Titleholder's report on Public Comment: Offshore Gas Victoria Drilling Program

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1. Introduction

Beach Energy (Operations) Limited proposes to conduct a Drilling Program in the Commonwealth waters of the Otway and Bass basins.

The program outlined in the Offshore Gas Victoria Drilling Program Environment Plan (**the EP**) involves drilling up to six wells in the Otway Basin and up to five wells in the Bass Basin, including exploration, appraisal, and infield wells. Additionally, Beach plans to plug, abandon, and remove infrastructure from five legacy suspended subsea exploration wells.

The Operational Areas, where activities would occur, have a 3 km radius around the well sites. The 3 km radius encompasses both the outer extent of mooring equipment on the seabed, and the 500 m petroleum safety zone (PSZ). Timings for activities range from 30 to 40 days for drilling, 15 to 20 days for completion, and 15 to 20 days for plug and abandonment per well.

The program would run 24 hours per day, 7 days per week. The above timings equate to approximately 560 days of activity for the full Drilling Program and would be undertaken within the period of 1 November 2024 to the 31 December 2028.

The activities would be carried out using a single moored semi-submersible drill rig with support from up to three vessels.

The Titleholder's Report on Public Comment relates to the EP and is a requirement following the completion of the public comment process.

Beach submitted the EP to NOPSEMA for completeness check and it was accepted as complete on 27 February 2024. NOPSEMA then published the EP on its website and a public comment period of 30-days commenced, running from 28 February to 28 March 2024.

As outlined in NOPSEMA's Policy (Environment Plan Assessment, section 5), Beach promoted the public comment process by publishing a public notice in eight different newspapers, emailing the project stakeholder list, and prominently featuring information about the public comment period and links to NOPSEMA's website on Engage Beach, Beach's online consultation hub.

Six public submissions were received from NOPSEMA. Beach acknowledges all those who took time to compile and submit their written comments regarding the EP.

The following report details the themes, matters and claims raised through the public comment process. Beach has identified the sections of the EP that correspond to the matters raised and where the matters have been accounted for. Any changes to the EP have been marked using underline.

2. Titleholder contact details

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3. Titleholder's Report on Public Comments

Comments Received	Titleholder Response
3.1 ENVIRONMENTAL VALUES, SENSITIVITIES AND CONTROLS	
3.1.1 Matter: Environment Description Claim: Ensure all environmental features are included in the development of the Environmental Plan.	Beach Energy (Operations) Limited (Beach) has operated in the Offshore Otway and Bass basins since 2018, in accordance with multiple Environment Plans that have complied with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations (Regulations). Beach is satisfied that it has met the requirements in Regulations (Sections 21(2) and 21(3)) and the National Offshore Petroleum Safety and Environmental Management Authority's Guidance Note, to describe the existing environment that may be affected by the activities in the Offshore Gas Victoria Drilling Program Environment Plan (EP). Chapter 6 of the EP comprehensively describes the existing environment including ecological, socio-economic, and cultural features of the environment. The assessment includes conservation values and sensitivities for protected areas, heritage areas and key ecological features identified within the Operational and Planning Areas using Environment Protection and Biodiversity Conservation Protected Matters Search Tool Reports. Beach has assessed the comment made regarding environmental features. No change has been made to the EP in response to this comment.
3.1.2 Matter: Marine Fauna Claim: Commit to reporting all vessel strikes and collisions on marine life, including but not limited to sharks, whales, dolphins etc. Claim: Commit that any reported signs of injury or death to marine life is made publicly available. Claim: Recognise that prioritising profit over dolphin welfare in decision making is an unacceptable level of risk mitigation. The EP does not mention the Burrunan Dolphins that make the Gippsland Lakes their home. Burrunan Dolphins are a particularly important species, in	Beach Energy (Operations) Limited (Beach) acknowledges the Offshore Gas Victoria (OGV) Drilling Program may have potential environmental impacts and risks on various marine fauna. Chapter 7 of the EP provides a comprehensive assessment of potential environmental impacts and risks associated with the drilling program and the control measures that will be employed to reduce potential impacts to as low as reasonably practicable (ALARP) and acceptable levels. In the assessment, the greatest risk to dolphin behaviour was identified to be from underwater noise as this has the potential to interfere with their foraging. Appendix G (Acoustic Monitoring Reports) assesses acoustic noise and provides an assessment against international noise criteria. Chapter 7 includes detailed assessment of the possible disruption to marine fauna from light (see Section 7.2), noise (see Section 7.4), physical presence (see Section 7.5), seabed disturbance (see Section 7.6) and other possible sources.

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such that they are categorised as Critically Endangered / Threatened according to the Victoria's Flora and Fauna Guarantee Act, and it is our opinion that it is a great oversight of Beach to not consider this species in their EP. Claim: The marine life of our southeast oceans is unique and under increasing threat from the expansion of the offshore oil and gas industry… Exploration and mining have been implicated in the destruction of baseline food sources, disrupting feeding and migration patterns from southern rock lobsters through to whales, penguins, seals, and coastal birds. Claim: While I recognise that we need this project to go ahead to help Victorians like me stay warm in the winter, I am of course worried about the effect of the drilling on marine life as the noise of drilling would be very high, but I am glad that no seismic activity is required.	Beach acknowledges the importance of having independent and trained Marine Mammal Observers (MMOs) or Marine Fauna Observers (MFO) involved in the drilling program. Details about the MMOs are provided in Appendix H (Whale Management Procedure) of the EP as well as relevant sections of the EP that describe the roles and responsibilities (see Section 8.2.1) and competencies and training (see Section 8.2.2) for personnel to ensure the Whale Management Procedure is properly implemented. The monitoring and reporting requirements for MMO under the Whale Management Procedure are important control measures that are designed to comply with various government reporting for vessel strikes or injury of cetaceans (see Table 8-3 of the EP). Beach complies with its requirement to report vessel strikes and collisions on marine life to government. This information is used by the Commonwealth Department of Climate Change, Energy, the Environment and Water to form general statistics. Several species of dolphins are identified in the Environment Plan (EP) (see Section 6.4 and Table 6-21). The Burrunan Dolphin is considered a species of Bottlenose Dolphin for the purpose of this EP. This is consistent with official taxonomy classifications. Beach agrees with the comment that natural gas has an important role to play in providing affordable, reliable, and secure energy to the community. Beach has reviewed all comments relating to marine fauna and is confident the concerns raised have been considered in the EP, in accordance with the Regulations. No change has been made in the EP in response to these comments.
3.1.3 Matter: Research Cited Claim: What studies is Beach Energy using to demonstrate that there will be no harm to the normal sea flora and fauna around the drilling sites from well cuttings mixed with operational fluids from the drilling equipment? What research will continue during the drilling and decommissioning phases? If so for how long and will the findings be located in the public domain?	Beach Energy (Operations) Limited (Beach) has assessed the potential impacts of drill cuttings and other discharges on marine fauna (see Section 7.8 (Planned Marine Discharges) of the Offshore Gas Victoria (OGV) Drilling Program Environment Plan (EP). Impacts from planned drilling and plug & abandonment discharges are well understood and uncertainty is minimal. Beach has referenced 18 scientific studies and research in Section 7.8.6 (Predicted Level of Impact - Drill cuttings and fluids) of the EP. These peer reviewed studies are also listed in Chapter 9 (References) of the EP to include authors, date of publication, title and publication or source. Given the peer reviewed research cited in this EP, and the environment descriptions, impacts and risk assessment and development of control measures undertaken in the preparation of this EP, Beach is satisfied that there is no requirement to undertake further studies regarding flora and fauna around the drilling sites. In accordance with Beach's Implementation Strategy (see Section 8.3) Beach may determine that a review of the EP is necessary as a consequence of new research, studies, or protected species in relation to the environment and impacts and risks.

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	Beach is confident the impacts and risks of the planned activities have been considered in the EP in accordance with the Regulations. No change or additional data has been made in the EP in response to this comment.
3.1.4 Matter: Research Insufficient Claim: There is a common theme that this submission has identified regarding the identification and evaluation of environmental impacts and risks as discussed in the EP, which is that in many areas there is simply not enough information available. This lack of information has the flow on effect that risk management and mitigation plans cannot be adequately designed, as they are being developed using incomplete information. Claim: Establish an independent panel to review the quality of studies to date and to create a comprehensive list of where the gaps in current knowledge exist. Claim: Conduct comparative research into all studies on the impacts of drilling to determine the range to which impacts have been observed. Noting the limitations of many of these studies, apply the precautionary principle to determine a correction factor which will create a safety buffer zone around that distance. Claim: Conduct thorough observational studies at varied times of day and across all seasons to determine all species found in this impact area. A minimum of a full 12 months of data is especially important to ensure data on migratory species is captured. Claim: Conduct vessel based stationary and transects surveys using distance sampling protocols to accurately assess at sea densities at and within 20km of platforms.	Beach Energy (Operations) Limited (Beach) acknowledges comments regarding research, including recommendations that Beach undertaken further research and studies, to inform the Offshore Gas Victoria (OGV) Drilling Program Environment Plan (EP). Chapter 7 of the EP provides a comprehensive assessment of potential environmental impacts and risks associated with the drilling program and the control measures that will be employed to reduce potential impacts to low as reasonably practicable (ALARP) and acceptable levels. Beach has reviewed the EP in response to claims about Little Penguins, turtles, dolphins and orange bellied parrots and is satisfied that these species are adequately covered in the EP with respect to the environment and potential impacts and risks. Beach relies on published peer-reviewed scientific literature to inform our understanding of the existing environment and potential impact and risk assessment. These peer reviewed studies and resources are referenced throughout the EP and listed in Chapter 9 (References) of the EP. Beach relies on scientific studies and research in preparation of the EP to assess marine fauna (including marine life the subject of various claims recommending new and comprehensive studies), marine flora, seabirds and whales. Beach is not planning to undertake its own scientific studies and research to supplement the EP. Beach also relies on government resources, for example the Department of Climate Change, Energy, the Environment and Water's Protected Matter Search Tool and the National Conservation Values Atlas for information on the environmental values and sensitivities. Government resources also include catalogues of relevant environment management plans, conservation management plans, recovery plans and conservation advice and Biologically Important Areas. Consultation with relevant persons in accordance with the Regulations is a further method to inform the development of the EP in relation to describing the existing environment and environmental sensitivities and values and developing control measures. The public comment period provides another potential source for additional information. The National Offshore Petroleum Safety and Environment Management Authority's (NOPSEMA) website advises that if

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Claim: Conduct research to confirm that localised change in ambient light won't affect Shearwater foraging behaviours or cause injury/death. Claim: Request comprehensive studies into the effects of drilling on Little Penguins and their prey species. Claim: Request comprehensive studies into the effects of drilling on turtles and their prey species. Claim: Request studies into the effects of drilling on dolphin behaviour, health and population numbers. Claim: Request studies into the effects of underwater noise pollution on dolphin behaviour, health and population numbers. Claim: Further research potential migration routes of the orange-bellied parrot from King Island to mainland Victoria. Claim: Conduct research into the effects of oil spills on tourism in the Great Ocean Road region.	there is new information that NOPSEMA and/or the titleholder should consider, commenters are encouraged to provide supporting documents, such as data or scientific reports, or clearly labelled photographs or maps. Any perceived gaps in knowledge or uncertainty on impacts and risks are considered in the risk assessment methodology described in Section 2.7.2 of the EP. Specifically, Figure 2-2 provides a framework that Beach uses to assess the different levels of uncertainty for impacts and risks. Each assessment of impact and risk in Chapter 7 includes a statement that impacts will be ALARP and assigns a level of uncertainty (Type A, B or C), and the measures to be adopted to minimise the uncertainty through the application of good practice and 'precautionary approach.' NOPSEMA is appointed under the Offshore Petroleum and Greenhouse Gas Storage Act as the independent regulator of environment (health and safety, and well integrity). NOPSEMA will assess the EP to determine that the assessment of the environment and impacts and risks and control measures, demonstrates outcomes that are ALARP and acceptable levels. The establishment of an independent panel to review studies and research is not relevant for inclusion in the EP. Beach is confident that the research undertaken in preparing the EP is sufficient and demonstrated in the EP. No change or additional data has been made in the EP in response to this comment.
3.1.5 Matter: Seabirds Claim: Ensure that where multiple subspecies share the habitat, for example: Sooty Shearwaters and Short tailed Shearwaters, the impacts on both are evaluated as there may be differences in the risks and impacts based on behaviours, habitat and vulnerability status of the different subspecies. Claim: Implement mandatory reporting of dead, injured, or stranded Shearwaters.	Beach Energy (Operations) Limited (Beach) acknowledges concerns around the impact on seabirds from the Offshore Gas Victoria (OGV) Drilling Program. The Environment Plan (EP) provides comprehensive information on species, Environment Protection and Biodiversity Conservation (EPBC) status and, habitat and behaviour within the operational and planning areas. For bird species, including four species of Shearwaters, this information is presented in Table 6-19, Figure 6-37 of the EP. Chapter 7 of the EP assesses the potential impacts and risks from the activity for individual species. Chapter 7 also outlines that monitoring and reporting requirements to demonstrate that the potential impacts are of an acceptable level. The reporting of injury or death to EPBC listed species will be undertaken (see Section 8.3.1). This requirement applies to the reporting of any dead or injured listed species in accordance with the Environmental Performance Outcome number 2 (see Table 7.23). Section 8.3.1 details the reporting procedure for injury or death to EPBC Act listed species.

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Claim: Develop and test technology (radar, acoustic, thermal imaging etc.) for monitoring bird-platform interactions. Claim: Conduct research to identify whether light emissions have an effect on flesh-footed shearwaters and wedge-tailed shearwaters. Claim: Of note sea birds are attracted to the lights on the well platforms and the human food that can be scavenged thus exposing them to possible burns from flaring. Components of accidental oil spills and related chemicals not only affect the birds but break down into components that accumulate through the food chain, poisoning whales, dolphins, turtles, birds, fish and shellfish. Claim: There are significant concerns that drilling will cause the disruption of essential behaviours for Little Penguin survival such as breeding, foraging, displacement from crucial habitat and physical injury including temporary or permanent hearing loss. Claim: The impact of oil spills on Little Penguins is of significant concern and needs to be addressed.	Chapter 6 describes the multiple species of Shearwaters and distribution within the description of the existing environment. Three species of Shearwaters are identified to have biologically important behaviours within the defined light environment that may be affected (EMBA) (see Table 7-2 and Figure 7-3). The Biologically Important Area (BIA) for Little Penguins is shown Figure 6-39. The information has been drawn from comprehensive studies undertaken for Australian Marine Parks (see Section 6.2.2). A summary of these studies is provided in Section 6.4.7.4, along with references. Chapter 7 also considers potential impacts of all activities associated with the EP on seabirds including Little Penguins. Table 7-2 of the EP details the migratory shorebirds and seabirds that may perform biologically important behaviours within the described light environment that may be affected (EMBA). These were identified from the light EMBA Protected Matters Search Tool (PMST) Report (Appendix E. 3), and BIAs were identified from the National Conservation Values Atlas. Section 7.2 of the EP describes the impacts to seabirds that may occur from the light emissions associated with the drill rig. Vessel lighting and flaring have the potential to occur within 20 km and 50 km, respectively, of the source. Routine lighting is associated with the vessel and drill rig operations. This includes deck lighting, which is essential for navigation and human safety. Flaring has been included as a contingency. If required, this will only be undertaken at one well (Yolla 7) where light emissions will occur for a maximum of 48 hours. Section 7.2 also demonstrates sufficient justification that there will be Minor (1) residual consequences associated, with no long-term, serious, or irreversible impacts to seabirds. As detailed in the EP, the assessment considers Control Measures, including the development of a Light Management Plan, and the minimisation of flaring. The impact of flaring has been assessed as part of the impact of light emissions on marine fauna (see Section 7.2). Should flaring be carried out, the following Control Measures will be implemented: • Control Measure 10 – Well Testing Program – Minimise Flaring: Flaring will be limited to a maximum of 48 hours for one well (Yolla 7), if well testing is carried out (contingent activity). Minimise Flaring at Night: Initial flow will be conducted in good visibility conditions as per Beach's well management system (WECS). A check will be undertaken to ensure no birds are on or near to the flare boom prior to commencing flaring. • Control Measure 12 – Light Management Plan will be implemented to minimise risks of light emissions and injury or death to birds. Beach, in consultation with suitably qualified specialists, will develop and implement a Seabird Light Management Plan (Control Measure 7 of the EP). The Light Management Plan will assist in managing environmental impacts and risks of light emissions to as low as reasonably practicable (ALARP) in compliance

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	with the National Light Pollution Guidelines for Wildlife (CoA 2023). Once safety navigational lighting requirements are met (as per vessel class), the Light Management Plan will detail additional mitigations to ensure artificial lighting is reduced to minimum levels based on the information in the Seabird Light Mitigation Toolbox (CoA 2023). The Light Management Plan will be completed prior to the beginning of the drilling program and will consider all bird species in the environment. Beach has assessed the comments made regarding seabirds and is confident the matters raised are considered in the EP. No changes have been made to the EP in response to these comments.
3.1.6 Matter: Whales Claim: I hope that enough studies have been done on what the impact of drilling for over a year will have on whale migration and that surveillance will be carried on during this process to keep studying the impact it has. Claim: Improve day-time aerial spotting of whales so that ships are warned of the whales' location and apparent path. Thus the observers on the ships can better focus their whale-spotting efforts. Claim: If whales are sighted, all ships in the area should slow down and/or deviate heading to reduce the likelihood and severity of a whale strike	Beach Energy (Operations) Limited (Beach) acknowledges comments regarding whales in relation to the Offshore Gas Victoria (OGV) Drilling Program Environment Plan (EP). Beach has undertaken significant research and compiled over 13,500 hours of observations to determine the presence of whales in the activity area. Beach describes the potential noise impacts from the activity in detail in Section 7.4 of the EP. This describes all the potential noise sources that could be generated during the drilling activity. Beach engaged a noise expert in 2021 (JASCO) to deploy acoustic (noise) monitoring buoys on the seabed during its previous drilling campaign (3 February 2021 to 3 April 2021). These buoys monitored noise generated from all activities associated with drilling a well. The results from this monitoring were incorporated in sophisticated acoustic models to determine the potential impact on whales (cetaceans). The results from this modelling are shown in Table 7.5 of the EP. As described in Section 7.4 of the EP, impacts to whales, which may occur from continuous noise emissions associated with the drilling program have the potential to occur within a maximum of 19.6 km during resupply (maximum 3 hours per day) and a maximum of 2.21 km during drilling operations. Section 7.4.8.2 of the EP describes the potential for marine mammal species to experience injury or mortality through Permanent Threshold Shift (PTS) and Temporary Threshold Shift (TTS) or express a behaviour response because of sound emissions. The PTS and TTS 24-hour criteria are only relevant to those receptors that are likely to be present in the area of sonification for a period of 24 hours. Sound sensitive marine mammal species and behaviours, which have the potential to occur within the relevant environment that may be affected (EMBA) were identified through a Protected Matters Search Tool (PMST) and Biologically Important Area (BIAs) were identified from the National Conservation Values Atlas. Section 7.4.8.2 of the EP further includes an impact assessment specific to each species published sound exposure criteria thresholds.

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	The largest impact was from the movement of vessels. The propellers from the vessels generated significantly more noise than drilling activities. Based on these findings Beach developed a Whale Management Procedure. This procedure requires independent observers on the vessels. They will liaise with the Vessel Captain to avoid whales and stop any noise generating activity as soon as practical to ensure that whales are not disturbed. Beach's Whale Management Procedure can be found in Appendix H. The Plan was developed using previous experience in the area and independent experts (Blue Whale Study) to ensure that it follows best practice. Beach considers that Section 7.4 of the EP shows sufficient justification that there will be Moderate (2) residual consequences with no associated population level impacts and no potential to result in serious or irreversible environmental damage. As detailed in the EP, the assessment considers Control Measures, including the development of a Whale Management Procedure. This Control Measure includes specific measures to minimise anthropogenic noise threats to relevant species. The Procedure incorporates the implementation of safe operating distances between vessels and whales, pre-activity surveys for specific activities, night-time and low visibility controls and establishment of safe points for operational activities in accordance with the Safety Case and Well Integrity requirements. Beach acknowledges the importance of having independent and trained Marine Mammal Observers (MMOs) or Marine Fauna Observers (MFOs) involved in the drilling program. Details about the MMOs are provided in Appendix H (Whale Management Procedure) of the EP. Relevant sections of the EP describe the roles and responsibilities (see Section 8.2.1) and competencies and training (see Section 8.2.2) for personnel to ensure the Whale Management Procedure is properly implemented. The monitoring and reporting requirements for MMO under the Whale Management Procedure are important and are designed to comply with various government reporting for vessel strikes or injury of cetaceans (see Table 8-3 of the EP). Section 7.4 of the EP also includes commentary on aerial observations. Aerial observations were undertaken during previous campaigns and were deemed to be an ineffective control measure. This was due to inclement weather impacting the number of observations that could be undertaken. As described in Appendix H, experienced MFO will be on each vessel during the campaign. Aerial observations will be undertaken to augment these observations. Beach has assessed all comments regarding whales and is confident the concerns raised have been adequately managed in the EP. No change to the EP has been made in response to these comments.

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3.2 ENVIRONMENTAL RISK, IMPACTS AND CONTROLS	
3.2.1 Matter: Chemicals and Waste Claim: Will the water-based drill fluids (WBDF) be free from arsenic, mercury and /or lead? Claim: Implement the complete removal of liquid chemical pits from platforms.	Beach Energy (Operations) Limited (Beach) acknowledges comments regarding chemicals and waste in relation to the Offshore Gas Victoria (OGV) Project Drilling Program. The Environment Plan (EP) describes the use of water-based drilling fluids (WBDF) in various sections throughout the document (see Chapter 3 and Chapter 7). Section 7.8 of the EP describes the composition and concentration of metals present in WBDF as well as the impacts, risks, controls, and the demonstration of management to as low as reasonably practicable (ALARP) and acceptable levels. In terms of approving hazardous materials for use offshore, the procedure refers to the Offshore Chemical Notification Scheme (OCNS), which evaluates all production and drilling chemicals in terms of environmental impact. Barite will be present in the WBDF. Barite is registered with Centre for Environment, Fisheries and Aquaculture Science (CEFAS) by multiple vendors. For substances that cannot be run through the Chemical Hazard Assessment and Risks Management model, the OCNS ranks chemicals based on their likely impact to the environment, with Category A having the most impact and Category E having the least impact. Barite is a Category E chemical. There are trace amounts of arsenic and lead in the Barite, which is present in the drilling fluids, but these are not high enough levels to carry a heavy metal warning on the OCNS register. Barite from certain suppliers carries a heavy metal warning. A quality control specification will be imposed if this product is selected. The Barite will also contain mercury and levels will adhere to the quality control specifications detailed in Environmental, Health, and Safety Guidelines for Offshore Oil and Gas Development (IFC, June 5, 2015). A semi-submersible mobile drilling unit (MODU) will be used for offshore drilling and plug & abandonment of wells. The EP describes the handling of drilling fluid and discharges in Section 3.6.1 whereby liquids will be transferred from supply vessels and stored in tanks and pits. The MODU will be equipped with fully enclosed pit rooms for storing drilling liquids thereby mitigating the potential for entrapping seabirds. In addition, Sections 7.8 (Planned Marine Discharges) of the EP details the chemical selection procedure to ensure adherence to regulatory requirements and relevant guidelines as well as Beach's commitment to use the lowest toxicity chemicals possible (Control Measures 9 and 12.). There will be no liquid chemical pits on either of the Thylacine or Yolla A platforms as all the drilling fluids and chemicals will be on the MODU for this EPs drilling program.

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	Beach has reviewed all comments regarding chemicals and waste and is confident that the concerns raised have been adequately managed in the EP. No change to the EP has been made in response to these comments.
3.2.2 Matter: Control Measures Claim: Commit to having independent marine wildlife scientists as part of the drilling program to identify and report any signs of distress, injury or death of marine life that could be as a result of drilling activities. Claim: Consider all of the mitigation strategies already recommended. Claim: Implement observer-based monitoring, by trained, dedicated and arms-length observers. Claim: Investigate how to mitigate the risk of vehicle strike impacting turtles. Claim: Reduce commercial vessel speed within 15km dolphins. Claim: Reduce marine vessel speeds and light, especially at night, to reduce the likelihood and severity of vessels striking whales and negatively impacting other marine animals. Reducing vessel speeds should also reduce underwater noise thereby better enabling whales to communicate via their natural soundings (e.g. clicks). Claim: Request that Beach undertakes a review of how the drilling program could affect the Burrunan Dolphins and what measures they will put in place to protect them.	Beach Energy (Operations) Limited (Beach) acknowledges comments pertaining to control measures to be considered in the Offshore Gas Victoria (OGV) Drilling Program Environment Plan (EP). Vessel strikes on marine fauna (including turtles) may be a potential risk associated with the proposed drilling program. The EP identifies three main turtle species likely to occur within the operational areas (see Appendix E.1). Beach has reviewed and assessed vessel strikes on fauna, including turtles, in Section 7.10 (Fauna Interaction) of the EP. The assessment demonstrated the residual risk to be Low and of an Acceptable Level with a consequence rating of Minor (1) and the occurrence of highly unlikely. The rationale is explained in section 7.10.7 of the EP. Beach has considered vessel speeds in the assessment of impacts and risks to marine fauna, such as dolphins and whales (Section 7.10). The EP highlights that reducing vessel speed has been shown to be an effective measure to reduce vessel strikes for dolphins and whales (see Section 7.10.5). The reduction of vessel speed within the Operational Areas to less than or equal to 10 knots will be employed. Beach has developed a Whale Management Procedure (see Appendix H of the EP) that sets out strategies to comply with the Environment Protection and Conservations Biodiversity (EPBC) Regulations 2000 (Part 8) for interacting with whales and dolphins. Separation distances and the use of Marine Mammal Observers (MMOs) are additional Control Measures for observing marine mammals and are based on minimising impacts of noise on behaviours of marine mammals. In addition, these separation distances for vessels and whales and dolphins must be within observable distances for MMOs. The use of aerial MMOs (and other technologies) was assessed in the EP, however, were not deemed to be effective control (see Section 7.4.9). The Whale Management Procedure (Control Measure 08 in Section 7.10) and vessel speeds within the Operational Areas are considered adequate. Beach acknowledges the importance of having independent and trained MMOs or Marine Fauna Observers (MFOs) involved in the drilling program. Details about the MMOs are provided in Appendix H (Whale Management Procedure) of the EP. Relevant sections of the EP describe the roles and responsibilities (see Section 8.2.1) and competencies and training (see Section 8.2.2) for personnel to ensure the Whale Management Procedure is properly implemented. The monitoring and reporting requirements for MMO under the Whale Management Procedure are important and are designed to comply with various government reporting for vessel strikes or injury of cetaceans (see Table 8-3 of the EP).

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	Beach has undertaken a comprehensive assessment of mitigation strategies in the preparation of the EP, generally referred to in the document as Control Measures. Where substantive matters have been raised during the public consultation process and Beach has assessed those matters to be materially relevant to Beach's prior assessment, Beach has reconsidered those mitigation strategies. Beach acknowledges the drilling program may have potential environmental impacts and risks on various marine fauna, such as dolphins. Several species of dolphins are identified in the EP (see Section 6.4 and Table 6-21). The Burrunan Dolphin is considered a species of Bottlenose Dolphin for the purpose of this EP. This is consistent with the official taxonomy classifications. Chapter 7 of the EP provides a comprehensive assessment of potential environmental impacts and risks associated with the drilling program and the control measures that will be employed to reduce potential impacts to as low as reasonably practicable (ALARP) and acceptable levels. In the assessment, the greatest risk to dolphin behaviour was identified to be from underwater noise as this has the potential to interfere with their foraging. Appendix G (Acoustic Monitoring Reports) assesses acoustic noise and provides an assessment against international noise criteria. Beach is satisfied that the impacts and risks of the planned activities on dolphins are adequately addressed in the EP. Beach has assessed all comments regarding control measures and is confident the EP considers all concerns raised. No change to the EP has been made in response to these comments.
3.2.3 Matter: Cumulative Impacts Claim: We are aware of three companies who wish to undertake seismic blasting surveys and eventually drilling for gas in Commonwealth waters along the Southern Victorian coastlines all within same timeframes... Added to the mix of what is fast becoming an industrialised zone is the proposal for the establishment of large wind farms. Claim: All activities, be they from the petroleum industries or the wind farms will contribute to the exacerbation of ocean sounds, leaving the modelling of anthropogenic noises by individual company's totally incomplete. The call for Marine Spatial planning has never been more apparent.	Beach Energy (Operations) Limited (Beach) acknowledges concerns relating to the cumulative environmental impacts of offshore petroleum activities. The National Offshore Petroleum Safety Environment Management Authority (NOPSEMA) defines cumulative environmental impacts in the context of offshore petroleum activities, as "successive, additive, or synergistic impacts of collectively significant activities or projects with material impacts on the environment that have the potential to accumulate over temporal and spatial scales" (NOPSEMA Environment Plan Decision Making Guideline, N-04750-GL1721 A524696, Dec 2022). Section 7.14 of the OGV Drilling Program Environment Plan (EP) defines Beach's cumulative impact assessment process. It focuses on building on the planned impact assessments considered in the EP by further considering the impacts of the proposed activity on key receptors (or key matters) in conjunction with the impacts from other reasonably foreseeable future projects within the spatial and temporal extent of the drilling program.

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Claim: When all EP plans are viewed as a whole the potential damage to our marine environments becomes even more evident and alarming. The increased ship activity alone will change acoustic environments and impact upon marine lives.	Section 7.14 of the EP adequately addresses the potential for cumulative impacts to arise from the drilling program. Where necessary, additional controls were considered and adopted to minimise the consequence of impacts. This approach is considered effective and appropriate to the predicted cumulative environmental impact. Beach acknowledges that planned activities from energy and renewable projects contribute to noise emissions. Beach has assessed potential impacts of both noise emission (see Section 7.4) in the EP. The drilling program may potentially impact behavioural changes and auditory impairment of marine fauna. The assessment included reports on underwater sound modelling (Appendix G) summarised in Table 7-4 of the EP. The impacts of sound emissions on marine fauna were assessed to be Minor (1) to Moderate (2) consequence, which is not considered as having the potential to result in serious or irreversible environmental damage (section 7.4.10). Beach has assessed the comments made regarding the cumulative environmental impacts of offshore petroleum activities and is confident that they have been considered in the EP. No change has been made to the EP in response to these comments.
3.2.4 Matter: Emissions Claim: The EP needs to be clearer in stating how fugitive emissions will be monitored and moderated over the entire duration of the drilling, extraction and eventually plugging / decommissioning of the well sites. It defies belief that Beach Energy can justify putting more GHGs into our environments, that will lead to untoward climatic events triggering social disruptions and the spread of diseases.	Beach Energy (Operations) Limited (Beach) acknowledges concerns regarding fugitive emission monitoring and moderating throughout the Offshore Gas Victoria (OGV) Drilling Program. The Environment Plan (EP) includes an assessment of atmospheric emissions associated with the activities described in the EP, which include drilling and plug & abandonment activities. The emissions sources include the rig, vessel and helicopter use, flaring (as a contingency for a single well), and fugitive emissions. The greenhouse gas (GHG) emissions for the drilling program are provided in Section 7.3 and Appendix F (Drilling Program GHG Forecast) of the EP. The key points provided in the EP regarding GHG emissions include: • The total GHG emissions are calculated to be approximately 150 ktCO2-e, which is less than ~0.01% and 0.05% of the Australian and Victorian carbon budgets, respectively. • The emissions associated with the drilling program are small when compared to national emissions. They are insignificant on a global scale and not predicted to have determinable impact. • Fuel use and flaring volumes will be recorded, and emissions (from fuel combustion) are reported annually as part of statutory National Greenhouse and Energy Reporting Act (NGER) 2007 reporting and National Pollution Inventory (NPI) reporting (refer section 7.3.7 of EP).

Comments Received	Titleholder Response
	The EP activities do not include the lifecycle of petroleum wells, such as completions, petroleum recovery and decommissioning. Other regulatory (environmental) approvals, commencing with an Offshore Project Proposal (OPP), would consider the whole lifecycle of a project, including a GHG inventory across all project phases. The OPP would include the extraction and use of hydrocarbons, assessment of potential environmental impacts and risks arising from GHG emissions and climate change. OPPs are also subject to a public comment period. Beach is confident that the above matters are considered in the EP. No change or additional data is included in the EP in response to this comment.
3.2.5 Matter: Environment Harm Unspecified Claim: As a corporate citizen Beach Energy has an obligation to reduce negative impacts on our environment. It is no longer appropriate to mine and sell toxic substances. Over the past two decades, extractive industries such as mining have been subject to the demand that they have a 'social licence' to legitimise their operations. Recognition of a social licence to operate, reflects shifting values and attitudes including the perceived mismanagement of the natural environment.	Beach Energy (Operations) Limited (Beach) acknowledges that the proposed Offshore Gas Victoria (OGV) Drilling Program may have potential environmental impacts and risks. In all of Beach's activities, we seek to minimise environmental impacts from the activities set out in the Environment Plan (EP), to as low as reasonably practicable (ALARP), in accordance with the Beach Environment Policy, the Beach Community Engagement Policy, and all applicable environment regulations, which are summarised in Chapter 5 of the EP. Chapter 7 of the EP provides a comprehensive assessment of the potential environmental impacts (planned) and risks (unplanned) associated with the drilling program and the control measures taken to reduce potential impacts to ALARP and acceptable levels. A socio-economic assessment of the existing environment is addressed in identifying relevant stakeholders such as fisheries, marine tourism and First Nations groups (Chapter 4 of the EP) and a description of the existing environments (section 6.5 of the EP).
3.2.6 Matter: Impact Assessment Claim: Recognise that any omissions will require significant re-evaluation of the plan, and a resubmission for approval, and will also trigger a new consultation process as the risks and management strategies will have changed.	Beach Energy (Operations) Limited (Beach) recognises that certain provisions of the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2023 may require a titleholder to resubmit and/or revise an Environment Plan (EP). Following the completion of the public comment period and preparation of the Titleholder's Report, Beach will resubmit the EP for the National Offshore Petroleum Safety and Environmental Management Authority's assessment under Section 30 of the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2023. The Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2023 also provide a process to submit a revised EP for significant modifications, new activity, and new or increased environmental impact

Comments Received	Titleholder Response
	or risk. Section 8.3.6 of the EP outlines the methodology Beach will follow if submission of a revised EP is required. Beach has considered the comment. No change has been made to the EP in response to this comment.
3.2.7 Matter: Light Impacts Claim: Implement shielding and limiting the use of lights. Claim: Chapter 7.2 - Light Emissions, it states that light is not a risk for flesh-footed shearwaters and wedge-tailed shearwaters but provides no evidence to back up this claim. In fact, the EP advises "no conservation advice exists for the species" for both species. Given that no evidence exists, we encourage Beach to conduct studies to ensure that the drilling program would not negatively impact on flesh-footed shearwaters and wedge-tailed shearwaters. Simply identifying and acknowledging that no data exists, doesn't mean they have done enough to mitigate this risk.	Beach Energy (Operations) Limited (Beach) acknowledges that light sources associated with the activities described in the EP may impact some marine fauna. The main source of light emissions is lighting on the drill rig, vessels and contingent flaring operation for one well for a period of 48 hours. The impact of light emissions is addressed in Section 7.2 of the EP along with adopted control measures to achieve as low as reasonably practicable (ALARP) and accepted levels. Light emissions were assessed as having a Minor (1) consequence, which is not considered as having the potential to result in serious or irreversible environmental damage. Beach has assessed various controls to minimise light emissions (see Section 7.2.6) and in consultation with suitably qualified specialists, will develop and implement a Light Management Plan (Control Measure 7 of the EP). The Light Management Plan will assist in managing environmental impacts and risks of light emissions to ALARP in compliance with the National Light Pollution Guidelines for Wildlife (CoA 2023). Once safety navigational lighting requirements are met (as per vessel class), the Light Management Plan will detail additional mitigations to ensure artificial lighting is reduced to minimum levels based on the information in the Seabird Light Mitigation Toolbox (CoA 2023). The Light Management Plan will be completed prior to the beginning of the drilling program and will consider all bird species in the environment, including Shearwaters. Beach has assessed the comments and is confident the impacts of light emissions broadly and specifically on flesh-footed and wedge-tailed shearwaters has been considered in the EP. No change has been made to the EP in response to these comments.
3.2.8 Matter: Noise Impacts Claim: We believe that Beach Energy has underestimated the level and effects of anthropogenic noises during their proposed timeframe for mining and well capping. Claim: Establish regulatory thresholds to assess potential hearing impairment or behavioural responses by diving birds to underwater noise.	Beach Energy acknowledges concerns regarding the noise impacts on marine fauna and seabirds from the Offshore Gas Victoria (OGV) Drilling Program and notes that no seismic surveys or seismic activity is proposed in this EP, therefore the noise from activities associated with the EP is not expected to produce noise levels or results comparable to seismic testing. Section 7.4 describes the impacts to relevant sensitive receptors, which may occur from continuous noise emissions associated with the drilling program. Activity specific underwater sound modelling (see Appendix G of the Environment Plan (EP)) was commissioned to ensure a comprehensive assessment of the extent of potential impacts to sensitive receptors were fully understood. The potential impact to whales from

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Claim: A study conducted by the National Marine Fisheries Service focused on examining the largest known mass stranding of Stejneger's beaked whales, which identified seismic testing as the likely cause. There were heavy dolphin and whale strandings between June and October 2021 off the coast of Shanghai. Although the dolphins were able to be released, the whales were not so fortunate. The whales that were found deceased were studied and they were found to have hearing loss believed to have been caused by transient intense anthropogenic sonar or chronic shipping noise exposures.34 This extensive research shed light on the potential role of seismic testing for oil (involving huge blasts into the sediment of the ocean floor to detect returning sound waves indicating possible oil reserves). The noise produced by drilling may produce a similar result.	continuous noise emissions associated with the drilling program have the potential to occur within a maximum of 19.6 km during resupply (maximum 3 hours per day) and a maximum of 2.21 km during drilling operations. Beach considers that Section 7.4 of the EP shows sufficient justification that, at most, there will be Minor (1) to Moderate (2) residual consequences with no associated population level impacts and no potential to result in serious or irreversible environmental damage. As detailed in the EP, the assessment considers: • The potential impacts to relevant marine fauna, conservation values and sensitivities, socio-economic receptors and cultural values and sensitivities. • The potential extent of impact to specific species, which may be conducting biologically important behaviours within the area of sonification. • The Control Measures, including the development of a Whale Management Procedure, include specific measures to minimise anthropogenic noise threats to relevant species. This includes the implementation of safe operating distances between vessels and whales, pre-activity surveys for specific activities, night-time and low visibility controls, and the establishment of safe points for operational activities in accordance with the Safety Case and Well Integrity requirements. Beach has assessed the comments and is confident that the impacts of underwater noise have been considered in the EP. No change has been made to the EP in response to these comments.
3.2.9 Matter: Oil Spills Claim: According to a study commissioned by the Australian Maritime Safety Authority (AMSA) extrapolating from international oil spill rates and anticipated Australian exposure, the probability of one or more major oil spills occurring in Australian waters, from tankers, could be as much as 48 per cent in the next five years and 93 per cent in the next 20 years. This rather terrifying scenario should be enough to encourage Australia to stop using the oceans to explore for fossil fuels especially in light of their effect on climate change and the fact that most of our gas is exported overseas rather than used for Australian consumers.	Beach Energy (Operations) Limited (Beach) acknowledges concerns and questions relating to leakages and spills throughout the OGV Project activities. The Offshore Gas Victoria (OGV) Drilling Program Environment Plan (EP) assesses the environment impacts and risks of Drilling and Plug & Abandonment of wells and associated vessel operations. Beach is not proposing the use of tankers or cargo ship (which was the focus of the study referenced in the claim) as part of the OGV Drilling Program and a collision with a tanker is not considered a credible hazard. Beach has modelled the worst-case scenario for the unlikely event that there is a loss of containment from a marine diesel spill and a loss of well control (see Appendix I - Oil Spill Modelling Reports). The impacts of an oil spill are assessed in Section 7.12 of the EP. In addition, Beach is required by Australia's offshore energy regulator, the National Offshore Petroleum Safety and Environmental Management Authority to have a spill response (Section 7.13 of the EP) and Offshore Oil Pollution Emergency Plan in the unlikely event that there is an oil spill in drilling program.

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Claim: Another concern relates to leakages from the well site which have been noted during the production and capping stages, both here in Australia and overseas. Claim: While Beach Energy has recorded very few untoward spills where will the nearest capping stack vessel be if there was a condensate spill due to a wellhead blowout	Emergency spill response capability will be maintained in accordance with the primary response plan – Oil Pollution Emergency Plan (co-published with the EP on NOPSEMA's website and control outlined in Control Measure 13). This plan has been accepted by the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA). Beach has also provided information on the response strategies to be implemented in the extremely unlikely event of a spill in Section 7.13 (Spill Response) of the EP. Controls are in place to reduce the likelihood of a Loss of Well Control (LOWC) event to Highly Unlikely (B) and to ensure an efficient response should an event occur, thus reducing the potential environmental impacts. These systems are well practiced and well understood. Any well to be completed will be secured, and integrity confirmed with suspension barriers as per the NOPSEMA accepted Well Operations Management Plan (WOMP). The reduced likelihood of a loss of well containment event (including leakages and spills) is managed through a combination of the rig contractor Safety Case, the Beach well management system (WECS) and the continual implementation of risk management processes and procedures that validate the barriers and mitigations that have been put in place. Section 7.12.6 states that the Well Capping Stack System (CSS) is designed to stem the hydrocarbon flow prior to permanent plugging of the well. Beach undertook a feasibility review of CSS and has confirmed that due to the technical complexity (i.e. the lack of vertical access above the well in a blowout scenario, significant health, safety and environmental risks in deploying the capping stack and any offset installation methods due to no vertical access) of deploying a capping stack in shallow waters with a gas plume environment and harsh metocean conditions, a relief well is the preferred means of primary source control for exploration, appraisal, and development wells. A detailed summary of Beach's assessment of spill response strategies is provided in Table 7-19 under Section 7.13 (Spill Response) of the EP, including the assessment of the CSS undertaken. Trendsetter Engineering, as the manufacturer of capping stacks, was engaged by Beach to review various capping stack options and their feasibility. Based on this assessment, Beach has taken the position that there is little to no value in relying on a system that cannot be feasibly deployed in our operating environment on standby. The focus should be on relief well planning, which is the proposed primary source control method. Although not suitable for the Beach application, as noted above, capping stack equipment is located in Singapore and South Africa. Beach has assessed the comments and is confident that the concerns raised have been considered in the EP. No change or additional data is included in the EP in response to these comments.

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3.2.10 Matter: Risk Assessment Claim: Evaluate the quality of data on risks and impacts on all species within the operational area and determine where there is a need for additional data. Claim: Ensure studies on risks are of research grade quality and have been subjected to peer review. Claim: Re-evaluate the Otway Exploration Drilling Program in light of the risk to endangered species.	Beach Energy (Operations) Limited (Beach) acknowledges the importance of risk assessment throughout the Offshore Gas Victoria (OGV) Drilling Program. In all its EP activities, Beach seeks to minimise environmental impacts to as low as reasonably practicable (ALARP), in accordance with Beach's Environment Policy and Community Engagement Policy, and all applicable environment regulations. This is summarised in Chapter 5 of the Environment Plan (EP). Chapter 6 of the EP provides a comprehensive description of the existing environment including the identification of protected and endangered species (Tables 6-18 to 6-21) within the Operational and Planning Areas. Chapter 7 of the EP provides a comprehensive assessment of potential environmental impacts and risks on marine fauna and associated with the drilling program and the control measures that will be employed to reduce potential impacts to ALARP and acceptable levels. Beach refers to published peer-reviewed scientific literature to inform our understanding of the existing environment and potential impact and risk assessment. These peer reviewed studies and resources are referenced throughout the EP and are listed in Chapter 9 – References of the EP. Beach also refers to government resources, for example the Department of Climate Change, Energy, the Environment and Water's Protected Matter Search Tool (PMST) and the National Conservation Values Atlas (NCVA) for information on the environmental values and sensitivities. Government resources also include catalogues of relevant environment management plans, conservation management plans, recovery plans and conservation advice and Biologically Important Areas (BIAs). Consultation with relevant persons in accordance with the Regulations is further method to inform the development of the EP in relation to the describing existing environment and environmental sensitivities and values, and developing control measures. The public comment period provides another potential source for additional information. The National Offshore Petroleum Safety and Environment Management Authority's (NOPSEMA) website advises that if there is new information that NOPSEMA and/or the titleholder should consider, commenters are encouraged to provide supporting documents, such as data or scientific reports, or clearly labelled photographs or maps. Any perceived gaps in knowledge or uncertainty on impacts and risks are considered in the risk assessment methodology described in Section 2.7.2 of the EP. Specifically, Figure 2-2 provides a framework that Beach uses to assess the different levels of uncertainty for impacts and risks. Each assessment of impact and risk in Chapter 7 of the EP includes a statement that impacts will be ALARP and assigns a level of uncertainty (Type

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	A, B or C), and the measures to be adopted to minimise the uncertainty through the application of good practice and 'precautionary approach.' Beach considers the assessment of potential impacts and risks of the planned activities, using peer reviewed scientific resources, is adequate. No change or additional data is included in the EP in response to this comment.
3.3 SAFETY RISK AND IMPACT	
3.3.1 Matter: Emergency Planning	Beach Energy's (Operations) Limited (Beach) acknowledges comments regarding emergency planning technology assessed for the Offshore Gas Victoria (OGV) Project Drilling Program.
Claim: The statement provided by Beach Energy is an incomplete description of K-BOS methodology for demonstrating availability, which could cause the reader to misunderstand the true functionality of the system and its corresponding reliability	As a comment of general application, Beach Energy's statements in the EP are intended to be high-level descriptions and summaries of technologies and systems utilised, or evaluated for use, in relation to the Project. Those statements are not intended to be exhaustive or detailed technical descriptions or assessments of technology systems or their actual (or potential) application in relation to the project. Detailed assessments are, instead, contained in the project documents and are summarised in the EP. The complete and current description of the technology appropriately sits with the vendors. As a summary of the technology, Beach Energy considers the statement to be correct, and does not propose to amend the EP on this issue. No change or additional data is included in the EP in response to this.
Claim: This statement seeks to imply that K-BOS is a new technology, however, it lacks context. (pg.4)	As a high-level summary rather than a detailed technical assessment or description of the technology, Beach Energy considers the statement to be correct, and does not propose to amend the EP on this issue. This is because: 1. The subject technology has not, to Beach Energy's knowledge, been deployed either onshore or offshore in Australia before; 2. Beach Energy has identified the equipment (for the purposes of use in the Australian oil and gas industry) as a new technology that must undergo a new technology qualification process; 3. In Beach Energy's view, the technology has not undergone testing to the extent required in order for Beach Energy to consider it for use in connection with Beach Energy's project the subject of the EP; and 4. (based on information now provided by the vendor in the responsive comment) it is apparent that the technology has only been deployed in subsea wells internationally limitedly, in each case not in a configuration being considered by Beach Energy for activities the subject of the EP.

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	Although Beach Energy acknowledges the further information now provided by the vendor in the responsive comment regarding the surface BOP applications of the technology, these instances are not considered by Beach Energy to be relevant to application in subsea scenarios, which are the focus of the EP. No change or additional data is included in the EP in response to this.
Claim: This is an incorrect statement. It is true that K-BOS has successfully conducted successful shear and seal testing on traditionally un-shearable tubulars, as mentioned in the Plan, K-BOS has also been successfully shear tested subsea as part of four successful subsea activations in the USGOM, which were witnessed by the Bureau of Safety and Environmental Enforcement ("BSEE"), the rig owner and the leaseholder.	On the information available to Beach Energy at the time the EP was prepared, Beach Energy considers the statement to have been correct. That is, Beach Energy was not aware of the specific conditions under which the technology had been tested, as the vendor had not previously made this information available to Beach Energy. Despite the recent provision by the vendor of information relating to testing of the technology, Beach Energy remains unaware of testing performed under conditions (i.e. temperature, pressure, and duration) that Beach Energy would expect the technology application to encounter in activities that are the subject of the EP. Beach Energy proposes to amend the EP to clarify the requirements of its qualification process for technology applications in this regard (See subsequent response for details on EP amendments).
Claim: This is an incorrect statement. The K-BOS has received independent third-party certification for shearing and sealing (barrier) from DNV which certification is included in Appendix A hereto.	On the information available to Beach Energy at the time the EP was prepared, Beach Energy considers the statement to have been correct. Based on further information recently provided by the vendor in the responsive comment, Beach Energy is now aware that the technology has successfully passed a barrier validation process acceptable to DNV, but Beach Energy: • remains unaware that NOPSEMA has given formal acceptance for use offshore in Australia; and • confirms that the system has not addressed Beach's technical requirements. Beach Energy assessed the technology for its potential use as a 'last line of defence'; in a worst-case scenario, the device must successfully shear any tubular [components], seal the wellbore fluids at the prevailing wellbore conditions including temperature, pressure and fluid type, with seals fully intact for the expected timeframe until a rig is sourced and relief well operations have been conducted to kill the well, allowing re-entry of the initial well and subsequent abandonment of the same. In Beach Energy's assessment, however, the risk profile of the wells in the project the subject of the EP meets ALARP as a result of the application of existing barriers and controls provided within the rig safety case and the Beach Energy's well management system, without the requirement for use of the vendor's technology.

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	Beach has reviewed the relevant sections of the EP and made amendments to summarise the testing, DNV certification and to clarify the requirements of its qualification process for technology applications as follows • Amendments to Table 7-19 under Section 7.13 on Spill Response • Amendments to the tabulated information in Section 7.12.6 on Demonstration that risks will be as low as reasonably practicable (ALARP) "This is a new-to-Beach technology which has not been deployed in Australia and which has been deployed limited times internationally for subsea applications and not in the configuration required by Beach. The system has been tested to shear drill collars, heavy-walled casing, landing string etc. Whilst Beach understands from the supplier that the classification of the technology as a sealing barrier has undergone a validation process acceptable to DnV, Beach is not aware that NOPSEMA has yet given its formal acceptance for the use of this device in Australia, and (in any event) the device has not addressed Beach technical requirements for the project."
Claim: While this part of Beach Energy's statement is true, it is an incomplete assessment. It is well known in the industry that there are certain elements used to construct wells that hydraulic BOPs cannot shear.	This is a high-level statement, rather than a detailed technical description or assessment, Beach Energy considers the statement to be correct, and does not propose to amend the EP on this issue. For the purposes of compliance with the relevant Regulations, Beach Energy is not required to provide full details of the assessment of each technology evaluated. In any event: • The BOP of the rig is described, validated and accepted by NOPSEMA as part of the Transocean Equinox Safety Case to meet ALARP for Formation Hydrocarbons entering the well (Refer to MAE BowTie 1a-1e), which describes the full list of control and mitigation measures implemented during well operations; and • In Beach Energy's assessment, the risk profile of the wells in the project the subject of the EP meets ALARP by the application of existing barriers and controls provided within the rig safety case and the Beach Energy's well management system, without the requirement for use of the supplier's technology. No change or additional data is included in the EP in response to this.
Claim: In table 8.3 of the Plan the environmental criticality is described as "3- serious" or higher. b. In Section 7.12.7 Beach Energy gave a loss of well control event, an environmental criticality rating of "2-moderate".	In Section 7.12.7 of the EP the risk of a hydrocarbon spill was assessed as Low, and the highest consequence assessed as Moderate (2) which is not considered as having the potential to result in serious or irreversible environmental damage. In the context of the Beach Environmental Risk Matrix, moderate to significant environmental damage is defined as any incident of actual or potential consequence category Serious (3) or greater. These risks include:

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	• Loss of well integrity resulting in a condensate spill or otherwise. • Vessel collision resulting in a loss of containment or otherwise. • Introduction of marine pests to the operational area. No change or additional data is included in the EP in response to this claim.
Claim: In addition, the frequency of blowout mentioned referencing North Sea Data12 of 7.2 x 10-5 per producing well is not appropriate for consideration in the environmental plan as the plan is for exploratory and appraisal wells. According to Table 2-1 of the above-cited reference, shows a much higher blowout probability of 1.6x10-4 for drilling of a normal deep exploration wells and a probability of 1.5x10-4 for drilling of appraisal wells.	Beach has reviewed the claim on frequency of blowout and has amendments to the tabulated information in Section 7.12.6 on Demonstration that risks will be as low as reasonably practicable (ALARP), to reflect the appropriate blowout probability per IOGP. The "likelihood of occurrence" of LOWC condensate category remains unchanged which is "Remote".
Claim: The Plan's low risk determination for a loss of well control event is inconsistent with the risk matrix referenced in the Plan.	The Beach risk matrix does not mandate a "5-critical" ranking for all spill events. Under Section 7.12.5, a detailed explanation was provided on each scenario of the condensate LOWC which leads to an assessment of consequence level as stipulated in the EP. No change or additional data is included in the EP in response to this claim.
Claim: Given the benefits of using a K-BOS both in terms of reducing the likelihood of a well control event and the ability of the K-BOS to provide a timely response to an oil spill event as required by the EPBCA and the claims referenced in Section III(A) of this Comment letter, Kinetic suggests that perhaps Beach Energy reconsider their ALARP determination in Section 7.12.7 of the Plan, which rejects implementing the K-BOS as a control.	In Beach's view: • The referenced technology does not reduce the likelihood of a well control event – the reduction in likelihood is managed through a combination of the previously referenced rig contractor Safety Case, the Beach well management system (WECS) and the continual implementation of risk management processes and procedures that validate the barriers and mitigations that have been put in place. • The referenced technology does potentially reduce the environmental and other impacts of a worst case well control event, also known as a blowout, assuming that it successfully operates within the parameters of fluid type, pressure, temperature and duration as described previously. Beach's risk assessment process has appropriately established ALARP for the program described by the EP, taking into account all factors and without the implementation of the subject technology. No change or additional data is included in the EP in response to this claim.

3.4 COMMERCIAL FISHING

3.4.1 Matter: Compensation Process Claim: My charter business just couldn't survive any longer.	Beach Energy (Operations) Limited (Beach) has successfully coexisted with commercial fishers, fishing charter businesses and recreational fishers in the Otway and Bass offshore basins since 2018. All activities set out in the Offshore Gas Drilling Program Environment Plan (EP) are in Commonwealth waters, covering a relatively small area compared to the vast commercial and recreational fishing areas. The activities are not in close proximity to the commonly used boat launch locations for recreational fishing in southwest Victoria (noting the commentor appeared to be based in Port Cambell). In the case where Beach's activities do cause a direct economic loss to a commercial fisher, Beach has previously and would continue to apply it's Fair Ocean Access Compensation Procedure. Beach developed that procedure in consultation with commercial fishing associations representing fisheries that may operate in areas where Beach holds offshore petroleum titles. Information on that procedure is available in Appendix D of the EP. Beach has assessed the comments made regarding compensation. No change has been made to the EP in response to these comments.
3.4.2 Matter: Physical Presence Claim: Beach is constantly in the way of commercial and recreational fishing boats alike. Claim: Now Beach wants to cause ongoing disruption to the area.	Beach Energy (Operations) Limited (Beach) acknowledges concerns regarding the physical presence of the operations outlined in the Offshore Gas Victoria Drilling Program Environment Plan (EP). Beach has successfully coexisted with commercial fishers, fishing charter businesses and recreational fishers in the Otway and Bass offshore basins since 2018. All activities set out in the EP are in Commonwealth waters, covering a relatively small area compared to the vast commercial and recreational fishing areas. The activities are not in close proximity to the commonly used boat launch locations for recreational fishing in South West Victoria. Beach conducted an offshore drilling campaign in the Otway Offshore Basin over 18 months from early 2021 to mid-2022. Activities required supply vessels to service the drilling rig with approximately three vessels per week from Geelong. During that time, Beach undertook extensive consultation with the commercial fishing sector and VRFish to advise its activities. Beach determined its drill rig towing route and supply vessel routes in consultation with the local lobster fishing sector to avoid fishing equipment. Beach advised the Australian Hydrographic Office of its activities and requested they issue a Notice to Mariners to advise of drill rig locations. Beach also provided regular updates to commercial fishing associations and VRFish. Due to some recreational fishers ignoring such notices, Beach requested VRFish to

3.4 COMMERCIAL FISHING	
	issue further notices to its members. Beach does not agree with the claim that it is constantly in the way of commercial and recreational fishing boats. Notwithstanding past activities, there is always the potential for overlap of petroleum titleholder activities with commercial and recreational fishing licence holder activities. However, Beach does not want to cause disruption to the area as is claimed. Beach has assessed the comments made regarding the physical presence of the activity's operations. No change has been made to the EP in response to these comments.
3.5 TOURISM, COMMUNITIES AND RECREATION	
3.5.1 Matter: Socio Economic Impacts Claim: The Environment Plan does not recognise the importance of Little Penguins for tourism in Victoria (Section 6.5.6), which is of concern given they are a significant drawcard for regional. Claim: If the Beach Exploration Drilling Program is allowed to commence, this will have a negative effect on tourism, commercial businesses and recreation. This will have a direct effect on the community around the permit sites and their families. The jobs created by Beach will not out way the jobs lost as the result of the drilling.	Beach Energy (Operations) Limited (Beach) acknowledges the concerns regarding how the Offshore Gas Victoria (OGV) Drilling Program could impact tourism, recreation and businesses. The Biologically Important Area for Little Penguins is shown in Table 6-39. The information has been drawn from comprehensive studies undertaken for Australian Marine Parks (see Section 6.2). A summary of these studies is provided in Section 6.4.7.4, along with references. Beach has amended Section 6.6.6 to include a reference to the tourism activities focussed on the Little Penguin colonies on Phillip Island. The potential impacts and risks from the activity to socio-economic receptors have been assessed in section 7 of the EP. Beach's last offshore drilling campaign ran over 18 months from early 2021 to mid-2022. The campaign was conducted safely and met all performance standards set out in the EPs that were accepted by the regulator for that activity. Notwithstanding Beach's past and ongoing consultation with the tourism industry, there have been no claims of negative effects from Beach's offshore activities adjacent regional tourism communities. Those communities have coexisted with Beach and with predecessors of Beach's operations, including Origin Energy and Woodside. There is no evidence of jobs lost because of Beach's offshore drilling activities. On the contrary, as a supplier of gas to the Australian East Coast Gas Market, Beach has contributed to local economies who rely on gas to fuel some key regional manufacturing industries such as dairy processing plants and timber mills.

3.4 COMMERCIAL FISHING	
	Beach has assessed the comments made regarding the socio-economic impacts on local tourism, recreation and businesses throughout the proposed drilling program. No change has been made to the EP in response to these comments.
3.6 CONSULTATION	
3.6.1 Matter: Regulatory Process Claim: What is the point of these public comment periods? will it change anything that happens. What a joke this process is. Claim: Do you make these things so long to make sure no one actually reads them?	The publication and invitation for public comment for certain Environment Plans (EP) is a requirement under the Offshore Petroleum and Greenhouse Gas (Environment) Regulations (Section 30). The public comment process provides an opportunity for community members to raise issues about environmental management matters that have not yet been considered in an EP for the proposed activity. To be considered a relevant issue or key matter, a comment must relate to the information contained in the EP. Titleholders must respond in 'general terms' to any comments received during the public comment period in a Titleholder's Report. The Titleholder's Report explains how the titleholder has addressed the key matter, which may include making changes to the EP. Where the titleholder has made changes to the EP because of information received through the public comment process, these must be clearly identified in the Titleholder's Report. The Titleholder's Report on public comment will be published for the public to view along with the EP submitted to NOPSEMA for assessment. Further information about public comment process can be found at nopsema.gov.au. Beach Energy (Operations) Limited (Beach) appreciates that some members of the public may find EPs long and complex. However, EPs are prepared for the purpose of meeting all the requirements set out in Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations and the additional guidance and polices published by Australia's offshore energy regulator, the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA). The length of each EP reflects the nature of the environment, the type of activities, the impacts and risks assessed, along with the corresponding control measures and environmental performance standards for the activities. During the consultation process, Beach ensures it meets the requirements of providing sufficient information as set out in the regulations and publishes that information in its engagement website, Home | Engage Beach (beachenergy.com.au) , in a variety of long and short formats, acknowledging there will be different information needs from different relevant persons.

3.4 COMMERCIAL FISHING

	Beach has assessed the comments made regarding the regulatory requirements and process. No change has been made to the EP in response to these comments.
3.6.2 Matter: Reasonable Period Claim: Conduct thorough consultation with local business and tourism operators who may be impacted by the proposed drilling program.	Beach Energy (Operations) Limited (Beach) has been consulting with local community including local business and tourism for a significant period and has determined that it has met consultation requirements, and consultation is complete. Beach has consulted relevant persons while preparing the Offshore Gas Victoria Drilling Program Environment Plan (EP) in accordance with applicable regulations, case law, guidelines, Beach policies and standards as set out in Section 9 of the EP. Beach recognises the purpose of consultation is to inform its understanding of the environment, including people and communities, the heritage value of places, and their social and cultural features, which may be affected by the proposed activities in the EP, and therefore refine or change measures proposed to reduce impacts and risks to an acceptable level and as low as reasonably practicable (ALARP). Beach's consultation was designed to ensure that relevant persons were identified and provided sufficient information and a reasonable time period to allow them to make an informed assessment of the potential impacts of the EP activities. Where objections or claims were raised about adverse impacts of the EP activities, the consultation process enabled an assessment of impacts and new or changed control measures to be adopted in the EP to reduce impacts and risk to an acceptable level and ALARP. Following recent case law, Beach undertook a further comprehensive review of its methodology for identifying and consulting with relevant persons. Beach is constantly refining its methodology cognisant of National Offshore Petroleum Safety and Environmental Management Authority Guidelines, recent case law, industry best practice and applicable to the nature and scale of the activities in this EP. The methodology follows a process of assessing elements of the EP to identify potential relevant persons: defined activities; the spatial extent of the Operational Areas and Planning Areas of the environment that may be affected (EMBA); environmental values and sensitivities; identification and assessment of risks and impacts. After initial identification, the consultation process is used to verify and refine the initial steps. That process is set out in Figure 11 of the EP. A rigorous methodology was applied to identify local business and tourism operators and Beach has consulted with over 60 organisations including associations. In addition, Beach undertook advertising in regional media as a further method to identify potential relevant persons.

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	Beach is confident that it has undertaken thorough consultation with relevant persons whose functions, interests or activities may be affected. No change has been made to the EP in response to these comments.
3.7 BROAD COMMENTS	
3.7.1 Matter: Climate Change Claim: The indirect impacts of this project should also be considered. Promoting fossil fuels rather than a move towards renewable sources of energy should also be considered when evaluating this project; the question should be asked; why are we even considering this? The burning of oil and other fossil fuels is a leading contributor to climate change. Claim: In Australia we not reducing our emissions at the speed needed. Claim: The mining and use of fossil fuels generate an unacceptable risk not just to marine life, but to tourism, farming, fishing, and the cultural values of first nation peoples. We can control the amount Methane, we put into the atmosphere by rapidly reducing the mining and use of fossil fuels. Claim: How does Beach Energy's new development fit in with the government's plan to have 83% of the Australian national electricity grounded in renewal energy by 2030?	Beach Energy (Operations) Limited (Beach) recognises that action to address climate change is necessary and that all energy systems must contribute in order to meet the targets set out in the Paris Agreement. As an energy company, Beach must play a role in managing our carbon emissions. Beach aspires to reach net zero Scope 1 and 2 emissions by 2050. Beach has an equity emissions reduction target to reduce our Scope 1 and 2 emissions intensity by 35% by 2030. This is aligned with the Australian Government's target of a 43% reduction in carbon emissions from a 2005 base. The emissions reduction is measured against a 2018 baseline, when Beach materially expanded its portfolio through the acquisition of Lattice Energy. The proposed management of the impact is aligned with the Beach Environment Policy, Climate Change Policy, Sustainability Policy, Risk Management Standard, Environment Management Standard and Sustainability Standard as detailed in Section 8 of the EP. The greenhouse gas (GHG) emissions (including methane) for the drilling program are provided in Section 7.3 and Appendix F (Drilling Program GHG Forecast) of the EP. The key points provided in the EP regarding GHG emissions include: • The total GHG emissions are calculated to be approximately 150 ktCO2-e, which is less than ~0.01% and 0.05% of the Australian and Victorian carbon budgets, respectively. • The emissions associated with the drilling program are small when compared to national emissions. They are insignificant on a global scale and not predicted to have determinable impact. • Fuel use and flaring volumes will be recorded, and emissions (from fuel combustion) are reported annually as part of statutory National Greenhouse and Energy Reporting Act (NGER) 2007 reporting and National Pollution Inventory (NPI) reporting (refer section 7.3.7 of EP). The claims about adopting alternatives (to fossil fuels) such as renewable energy sources are not relevant to the content of the EP and are not considered further. Beach takes its 'social licence' to operate seriously as can be seen in our Sustainability Report that demonstrates our commitments to environment, social and governance performance outcomes.

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	Beach has rights and obligations to explore, appraise and develop gas under its petroleum titles granted and administered under the Offshore Petroleum and Greenhouse Gas Storage Act 2006 and Regulations. The petroleum titles are provided in Table 1-2 of the EP. Beach has assessed the comments relating to climate change and is confident that all matters are adequately addressed in the EP. No change has been made to the EP in response to these comments.
3.8 Matter: Matter Not In EP Claim: The exploration and mining of gas will not add significantly to either job growth or the upgrading of the rural sector's skill base. (25) (26) The mining sector is a small direct employer compared with tourism (27)(28), farming (29), commercial and recreational fishing (30) all of which are significant for the welfare of seaside coastal areas.	Creation of employment opportunities is not relevant for the Environment Plan (EP) or the activity to which the EP relates. Therefore, the comment has not been considered further in the Titleholder's Report or in preparing the EP.
3.9 Matter: Gas shortage Claim: I am unsure why so many wells are going to be closed, surely, we need to keep these wells open to extract any remaining gas left in them if there is a big gas crisis looming.	Beach Energy (Operations) Limited (Beach) agrees with the comment that natural gas has an important role to play in providing affordable, reliable and secure energy to the community as we move through the energy transition. Beach is required under the Offshore Petroleum Greenhouse Gas Storage Act and Regulations to progressively decommission and remove all property and plug and abandon the wells. The wells planned for plug and abandonment are non-producing legacy suspended wells that either confirmed the absence of commercial hydrocarbon or were deemed to be not suitable for gas production. Where an exploration well is confirmed to have no commercial hydrocarbon potential after evaluation, the well will also be plugged and abandoned as required under Offshore Petroleum Greenhouse Gas Storage Act and Regulations. Beach has assessed this comment relating to potential gas shortages. No change has been made to the EP in response to this comment.