versus King George Whiting recruitment to Port Phillip Bay ('same year' and 'lagged by year') demonstrating no clear relationship.

    b. Underwater sound - addressing an unpublished FRDC study (at the time of EP submission) (http://www.frdc.gov.au/project/2019-072) that was referred by relevant persons during consultation (i.e., specifically, how the OAP may consider the study's findings). The study indicated a negative impact to eastern school whiting and tiger flathead catches in the Danish Seine Fishery for up to ~100 and ~200 days following a seismic survey, respectively. The titleholder has acknowledged that this is a single, unpublished study's preliminary finding, which is yet to have received peer-review, and there are no other studies that corroborate these findings (as demonstrated in seismic effects literature review in Appendix B8). They have contrasted the FRDC's unpublished findings with other studies (e.g., Antulli et al. 1999, McCauley et all. 2000, 2003, Meekan et al. 2021, Millar and Cripps 2013, Wardle et al 2001) which suggest fish behavioural patterns return to normal not long after the passing of the seismic source. Furthermore, the OAP claim-period for loss-of-catch adjustment demonstrates some degree of latitude in addressing the uncertainty around lingering seismic impacts to commercial catch rates by allowing viable claims to be made up to 30 days after the notified end date of the seismic activity. Refer to "*Other considerations – Other relevant documents*" of this document for further context on the status of this FRDC study.

52. The titleholder has identified and addressed areas of uncertainty in the impact and risk evaluations. Predictions of environmental impact and risk are suitably conservative, supported by appropriate modelling. For example:

    a. Uncertainty in prediction of survey physical presence impacts to commercial fisheries has been reduced through means of:

        i. using contemporary data from a representative timeframe to infer fishing locations and levels of fishing intensity (e.g., historical fishing activity data from 2010-2023 and 2011-2022 has been reviewed for Commonwealth-managed fisheries and Victorian-managed fisheries, respectively);

        ii. review of AFMA/VFA fishery publications, websites, and consultation feedback to identify potential changes in fishing areas during the potential period of the Regia MSS activity (2025-2028);

        iii. acknowledging and conservatively overcoming the low-resolution of some data (i.e., 'maximum area fished' blocks) subject to data privacy policies (e.g., where four of less Commonwealth-managed fishers have activity fished a designated block the relative fishing intensity is unknown for an area representing 60 x 60 nautical miles);

iv. seeking and attaining verification of the accuracy and reliability of the Commonwealth fishery regulators data from AFMA to address relevant person concerns; and

v. additional measures that will mitigate on-water interference with other marine users including support vessels to support on-water communication, notice to mariners/lookaheads to alert fishers of the survey, extensive consultation to identify other marine users that may be present within the OA, and pre- and post-survey communication planning with other marine users.

53. The EP provides well-reasoned and supported conclusions that physical presence impacts on commercial fishers will be managed to acceptable levels. The defined acceptable level (e.g., a tolerable level of interference with other marine users; no measurable effects to biomass or recruitment of target species (Appendix E1)) is compared to a predicted level of impact (i.e., 'moderate' as any displacement of fishing activity would be temporary, reversible and small-scale (Section 9 of Appendix E1)) and further mitigated through operational controls and the compensation protocol. Section 11 within Appendix E1 describes the relevant EPOs including a rationale of how each acceptable level and EPO will be met. Refer to line [55] for findings relevant to underwater noise impacts to commercially targeted species.

54. Information provided during relevant persons consultation is appropriately considered, evaluated, and incorporated into the EP where it is relevant. The key themes and concerns pertaining to commercial fishers and other marine users were shallow water areas for commercial fisheries, in combination with other socio-economic concerns such as diving, led to depth-based (i.e., no MSS < 50 m) activity limitations (in later EP revisions this was superseded to become "No seismic acquisition within 17km of Deen Maar / Lady Percy Julia Island"). Several commercial fishing stakeholders questioned the suitability of the OAP for the Otway region; elements of the protocol were subsequently added to appease such concerns (e.g., loss of catch adjustment for fishers that may be indirectly impacted by increased competition from other displaced fishers). Consultation with fishing associations such as SETFIA led to activity limitations in depths (e.g., > 200 m) that corresponded to key trawl grounds.

    SETFIA expressed concern about the resolution of the Commonwealth-managed fisheries data that was used to inform the impact assessment to commercial fisheries. The titleholder has noted some of the limitations of the data, specifically some data subject to privacy constraints (see AFMA Information Disclosure (FMP 12) and p. 6 of Appendix E1), where the level of fishing effort and the fishing location is unknown in such areas (i.e., 'maximum area fished' blocks). The titleholder has appeared to have addressed the limitations of the data through demonstration of the following:

    a. CGG has clearly acknowledged and reviewed the extensive fisher and fishing industry organisation feedback to ascertain certain fishing grounds, depth contours and peak seasons that would result in unacceptable outcomes (if overlapped by the activity) and hence require avoidance;

    b. it is evident that CGG has applied a conservative approach to predicting impacts to fisheries subject to 'maximum area fished' blocks overlapping the OA;

    c. controls and activity limitations adopted appear reasonable to reduce temporal or spatial activity overlap with key seasons, fishing grounds, or depth contours;

    d. any residual impacts experienced by a fisher, that cannot be mitigated by controls or avoided through activity limitations, will be eligible for compensation via the OAP.

Reasons not to be reasonably satisfied

55. The process used to demonstrate that impacts and risks will be managed to acceptable levels is not clear, systematic, defensible, and reproducible. This is because some defined acceptable levels pertaining to fish and some invertebrates include acoustic effects thresholds that will be exceeded during the activity. For example:

a. Defined acceptable levels for fish include a requirement for no exposure above a TTS threshold (186 dB SEL24h).

b. Defined acceptable levels for molluscs require that sound levels do not exceed 212 dB PK-PK.

c. Cephalopods are assigned an acceptable level based on a 162 dB SEL threshold.

Numerical acoustic modelling and the impact assessments predict that exposure of fish and invertebrates to sound levels above these thresholds will occur. Therefore, the EP does not demonstrate that the defined acceptable levels will be achievable, and no additional justification or control measures are identified to address this.

In addition, the defined acceptable level for fish and exposure above the TTS threshold is worded inconsistently in different parts of the EP, with the different forms alter interpretation of it to some degree, but neither form of the acceptable levels addresses the issue of it not being achievable or appropriate. The acceptable level is also inconsistent with the titleholder's own justification in the impact assessments that implies that TTS effects are temporary and recoverable and acceptable.

56. Some information provided during relevant persons consultation is not appropriately considered, evaluated, and incorporated into the EP where it is relevant. For example, a request was made during consultation by SETFIA for "*no MSS collection or turning overlaps the Orange Roughy Data Collection area and further that there be a reasonable buffer to ensure that fish are not disturbed*" (Event ID 1649). The rationale behind this was that any disturbance to fish may compromise the integrity of the data underpinning the Orange Roughy Research Program (a joint industry-AFMA initiative) and "*any disturbance of the fish means the time series is broken*" (Event ID 1649). While the titleholder adopted an activity limitation (Section 4.2 of Appendix A) prohibiting sound source discharge within the research areas, it did not include a spatial buffer and instead relied on studies of cod suggesting negligible disruption to the spawning behaviour of cod within 5–40 km of seismic surveys. This justification does not address potential seismic impacts on fish catchability, which was central to SETFIA's concern.

    Additionally, the latest acoustic modelling conducted by SLR adopts a new fish behavioural disturbance threshold of 150 dB (a change from the former qualitative criteria [Popper et al. 2014] adopted in the earlier JASCO modelling). The new modelling predicts a fish behavioural disturbance distance extending 13.2 km from the seismic source – breaching the current 5.2 km buffer. It is therefore not evident that the titleholder's assessment of merit is reasonable or supported for SETFIA's claim, or measures adopted are appropriate.

First Nations cultural features and values

Reasons not to be reasonably satisfied

57. In relation to First Nations cultural features and values, it is considered that the EP does not demonstrate the impacts and risks from the activity will be of an acceptable level because of the following matters:

    a. The EP uses relevant sources of information to describe tangible and intangible cultural values as "symbiotic and inseparable" and establishes a process for management of impacts and risks to intangible cultural values through the management of impacts and risks to the tangible environmental features that are associated with the intangible values.

    b. Subsequently, defined acceptable levels for impacts to specific environmental sensitivities such as marine fauna are considered to also be relevant for defining the acceptable level to associated cultural values. It follows that management of impacts and risks to environmental sensitivities to acceptable levels is considered relevant for managing impacts and risks to associated cultural values to acceptable levels.

    c. Due to the "symbiotic and inseparable" nature of tangible and intangible cultural values outlined above, the various issues remaining in the EP relating to demonstration of acceptability outlined under the protected matters and socio-economic topics above result in the EP not demonstrating

impacts and risks from the activity to First Nations cultural features and values can be managed to an acceptable level.

Based on the above findings, the assessment team recommends that the decision maker cannot be reasonably satisfied that the EP meets the requirements of regulation 34(c).

Criterion 34(d) – EP provides for environmental performance outcomes (EPOs), environmental performance standards (EPS), and measurement criteria (MC)

Reasons to be reasonably satisfied

In determining whether the EP demonstrates that the requirements of regulation 34(d) are met, the assessment team found that:

58. The EP includes EPOs that are clear, unambiguous and address all identified impacts and risks relevant to the activity. For example (but not limited to):
    a. EPO "No death or injury to fauna, including listed threatened or migratory species, from the activity"
    b. EPO "No introduction of a known or potential invasive marine species"
    c. EPO "No accidental release of fuel to the marine environment"
    d. EPO "Planned discharges and atmospheric emissions comply with maritime law"
59. The EP contains some EPOs which are not considered to meet the definition of an EPO. For example, "Maintain arrangements to respond to an unplanned release of fuel in accordance with the OPEP". When deciding on whether NOPSEMA could be reasonably satisfied under 34(d), weight was not given to EPOs of this nature in isolation.
60. Some EPOs are consistent with the principles of ESD and relevant requirements (such as species recovery plans, plans of management and other statutory instruments). For example:
    a. EPO "No loss of materials or waste overboard" is consistent with the requirements of Threat Abatement Plan (Commonwealth of Australia 2018), Wildlife Conservation Plan for Seabirds (2020), National Recovery Plan for Albatrosses and Petrels (2022) which have identified marine debris as a threat to wildlife.
    b. EPO "Light emissions are managed to avoid displacing turtles or disrupting nesting, foraging, or migratory behaviours within or near biologically important areas" aligns with Action Area A8 of the Recovery Plan for Marine Turtles in Australia, which has identified light pollution as a threat to marine turtles.
61. The EP includes EPSs that are linked to control measures determined through the impact and risk evaluations via a tabulated system in Appendix G1.
62. The EP includes EPSs that contain clear and unambiguous statements of environmental performance. The statements of environmental performance describe how each of the adopted control measures will function and perform to effectively reduce environmental impacts and risks to ALARP and to an acceptable level. For example:
    a. EPS "Tails buoys designed so they do not represent an entrapment risk to turtles or turtle guards will be used" provides a clear statement of performance for the "Turtle Guards" control measure.
    b. EPS "Pre bunkering inspection confirms dry break couplings and bunkering hoses are in serviceable condition and certified for use and tank inventories are taken prior to, during and after transfer" provides clear statements of performance for the "Vessel bunkering procedure" control measure.

63. Generally, the EPS have clear measurement criteria outlining how environmental performance will be measured. The measurement criteria are suitable for verifying that the defined levels of environmental performance are being met. For example, measurement criteria "Waste transfer records and entries in the Garbage Management Book confirm that all collected waste was disposed of onshore, with records detailing each transfer and disposal event" is suitable for verification that the relevant EPS is met.

64. The suite of EPOs, EPSs and MC are linked and complementary and can be monitored for compliance, to ensure that environmental impacts and risks are being reduced to ALARP and acceptable levels. EPOs, EPSs, and MC are linked through a tabulated system in Appendix G1. EPOs also have their own MC against which to monitor compliance.

65. In relation to impacts and risks to relevant to First Nations cultural features and values:

    a. The EP uses relevant sources of information to highlight the connectivity between First Nations cultural features and values and other environmental sensitivities such as marine fauna and ecological processes. Subsequently, it is considered that EPOs, EPSs, and MC relevant to monitoring environmental performance in relation to specific environmental receptors to be relevant for monitoring environmental performance in relation to corresponding tangible and intangible First Nations cultural values. For example, EPO "No death or injury to fauna, including listed threatened or migratory species, from the activity" is considered to be relevant for ensuring no mortality or injury of fauna of cultural significance.

    b. Although EPO "Social, cultural and economic features are protected, sustaining their value for people and communities" in isolation is not directly measurable due to ambiguous terminology, it is considered that by meeting other relevant EPOs, this EPO could also be met, such that cultural features and values may be considered to be "protected". For example, if EPO "No accidental release of fuel to the marine environment" was achieved, it is considered that identified cultural features and values would be "protected" from the occurrence of this risk.

Matters protected under Part 3 of the EPBC Act

Reasons to be reasonably satisfied

66. The EP includes EPOs to address underwater sound impacts to protected matters. These are provided for all relevant receptor groups. Most EPOs in Appendix G1 in relation to underwater sound and protected matters (with the exception of 61 below) are clear, unambiguous, are achievable, and are broadly linked to defined acceptable levels.

67. The EP includes EPSs relating to underwater sound impacts and protected matters are directly linked to control measures. The assessment team is also reasonably satisfied that the EP includes EPSs that are linked to specific procedures and Actions outlined in documents under the titleholder's environment management system, such as the Fauna Management Plan and the SRW Coastal Monitoring Program Implementation Plan.

68. The EP includes EPSs which have clear statements of performance and measurement criteria. The EPOs, EPSs and measurement criteria are linked and complementary and the EPOs and EPSs can be monitored for compliance.

Reasons not to be reasonably satisfied

69. The EP includes EPOs for SRWs that include ambiguous terms, are incomplete, or are not consistent with defined acceptable levels or the obligations of a recovery plan. These EPOs, when considered in combination with the evaluation of impacts and risks, do not provide confidence that the activity is able to be managed to acceptable levels. For example:

    a. The impact assessment in Appendix F3 (Further Assessment of Key Environmental Values and Sensitivities) states that 'To meet the Recovery Plan obligations and the defined acceptable levels, the management approach must ensure that SRWs can continue to utilise the

reproduction BIA and that the risk of behavioural disturbance is minimised… To operationalise these principles, CGG will manage to an EPO whereby, "No behavioural disturbance will occur to any SRW within the reproduction BIA as a result of the Regia MSS."' However, the EPO referenced is not included in Appendix G1 (Environmental Performance Tables), which indicates that the EP has not set this EPO[1].

b. Instead, Appendix G1 includes an EPO, 'As a result of the implementation of real-time monitoring and activity limitations, SRW are not exposed to sound levels that cause substantial behavioural disturbance within or adjacent to BIAs or HCTS'. However, the EP does not define "substantial behavioural disturbance" or demonstrates the activity will not be inconsistent with requirements the Southern Right Whale (SRW) Recovery Plan with respect to managing impacts of underwater noise (i.e. does not prevent any southern right whale from utilising the area, and the risk of behavioural disturbance is minimised).

c. The EPO, 'Underwater sound emissions from the Regia MSS are empirically measured and validated through the sound source verification procedure to ensure they remain within levels that do not cause injury or unacceptable disturbance to Southern Right Whale' is ambiguous as it does not define what an "unacceptable disturbance" is.

d. The EPO, 'As a result of implementation of the suite of mitigation measures, SRW are not exposed to sound levels that result in auditory impairment or displacement from BIAs or HCTS' is not aligned with requirements the Southern Right Whale (SRW) Recovery Plan to not prevent any southern right whale from utilising the area; SRWs can be prevented from undertaking sensitive reproduction behaviours (e.g. nursing, accompanying dependent young) within the reproduction BIA without having to be disturbed to the extent that they are displaced from the area.

e. Appendix G1 contains an incomplete EPO relevant to SRWs, – 'As a result of implementing shutdown or relocation procedures when a SRW enters the 13km ensonified area ' [sic]. As the EPO is incomplete in Appendix G1, it is unclear what the level of environmental performance to be achieved is intended and, therefore, whether the EP would not be inconsistent with the SRW Recovery Plan.

As per issues relating to uncertainty with acoustic modelling and impact predictions summarised under criterion 34(c)[45-47], the EP includes an EPO for blue whales, 'As a result of shutting down or relocating the sound source when a blue whale is observed within 5 km, blue whales will not be behaviourally disturbed within this range, leading to the protection of important foraging areas and avoidance of displacement', which does not demonstrate that the activity is able to be managed to acceptable levels or offer a sufficient level of protection to ensure the activity can be undertaken in a manner consistent with the Blue Whale CMP.

Socio-economic

Reasons to be reasonably satisfied

70. The EP includes EPOs that are generally clear, unambiguous and address all identified impacts and risks relevant to the activity. Four EPO's (Table E1-3 of Appendix E1) related to the physical presence of the seismic survey cover social (e.g. diving), cultural and economic (e.g., marine tourism; commercial fishing operations) impacts as well as on-water interactions (e.g., collision risk and safety) and indirect impacts

[1] The EP (page 76) states that "The tables in Appendix G1 set out environmental performance for the activity… Any inconsistencies that may be found in other parts of the EP are considered superseded by the tables in Appendix G1. Such inconsistencies that remain in the EP are either an artefact from the passage of time due to the iterative nature of the process, or an unintentional error."

(e.g., localised depletions of a stock due to increased fishing competition from displacement). The EPO's relating to underwater sound impacts to commercially targeted species, in summary, cover the following: no exceedances of sound thresholds (e.g., TTS for fish, human health safety criterion for divers, etc.), and no changes to stock status (or biomass) of target species during and following the activity.

71. The majority of EPOs demonstrate that impacts and risks will be managed to an acceptable level and reflect a level of environmental performance for management that is achievable. For example, one of the EPOs concerning physical presence impacts ("*As a result of the activity limitations and the adoption of the Otway Adjustment Protocol, no commercial marine user will be worse off because of the activity*") is inextricably linked to the acceptable level of impact defined in Table E1-2, Appendix E1 (which is a derivation of s280 of the OPGGS Act). The EP has measures and processes in place that ensure the stated environmental performance will be achievable and met; for example, implementation of the OAP ensures that commercial marine users impacted from unavoidable seismic activity will be compensated fairly. Adherence with maritime legislation such as COLREGs, the *Navigation Act 2012*, Marine Orders in addition to other measures such as Notice to Mariners notifications, On Water Communications Plan, petroleum SIMOPs plan and support vessel attendance will provide assurance to avoiding collisions with other marine users.

72. The EPOs are consistent with the principles of ESD (as outlined in Section 10 of Appendices E1, E3, E4, and E8) and relevant requirements (such as adherence to the OPGGS Act, *Navigation Act 2012*, MARPOL, COLREGS, Fisheries Management Act 1991, Diving Medical Advisory Committee guidance and relevant Marine Orders).

73. The EP mostly includes EPSs that are directly linked to control measures determined through the impact and risk evaluations. The control measures relating to socio-economic receptors impacted by the MSS physical presence and underwater sound are presented in Sections 1.7 and 1.8 of Appendix G1, respectively, alongside their complimentary EPS and MC.

    There is, however, an EPS that has inconsistent details with those in its accompanying control measure. The EPS related to the OAP control measure states that, "*A claim can be lodged up to 180 days after the completion of the activity*" (Section 1.7 of Appendix G1). This is inconsistent with the claim period stated in Appendix G4 (i.e., 183 days). Additionally, the Implementation Strategy interchangeably refers to this claim period as 6 months and 183 days. Given the claim period is of a reasonable duration (i.e., equal to or better than other industry compensation protocols) for claimants to sufficiently compile the supporting evidence to submit a claim, the three-day discrepancy between EPS and control measure is unlikely to result in fishers being worse off (and unacceptable environmental outcomes).

74. The EPS contains clear and unambiguous statements of environmental performance. The statements of environmental performance describe how each of the adopted control measures will function and perform to effectively reduce environmental impacts and risks to ALARP and to an acceptable level.

75. The EPS have clear measurement criteria outlining how environmental performance will be measured. The measurement criteria are suitable for verifying that the defined levels of environmental performance are being met. For example, the streamer tail buoy control measure used to prevent physical presence impacts to other marine users (Appendix G1), will be photographed pre-deployment confirming appropriate fitting to streamers and audit records will verify visibility compliance. These criteria are suitable to ensure seismic survey gear such as streamers are detected by other vessels mitigating any potential for interference.

76. The suite of EPOs, EPSs and MC are linked and complementary and can easily be monitored for compliance, to ensure that environmental impacts and risks are being reduced to ALARP and acceptable levels.

Reasons not to be reasonably satisfied

77. As noted earlier for the defined acceptable levels (refer to findings under acceptance criterion 34(c)), the application and framing of acoustic impact threshold criteria within EPO's were found to be inappropriate

and unclear. For example, the following EPO, "*Fish will not be exposed to cumulative sound levels exceeding 186 dB SEL cum24hr for more than 24 hrs*" may not represent a reasonable level of protection as TTS may occur at or within 24 hours, so the EPO may facilitate TTS occurring in fish. Furthermore, acoustic modelling and the impact assessment predicts this exposure of fish to TTS may occur – hence the EPO is unachievable.

First Nations cultural features and values

Reasons not to be reasonably satisfied

The EP considers all EPOs to be relevant for managing impacts to First Nations cultural features and values (Appendix F3, Section 3.16.2). Subsequently, the various issues outlined under the protected matters and socio-economic scopes above result in the EP not demonstrating the EP provides appropriate EPOs for First Nations cultural features and values.

Based on the above findings, the assessment team recommends that the decision maker cannot be reasonably satisfied that the EP meets the requirements of regulation 34(d).

Criterion 34(e) – EP includes an appropriate implementation strategy and monitoring, recording, and reporting arrangements

Reasons to be reasonably satisfied

In determining whether the EP demonstrates that the requirements of regulation 34(e) are met, the assessment team found that:

78. The EP includes appropriate systems and processes commensurate to the nature and scale of the activity because:

79. The EP (Section 8 and Appendix B3) contains an appropriate implementation strategy.

80. The EP states when the titleholder will report to NOPSEMA in relation to the titleholder's environmental performance for the activity. For example, Appendix B3, Table B3-5 outlines the routine reporting obligations to NOPSEMA, including annual environmental performance reporting.

81. The implementation strategy contains a description of the environmental management system (EMS) for the activity. This provides for:

    a. Measures to ensure that control measures in the EP continue to be effective in reducing impacts and risks to ALARP and acceptable levels, and monitoring arrangements are in place to determine whether, and ensure that, EPOs and EPSs are being met.

    b. Adequate and effective processes and systems in place to ensure that all impacts and risks continue to be identified and reduced to ALARP and acceptable levels. The implementation strategy includes processes and systems for environmental performance monitoring, audit, management of non-conformance and review, management of knowledge, learning and change, record keeping and reporting.

    c. The EP describes adequate and effective processes and systems in place to ensure that all impacts and risks continue to be identified and reduced to ALARP and acceptable levels. The implementation strategy includes processes and systems for environmental performance monitoring (Appendix B3, Section 5.6.1), audit (Appendix B3, Section 5.6.3), management of non-conformance and review (Appendix B3, Section 5.6.5), management of knowledge (Appendix B3, Section 5.3.4), learning and change (Appendix B3, Section 5.3.2), record keeping (Appendix B3, Section 9.1) and reporting (Appendix B3, Section 7).

82. The implementation strategy includes appropriate management of knowledge and change processes that provide for the titleholder to undertake monitoring for and understand changes in both internal and

external context relevant to the activity, implement processes to consider changes in the context of environmental impacts and risks and regulatory requirements, and to have accepted changes implemented (Appendix B3, Sections 5.3.2 and 5.3.4). A check of the currency of environmental knowledge that underpins the environmental assessments for the activity will be carried out one month prior to the survey commencing (Appendix B3, Section 5.3.4). Management of changes relevant to the scope of the activity will be managed in accordance with regulation 38. Changes will be assessed as per the CGG Risk Management and MoC Process to determine the significance of any potential new environmental impacts or risks not provided for in the EP. Any new information, changes or updates considered via the MoC process will also be considered against Section 39 of the regulations to determine whether resubmission of the EP to NOPSEMA is required. Consideration of the triggers for resubmission will occur after the MoC has been completed and will result in a "minor" or "major" revision.

83. The implementation strategy establishes a clear chain of command (Appendix B3, Section 5.4.7), setting out the roles and responsibilities of personnel in relation to the implementation, management, and review of the EP (Appendix B3, Table B3-2), including during emergencies or potential emergencies, consistent with the requirements of regulation 22(3).

84. Appendix B3, Figure B3-1 and Table B3-1 outlines the organisation structure for the petroleum activity and the roles and responsibilities of key personnel involved in the implementation, management, and review of the EP.

85. The roles and responsibilities of key personnel involved in spill preparation and response are outlined in Appendix B3, Section 4.8. The EP includes a description of the Project HSE plan and vessel-specific Emergency Response Plan (ERP) that will contain the arrangements and capability for the implementation of the incident management system and an incident management team (IMT). The roles, responsibilities and reporting lines will be defined for all personnel with responsibilities in the IMT in the vessel-specific ERP.

86. The implementation strategy includes measures to ensure that each employee or contractor working on, or in connection with, the activity is aware of their responsibilities in relation to the EP, including during emergencies or potential emergencies, and has the appropriate competencies and training. For example:

    a. Appendix B3, Section 5.5.1 outlines the measures that are in place for ensuring employee and contractor competency, including the necessary awareness, training, and induction requirements to fulfil their duties. An activity-specific environmental induction with cover environmental responsibilities relevant to the duties and responsibilities of the roles.

    b. Appendix B3, Section 5.5.2 describes the minimum training and competency requirements of personnel and defines training standards that are aligned with relevant industry good practice. Competency requirements for IMT personnel will be included in the vessel-specific ERP national and state emergency management training programs.

87. The implementation strategy provides for sufficient monitoring, recording, audit, management of non-conformance and review of the titleholder's environmental performance and the implementation strategy to ensure that the EPOs and EPSs in the EP are being met. For example:

    a. Appendix B3, Section 5.6.3 outlines the process for inspections and audits including scope, purpose, and frequency.

    b. Monitoring of environmental performance is described in Appendix B3, Section 5.6. An Environmental Compliance Register (ECR) that includes all commitments made in the EP will be developed and used as an audit tool to track compliance during the activity.

    c. Management of non-conformance is described in Appendix B3, Section 6.5. Non-conformances and opportunities for improvement will be identified, and corrective Actions will be tracked to completion using the ECR. Corrective Actions will specify the remedial Action required to fix the breach and prevent its reoccurrence and is delegated to the person deemed most appropriate

to fulfil the Action. Management of non-conformance may necessitate a management of change and/or management of knowledge process to be implemented.

88. The implementation strategy provides for sufficient monitoring of, and maintaining a quantitative record of, emissions and discharges (whether occurring during normal operations or otherwise), such that the record can be used to assess whether the EPOs and EPSs in the EP are being met). For example, Appendix B3 Section 6.1 outlines the approach to monitoring and record keeping for emissions and discharges.

89. The implementation strategy contains an appropriate oil pollution emergency plan (OPEP) (Appendix G3) and provides for the updating of the plan, consistent with the requirements of regulation 8.

90. The OPEP includes adequate arrangements for responding to and monitoring oil pollution. Appendix B3 and G3 includes:

    a. The control measures necessary for timely response to an emergency that results or may result in oil pollution;

    b. The arrangements and capability that will be in place for the duration of the activity to ensure timely implementation of the control measures including arrangements of ongoing maintenance of response capability. Appendix B3 outlines the relevant emergency management arrangements to respond to the potential worst case credible spill scenario and includes information pertaining to the appropriate response authorities (for both Commonwealth and relevant State waters). Appendix G3, Section 5.4 includes the roles and responsibilities of titleholder personnel under emergency conditions.

    c. The arrangements and capability that will be in place for monitoring the effectiveness of the control measures and ensuring that the EPSs for the control measures are met. Section 8 of Appendix G3 includes details of the response strategy selection based on the worst-case credible spill scenario. These response strategies (e.g., monitor and evaluate; containment and recovery; shoreline protection and clean-up) are described in Table G3-1. Operational considerations, oiled wildlife response, and communications with other marine users during a spill are outlined in Appendix G3, Section 8.3. Relevant environmental performance monitoring (EPOs, EPSs, and MC) is outlined in Appendix G1.

    d. The arrangements and capability in place for monitoring oil pollution to inform response activities. Table G3-1 identifies "monitor and evaluate" as a primary response strategy. Appendix G3, Section 9 describes the operational and scientific monitoring program that would be undertaken if a spill occurred. Oil spill trajectory modelling will be undertaken to determine the extent and direction of the spill as well as the risk of toxicity impacts to sensitive receptors.

91. The implementation strategy (Appendix B3, Section 5.2.1) includes arrangements for testing the response arrangements in the OPEP that are appropriate to the response arrangements and to the nature and scale of the risk of oil pollution for the activity. For example, Appendix B3, Section 5.1.2 states that the OPEP will be desktop tested at least 8 weeks before the commencement of the survey, which is considered commensurate with the nature and scale of the worst-case credible spill scenario (250m3 MDO) and the short duration (up to 90 days).

    a. The arrangements for testing the response arrangements includes a statement of the objectives of testing, a proposed schedule of tests, mechanisms to examine the effectiveness of response arrangements against the objectives of testing, and mechanisms to address recommendations arising from tests. For example, Appendix B3, Section 5.1.2 states that the pre-commencement drill would test key factors including (but not limited to) roles and responsibilities, communications, equipment, and procedures.

    b. The proposed schedule of tests is consistent with the requirements of regulation 22(8C). For example, Appendix B3, Section 5.1.2 states that the OPEP will be tested prior to the survey

commencing, following any significant amendment of the response arrangements, when a new seismic vessel is engaged for the activity and no later than 12 months after the most recent test.

92. The implementation strategy provides for monitoring of impacts to the environment from oil pollution and response activities that is appropriate to the nature and scale of the risk of the environmental impacts and risks for the activity and is sufficient to inform any remediation activities.

93. The arrangements established are consistent with the national system for oil pollution preparedness and response.

94. The implementation strategy provides for appropriate ongoing consultation during the implementation of the petroleum activity with relevant authorities of the Commonwealth, a State or Territory and other relevant interested persons or organisations. This is because the EP outlines arrangements for ongoing consultation in Appendix B3, Section 8 including ongoing notifications and communications with relevant persons and appropriate processes to continually identify and consult with new relevant persons throughout the life of the EP. Additionally, a 'Sea Country Protection Plan' (Appendix B3, Section 5.4.5) is in place to facilitate ongoing identification and management of information relevant to the activity through collaboration with First Nations peoples.

Reasons not to be reasonably satisfied.

95. There are a number of EP commitments, throughout different appendices, that do not have associated environmental performance standards or measurement criteria (for example, but not limited to, a commitment in Appendix A1 (Description of the activity) that deployed equipment will not be towed through an Australian Marine Park). Because of this, the ECR (outlined above) is the sole mechanism for ensuring and tracking ongoing compliance with all EP commitments. The EP (Appendix B3, Section 5.6.3) details only one audit of the ECR (during the commencement audit, within 7 days of the activity commencing). This is not demonstrated to be sufficient for ongoing assurance that all EP commitments are complied with during an activity of up to 90 days.

96. The EP includes provisions for more regular reviews top confirm that EPOs/EPSs are being met, and the implementation strategy also includes a weekly audit of daily operations and HSE reports. However, this does not resolve the issue outlined above as these reviews and audits do not include all EP commitments. Therefore, NOPSEMA cannot be reasonably satisfied that the EP includes assurance mechanisms.

Socio-economic

97. The implementation strategy is appropriate for the nature and scale of the physical presence and underwater noise impacts to commercial fishers and other marine users (Appendix B3). This is demonstrated by the following:

    a. The EP provides specific measures to continually identify and reduce impacts to ALARP. This has been demonstrated through an OAP (Section 5.2.1) which describes the features of the compensation protocol including what types of claims are valid, the evidence needed to validate a claim, relevant timeframes for claims, adjustments and compensation, and dispute mechanisms.

    b. The EP provides specific measures to ensure effectiveness of control measures such as an 'Acquire seismic on paper workshop' (Section 5.3.1). This measure is to be undertaken at least four weeks prior to commencement of the survey and aims to workshop knowledge, identify project risks, rehearse predictable scenarios, and highlight survey boundaries amongst stakeholders, technical staff, contractors, and decision makers;

    c. The EP provides specific measures to ensure environmental performance is met, for example, an 'On water communications plan' (Section 5.4.1) covers on-water external communications with other marine users including methods of communication on the water and when they are required to occur. Additionally, a 'Sail Line Plan' (Section 5.4.4) is the primary resource that

ensures the contractor carries out the survey in accordance with the EP description of activity, including adherence with all activity limitations.

98. The implementation strategy does not always provide for sufficient monitoring (Section 5.6.1), recording (Section 5.6.2), audit (Section 5.6.3), management of non-conformance (Section 5.6.5) and review (Section 5.6.4) of the titleholder's environmental performance and the implementation strategy to ensure that the EPOs and EPSs in the EP are being met. These reasons are discussed in detail under acceptance criterion 34(e) of the general topic. The following were considered appropriate examples of audit, inspections and review pertaining to the socio-economic topic:

    a. vessels will be inspected once prior to survey commencement to verify compliance with COLREGS, the Navigation Act 2012, SOLAS, and Marine Orders. It will also verify that the sound source and streamers are cleaned and inspected (Section 5.6.3); and

    b. the OAP will be subject to review and update at least once every 12 months (Section 8.2).

99. Section 8 of the Implementation Strategy outlines suitable arrangements for ongoing stakeholder consultation. Specific notifications are listed that will be made as part of the consultation plan in Section 8.1 (e.g., daily notifications to relevant persons requesting 24, 48, or 72-hour 'lookaheads'; adverts to be placed in local dive shops two weeks prior to the survey detailing the SIMOPS plan and protective measures in place for divers). Furthermore, the titleholder will meet with relevant persons on request (Section 8.2), maintain the Regia MSS Consultation Hub website (Section 8.3), continue hosting online webinars every 2 months when the EP is in-force (Section 8.4), and provide project updates to relevant persons at key milestones (Section 8.5).

Based on the above findings, the implementation strategy is not consistent with the requirements of regulation 22.

Based on the above findings, the assessment team recommends that the decision maker cannot be reasonably satisfied that the EP meets the requirements of regulation 34(e).

Criterion 34(f) – EP does not involve the activity or Part of the activity, being undertaken in any Part of a declared World Heritage property

In determining whether the EP demonstrates that the requirements of regulation 34(f) are met, the assessment team found that:

100. The EP includes a description of the activity in context of the boundaries of declared World Heritage Properties to clearly demonstrate that no Part of the activity will be undertaken in any Part of a World Heritage Property, with the exception of arrangements for environmental monitoring and responding to an emergency. The closest World Heritage Property to the activity is the Budj Bim Cultural Landscape World Heritage Property, which is located inland, outside the OA (~20 km offshore).

Based on the above findings, the assessment team recommends that the decision maker can be reasonably satisfied that the EP meets the requirements of regulation 34(f).

Criterion 34(g) – EP demonstrates that the titleholder has carried out the consultations required by Division 3; and the measures (if any) that the titleholder has adopted, or proposes to adopt, because of the consultations are appropriate

Reasons to be reasonably satisfied

In determining whether the EP demonstrates that the requirements of regulation 34(g) are met, the assessment team found that:

101. The EP contains a sufficient description of the titleholder's processes for identifying and consulting 'relevant persons' for the purposes of regulation 25 under Division 3 (Section 4 and Appendix C1).

102. The identification process demonstrates a comprehensive approach to broadly determining relevant persons by:

a. Considering all the categories of relevant persons defined under regulations 25(1)(a)-(e).

b. Applying appropriate interpretations of "functions", "interests" and "activities" consistent with NOPSEMA's 'Consultation in the course of preparing an environment plan guideline' (N-04750-GL2086).

c. Drawing on multiple information sources such as publicly available materials, reviews of databases and registers, published guidance, and advice from other relevant persons.

d. Thoroughly taking into account the nature of the activity, environmental context, and predicted impacts and risks.

e. Involving mechanisms for enabling self-identification through raising public awareness about the activity and consultation process across a range of reasonable media forums.

f. Reflecting consideration of case law relevant to the task of identifying relevant persons including Santos NA Barossa Pty Ltd v Tipakalippa [2022] FCAFC 193 (Tipakalippa Appeal).

103. The EP provides suitable details, evidence, and records to support that the titleholder has carried out consultation with each relevant person effectively and in the manner specified in regulations 25(2)-(4).

104. The titleholder gave each relevant person sufficient information in line with regulation 25(2). For example, the titleholder's consultation process involved:

a. Explaining the purpose and regulatory requirements of consultation such as through sharing NOPSEMA's brochure on 'Consultation on offshore petroleum environment plans: Information for the community'.

b. Supplying details about the activity, potentially affected environment, predicted impacts and risks, and proposed control measures through a range of formats such as summaries, maps, webinar videos, preliminary assessments, and full versions of the EP.

c. Using varied engagement methods such as emails, calls, meetings, and information sessions, adopting a flexible two-way approach, and responding to reasonable requests for additional information where practicable, ensuring relevant persons had genuine opportunities to participate.

d. Entering into fee-for-service agreements with some commercial fishing associations to facilitate effective consultation with commercial fishers.

e. Providing tailored information to many relevant persons such as First Nations representative groups in response to their specific requests and concerns.

f. Providing detailed responses to relevant persons' feedback, aside from one instance where a proposed response in the consultation report had not been sent before the final EP was submitted, though the EP still demonstrates through the titleholder's previous responses that the relevant person already had access to sufficient information (applies to consultation with Gunditj Miring Traditional Owner Aboriginal Corporation (GMTOAC) through its legal representative Environment Justice Australia (EJA)).

105. The titleholder allowed a reasonable period for the consultation in line with regulation 25(3). For example, the titleholder's consultation process involved:

a. Initially contacting most relevant persons well before the initial EP submission between February and December 2023, with later-identified relevant persons engaged as soon as practicable and at least 3 months before the final EP submission.

b. Providing reasonably timely responses considering the high number of relevant persons that they consulted, sending clear reminders about key dates related to the consultation process, and transparently communicating submission timeframes and updates.

c. Multiple attempts to follow-up with non-responsive relevant persons using alternative communication methods where practicable.

d. Accommodating requests for additional time and opportunity to participate in consultation in the preparation of the EP, except in limited circumstances that did not undermine the overall reasonableness of the consultation period (also the see findings at [109]).

e. Continually engaging in consultation with relevant persons beyond the formal period, with numerous examples of meetings and information requests being addressed right up to the final EP submission.

106. The titleholder advised each relevant person of their right under regulation 25(4)(a) to request that consultation information not be published, as evidenced within consultation records such as emails, letters, and information sheets. Additionally, consultation records show that some relevant persons made these requests (e.g. Org IDs 9, 13 and 215 and Redacted Person IDs 810, 642, 818, 231, 328, 343 and 372), and that corresponding information was included only in the sensitive information Part of the EP and not elsewhere as required by regulation 24(4)(b).

107. The EP contains statements by the titleholder asserting that their obligation to consult relevant persons was met prior to the first EP submission to NOPSEMA for public comment (see Section 4.1). However, it is noted that the consideration of whether the EP demonstrates that the titleholder's duty to carry out relevant persons consultation has been discharged took into account all consultation that occurred in preparation of, and as documented within, the final EP submission.

108. The findings at [101]-[107] all support that the requirement of regulation 34(g)(i) is met, being that the EP demonstrates the titleholder has carried out the consultations required by regulation 25.

109. In the case of this EP, not all relevant persons may agree with the view presented at [108]. This was after noting the various concerns and assertions recorded during consultation regarding the adequacy of the titleholder's consultation process. Notable examples, and how they were considered in concluding that the EP has met the requirement of regulation 34(g)(i), include:

a. A First Nations representative group (i.e. GMTOAC), through its legal representative (i.e. EJA), requested that the titleholder enter into the group's Consultation and Negotiation Protocol and undertake a Cultural Values Assessment (CVA) involving the group's Traditional Owner members. They asserted that these steps were necessary for consultation in preparation of the EP to be considered 'complete' and for impacts and risks to be managed to ALARP and an acceptable level. These requests were unmet by the titleholder, however, there are reasons for this outlined within the titleholder's report on consultations that appear overall to be reasonable and justified (refer to Annex 2 of Appendix C1; Appendix C2). Additionally:

    i. In regard to the request for the titleholder to enter the group's Consultation and Negotiation Protocol, it was not considered to be unreasonable that the titleholder did not consult in this matter. This is because the Environment Regulations do not require titleholders to enter into agreements with relevant persons for their offshore petroleum activities to proceed, and the efforts employed by the titleholder to consult were still reasonably aligned with the regulatory requirements under regulation 25 for my reasons given at [104]-[106].

    ii. In regard to the request for the titleholder to undertake the CVA, it was not considered to be unreasonable that the titleholder did not complete this in preparation of the EP. This is because the expectation was raised late in the consultation process (i.e. >2 years after an initial consultation invite was sent to the group), the titleholder had already

employed other reasonable efforts to inform it's understanding of the environment that may be affected by the activity without undertaking the CVA (see the findings at [5]), there appeared to be a misalignment in views on the purpose of the CVA and no clear commitment had been made by the titleholder to complete the CVA in preparation of the EP. In addition, the titleholder's management of change process would adequately address any new information arising from the CVA if it were undertaken after EP acceptance.

b. Certain First Nations representative groups raised with the titleholder that consultation with them does not constitute consultation with their Traditional Owner members (i.e. GMTOAC and Easten Maar Aboriginal Corporation). However, it was found that the titleholder's process for identifying and consulting relevant persons extended beyond representative groups and provided reasonable opportunities for Traditional Owner individuals to participate. For example, Traditional Owner individuals had genuine opportunities to participate through the titleholder's engagement efforts with established First Nations representative groups inshore from the Environmental Planning Area, consistent with their expressed preferences where this was reasonably practicable. In some cases, this included group-facilitated meetings with Traditional Owner members where interest was shown. Additional opportunities arose through broader public awareness mechanisms that supported self-identification across a range of reasonable media forums. It was also considered that full participation from every individual within a group is not required where reasonable efforts are made to identify and consult relevant persons, which was found to be the case for the reasons outlined herein.

c. There were numerous relevant persons who raised concerns with the titleholder about the consultation process not meeting their expectations (e.g. GMTOAC, Australian Marine Conservation Society (AMCS), South East Trawl Fishing Association, Southern Shark Industry Alliance, Atlantis Fisheries Consulting Group and FISHERMEN DIRECT PTY. LTD.). In some cases, this included views that the process lacked integrity or was not clear, transparent, or accessible. These assertions were often linked to broader dissatisfaction with the responses provided by the titleholder, or to a belief that the titleholder had not adequately demonstrated that it had met the legislative requirements for NOPSEMA to accept the EP. In considering this, it was noted that the titleholder's conduct during consultation was reasonably aligned with the regulatory requirements for consultation under regulation 25 for the reasons outlined at [104]-[106]. It was additionally considered that there is no requirement for relevant persons to be satisfied with a titleholder's response, for a titleholder to fully adopt the feedback provided, nor for a titleholder to have to convince relevant persons of the merits of a proposed activity. A difference in views does not mean that consultation was inconsistent with the requirements under regulation 25.

d. Some relevant persons noted that they required independent technical advice to assess how the activity may affect their functions, interests, or activities (e.g. GMTOAC and AMCS). Although this desired advice was not always obtained, the consultation records show that the titleholder made reasonable efforts to understand and address their areas of interest or concern through targeted engagement and the provision of further information where practicable. It was also considered that, despite the absence of independent technical advice, the Environment Regulations do not define what constitutes 'sufficient information' and other evidence demonstrates that these relevant persons were still provided with information that was sufficient to allow an informed assessment of the potential impacts of the activity on their functions, interests or activities to be made (also see the findings at [104]).

110. The titleholder's report on consultations with relevant persons (Appendix C2) clearly identifies when objections or claims were raised regarding the potential adverse impacts of the activity. The report also provides corresponding assessment of the merit and response statements that generally appear as reasonable and supported, with the exception of instances reflected in [114]. In addition, it identifies instances where relevant persons provided or requested information or raised other concerns and

assertions. Further detail is included to confirm how the titleholder addressed this feedback, including outlining what changes were made to the EP and where those changes appear, where applicable.

111. When relevant persons provided information during consultation that was material to the environmental management of the activity, it generally appears as though the titleholder took reasonable action to incorporate that information into the EP where appropriate and necessary to ensure impacts and risks to the environment are reduced to ALARP and acceptable levels, with the exception of instances reflected in [114]. For example, all impact and risk assessments clearly outline how consultation input informed their preparation (refer to Section 7 of Appendices D-E) and include a summary of the specific objections and claims considered relevant to those assessments (refer to Annex 2 of Appendices D-E).

112. Further to the above, there are numerous instances where the titleholder undertook more detailed assessments of key environmental values and sensitivities or revised its approach to managing the activity following consultation with relevant persons, including adopting additional environmental management commitments. Examples include, but are not limited to:

a. Undertaking more detailed assessments on the potential effects of the activity on marine species and environmental aspects identified as culturally important or of concern to relevant persons within Appendix F3.

b. Applying activity limitations in response to input from relevant persons, as summarised in Section 4.4 (Table 6) and incorporated in Appendix A2.

c. Adopting additional control measures in response to input from relevant persons, as summarised in Section 4.4 (Table 6) and incorporated in Appendix G1.

d. Integrating further notification, reporting and other implementation strategy commitments in response to input from relevant persons, as summarised in Section 4.4 (Table 6) and incorporated in Appendix B3.

113. The titleholder's report on consultations with relevant persons (Appendix C2) also shows numerous cases where objections, claims or other feedback from relevant persons did not lead to changes to the EP or the inclusion of additional environmental management commitments. Valid reasons in support of the reasonableness of this outcome are generally set out, with the exception of instances reflected in [114]. For example, in some instances the titleholder demonstrated that the measures suggested by relevant persons were either not reasonably practicable or unnecessary for the EP to demonstrate that impacts and risks would be reduced to ALARP and acceptable levels. In other instances, it was confirmed that existing control measures or information within the EP already reasonably addressed the concerns raised.

Reasons not to be reasonably satisfied

114. While there are many positive observations outlined above in support that the titleholder has adopted, or proposes to adopt, appropriate measures in response to its consultations with relevant persons in the preparation of the EP, this was not found to be the case in all instances. Notably, there was an instance where it is not evident that the titleholder's response to a specific request from a relevant person (i.e. SETFIA) was reasonable or supported. The relevant person requested that the activity be managed in a particular way to avoid unacceptable impacts to the Orange Roughy Research Program. However, the titleholder did not fully adopt this request, and the EP lacks sufficient rational and supporting evidence to demonstrate that this decision was appropriate (refer to [56] for the full details).

115. The findings at [109]-[114] do not all support that the requirement of regulation 34(g)(ii) is met (particularly the finding at [114]), being that the EP demonstrates appropriate measures were adopted, or are proposed to be adopted, because of the titleholder's consultations.

Based on the above findings, the assessment team recommends that the decision maker cannot be reasonably satisfied that the EP meets the requirements of regulation 34(g), particularly regulation 34(g)(ii).

Criterion 34(h) – EP complies with the Act and the regulations

Reasons to be reasonably satisfied

In determining whether the EP demonstrates that the requirements of regulation 34(h) are met, the assessment team found that:

116. There is sufficient information to address each of the content requirements of regulations 21-24 of the Environment Regulations with enough clarity, consistency, and detail commensurate to the nature and scale of the activity. This has been demonstrated through the EP and supporting appendices. Additional and more specific findings relating to the titleholder's report on consultation as required by regulation 24(b) are given below [121-123].

117. In addition to those addressed elsewhere in this report, these requirements include an EP summary statement, which has been included in the EP (Section 1.7) as required by regulation 35(2B).

118. The EP demonstrates through consultation with relevant persons (Section 4 and Appendix C) that the proposed petroleum activity will not interfere with navigation, fishing, conservation of resources of the sea and seabed, other offshore electricity infrastructure and petroleum activities, and the enjoyment of native title rights and interests (within the meaning of the Native Title Act 1993) to a greater extent than is necessary for the reasonable exercise of the titleholder's rights and obligations, in accordance with the requirements of Section 280 and Section 460 of the OPGGS Act.

119. The EP acknowledges and commits to complying with the requirements of the Environment Regulations that are relevant to the petroleum activity, including the requirements under regulation 47 and 54 to notify NOPSEMA of reportable incidents and the start and end of the petroleum activity (Appendix B3, Table B3-4 and B3-5).

Section 572 of the OPGGS Act

120. The EP commits to full removal of all equipment related to deployment of the acoustic detection buoys (EPS Appendix G1 page 5).

Titleholder's report on the consultations required by regulation 24(b)

121. In accordance with regulation 24(b), a report on all consultations between the titleholder and any relevant person for regulation 25, is to be included in the EP.

a. The EP does contain a report on all consultations under regulation 25 of any relevant person by the titleholder that is in line with regulation 24(b). This is because:

b. there is a summary of each response made by a relevant person as required by regulation 24(b)(i). This is in Appendix C2.

c. there is an assessment of the merits of any objection or claim about the adverse impact of each activity to which the EP relates as required by regulation 24(b)(ii). This is in Appendix C2.

d. there is a statement of the titleholder's response, or proposed response, if any, to each objection or claim as required by regulation 24(b)(iii). This is in Appendix C2.

e. there is a copy of the full text of any response by a relevant person as required by regulation 24(b)(iv). This is in the sensitive information Part of the EP (a discrete Part that will not be subject to publication).

122. The report on consultation contained within the EP is considered to be accurate and fairly represented, based on a review of the full text records of the consultation between the titleholder and relevant persons, as presented within the sensitive information Part of the EP.

123. Lastly, no observations were made during the assessment of 'sensitive information' meeting the definition provided under regulation 5 or the full text of any response by a relevant person being contained in the EP. In accordance with regulation 26(8), information of such is to be contained in the sensitive information Part of the EP only, and not anywhere else in the EP.

Reasons not to be reasonably satisfied.

124. The EP does not comply with the requirements of the OPGGS Act and regulations. The EP is not consistent with the 'Objects' of the Environment Regulations because (as described throughout the report above) it does not demonstrate environmental impacts and risks from the activity will be of an acceptable level.

Based on the above findings, the assessment team recommends that the decision maker cannot be reasonably satisfied that the EP meets the requirements of regulation 34(h).

Other considerations

Public comments

125. On 25 January 2024, the EP was published on the NOPSEMA website for public comment, in accordance with regulation 28(1). The period for public comment closed on 26 February 2024, with 14827 submissions received during this period.

126. Comments received during the public comment period were processed in accordance with NOPSEMA's EP assessment procedure.

a. The titleholder resubmitted the modified EP on 10 June 2024, along with a report on public comment A1093447, where the titleholder responded in general terms to the comments. The report identifies where modifications have been made in the EP in response to the comments.

b. The assessment team took into consideration the comments received during the public comment period when determining whether the EP met the requirements of regulation 34 (see findings above).

c. The assessment team did not consider other comments from members of the public relating to the EP that were received outside of the public comment period, in accordance with regulation 30(5)(b).

External correspondence received

127. The assessment team considered information received directly from relevant persons during the course of the EP assessment relating to the activity and the EP assessment. The external correspondence that was received from relevant persons is captured within a tracking register (A1059972).

a. The correspondence was considered in accordance with NOPSEMA's external correspondence process and where it was found that there was a concern or issue raised in correspondence regarding the EP, relevant considerations were taken into account by the assessment team.

b. For procedural fairness, information that was provided to NOPSEMA by relevant persons, where NOPSEMA could not see the information had also been provided to the titleholder, was subsequently provided by NOPSEMA to the titleholder for their consideration and incorporation into the EP where appropriate.

Other relevant documents

128. Advice received from the Australian Antarctic Division (AAD) in relation to underwater acoustic monitoring. This advice was based on information provided to the agency by NOPSEMA in the form of extracts from the EP and was considered by the assessor when conducting the underwater noise topic assessment. The Advice was relevant to issues raised by NOPSEMA in opportunities to modify and resubmit, however, revisions made to the EP prior to the final EP submission meant that the NOPSEMA did not consider the Advice relevant during the final round of assessment or in forming a final decision on whether the EP met the EP acceptance criteria under regulation 34.

129. At the time of EP submission and over the course of the assessment, a Fisheries Research Development Corporation (FRDC) study that was cited on multiple times by relevant persons during consultation remained in an unpublished state. It had relevance to marine seismic survey impacts to commercial catch rates. As of 27 January, 2026 the study was accepted for publication Seismic acquisition causes substantial decrease in catch rates of commercially-important fish - ScienceDirect. The study's publication date has coincided with NOPSEMA's assessment period for this EP and, as such, the titleholder has not been provided an opportunity to update and/or modify relevant sections of the EP. The assessment team does not consider that the EPs consideration of the study's findings would materially alter the assessment outcome.

Action for decision maker

In considering this assessment report and the assessment team's recommendation, along with the available information, please record your decision in RMS on the decision page Assessment - 7701.

Attachment A: Key documents considered during the assessment

The assessment team had regard to the following key documents during the assessment:

1. the EP, comprising:
    a. Regia MSS Environment Plan (Revision 5, 9 December 2025) and included appendices;
    b. Sensitive information reports containing full text consultation records between the titleholder and relevant persons;
    c. Material referenced in the EP that was important evidence for making the case that impacts and risks will be managed to ALARP and acceptable levels.
2. NOPSEMA EP assessment policies, guidelines, and guidance (published on the NOPSEMA website);
3. NOPSEMA Acoustic impact evaluation and management Information Paper (N-04750-IP1765), including supporting scientific and technical reports cited within the Information Paper.
4. NOPSEMA Environment plan assessment standard operating procedure (N-04750-SOP1369);
5. Relevant policies, plans of management, recovery plans, conservation advice, and other guidance for matters protected under the EPBC Act, including (but not limited to):
    a. Department of the Environment, Water, Heritage and the Arts, Significant Impact Guidelines 1.1 – Matters of National Environmental Significance, EPBC Act Policy Statement (2013);
    b. Department of the Environment and Energy, National Light Pollution Guidelines for Wildlife Including Marine Turtles, Seabirds and Migratory Shorebirds (2023);
    c. Commonwealth of Australia, National Recovery Plan for the Southern Right Whale Eubalaena australis (2024);
    d. Commonwealth of Australia, Conservation Management Plan for the Blue Whale 2015–2025 (2015);
    e. Department of Agriculture, Water and the Environment, Guidance on key terms within the Blue Whale Conservation Management Plan (2021);
    f. Commonwealth of Australia, Recovery Plan for Marine Turtles in Australia 2017–2027 (2017);
    g. Commonwealth of Australia, Threat Abatement Plan for the impacts of marine debris on the vertebrate wildlife of Australia's coasts and oceans (2018);
    h. Commonwealth of Australia, National Recovery Plan for Albatrosses and Petrels (2022);
    i. Commonwealth of Australia, National Recovery Plan for the Orange-bellied Parrot (2016);
    j. Commonwealth of Australia, Wildlife Conservation Plan for Seabirds (2020);
    k. Commonwealth of Australia, Wildlife Conservation Plan for Migratory Shorebirds (2015);
    l. Conservation Advice Balaenoptera physalus Fin Whale (2015);
    m. Conservation Advice Balaenoptera borealis Sei Whale (2015);
    n. Commonwealth of Australia, South-east marine region profile (2015);
    o. Director of National Parks, South-east Marine Parks Network Management Plan (2025);
    p. Commonwealth of Australia, National Strategy for Reducing Vessel Strike on Cetaceans and other Marine Megafauna (2017);
    q. EPBC Act Policy Statement 2.1 – Interaction between offshore seismic activities and whales (2008);

r. EPBC Regulations 2000 - Part 8, Interacting with Cetaceans and Whale Watching;

6. Relevant published, peer-reviewed scientific literature and technical guidance, including the literature cited in the EP, including (but not limited to):

   a. National Marine Fisheries Service (2024). Update to: Technical Guidance for Assessing the Effects of Anthropogenic Sound on Marine Mammal Hearing (Version 3.0): Underwater and In-Air Criteria for Onset of Auditory Injury and Temporary Threshold Shifts. U.S. Dept. of Commer., NOAA. NOAA Technical Memorandum NMFS-OPR-71, 182 p.

   b. Accomando et al. (2025) U.S. Navy Phase 4 Report on Criteria and Thresholds for U.S. Navy Acoustic and Explosive Effects Analysis (Revision 2025.1), and references therein.

7. Published consultation guidance by relevant persons, including the Gunditjmara Consultation and Negotiation Protocol

8. Relevant legislative requirements that apply to the activity and are relevant to the environmental management of the activity

9. Relevant Federal Court authority and issued judgements