North-west Australia 4D Marine Seismic Survey Environment Plan

1. Purpose of this report

NOPSEMA has accepted the North-west Australia 4D Marine Seismic Survey Environment Plan (the EP) submitted by Woodside Energy Ltd (the titleholder) for a seismic survey activity in the Carnarvon Basin within the period(s) December 2019 to July 2020.

As required by the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (the Environment Regulations), the public was provided with an opportunity to comment on the EP. There were no public comments received during the public comment period.

Following the public comment period, the titleholder submitted the EP for assessment by NOPSEMA on 23 July 2019. On 10 December 2019 NOPSEMA completed its assessment of the EP and has determined that it was reasonably satisfied that the EP meets the criteria for acceptance[1].

This report explains how NOPSEMA took into account key matters raised by stakeholders in making its decision. Comments have been grouped into 'key matters' that capture the key issues, concerns or information provided during the consultation process. This report also contains other key matters reflecting important values and sensitivities that may be of interest to the public.

This report accompanies the accepted North-west Australia 4D Marine Seismic Survey Environment Plan (revision number 3, dated 18/11/19) submitted by Woodside Energy Ltd which is available on the NOPSEMA website and should be referred to for further information.

1.1. Information relevant to NOPSEMA's decision:

In making the decision to accept this EP, NOPSEMA took into account:

- the Environment Regulations;
- NOPSEMA Assessment Policy (PL0050), Environment Plan Assessment Policy (PL1347) and Environment Plan Decision Making Guidelines (GL1721);
- the Woodside Energy Ltd North-west Australia 4D Marine Seismic Survey Environment Plan;
- the information raised by relevant persons, government departments and agencies that is relevant to making a decision;
- the information raised through public comment that is relevant to making a decision (in this case none were received); and
- relevant plans of management and threatened species recovery plans developed under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and relevant guidance published by the Department of the Environment and Energy.

[1] Environment Regulations, Regulation 10A Criteria for acceptance of environment plan

2. Next steps

Responsibility for the ongoing environmental performance of the North-west Australia 4D Marine Seismic Survey activity remains, at all times, with Woodside Energy Ltd.

NOPSEMA has legislated responsibilities to inspect and investigate offshore petroleum and greenhouse gas storage activities, and to enforce compliance with environmental law. These functions will be applied to this activity in accordance with NOPSEMA's policies.

3. Sensitive Information

Sensitive information received during the public comment period, such as the names and contact details of commenters and specific information identified by the commenter or relevant person as 'sensitive', is not published in this report. Sensitive information is contained in a sensitive information part of the EP which has been considered by NOPSEMA during its assessment process.

4. Further information

This report does not provide an exhaustive record of all matters relevant to environmental management and decision making for this EP.

If you would like further information about the activity, please contact the titleholder's nominated liaison person specified in the EP and on NOPSEMA's webpage for the North-west Australia 4D Marine Seismic Survey.

If you would like to be notified of regulatory information on the activity, such as start and end dates and enforcement actions (if any), please subscribe to updates from the link on NOPSEMA's website: https://info.nopsema.gov.au/environment_plans/13/show_public

How NOPSEMA has taken into account key matters raised during the assessment and decision making process for the North-west Australia Marine Seismic Survey

#	Matter	Titleholder response	NOPSEMA's assessment and decision
1	***There would be unacceptable impacts to blue whales due to the proximity of the seismic acquisition area to the Ningaloo foraging biologically important area (BIA) and the overlap of the Area A and Area C acquisition areas with the migratory BIA for blue whales.***	Woodside Energy Limited (WEL) undertook a comprehensive assessment of the potential impacts to Blue Whales. This was informed by underwater acoustic modelling that accounted for physical and behavioural impacts. Further, WEL commissioned ANIMAT modelling to simulate whale movement and behavioural changes in response to modelled sound fields. WEL will ensure that the activity is conducted such that there is no physical injury to marine fauna (cetaceans, whale sharks, marine turtles; EPO 3.1), and there is no displacement of pygmy blue whales within foraging BIAs (EPO 3.2). The control measures that will be implemented to ensure there is no physical injury to marine fauna are as follows: • Implementation of EPBC Policy Statement 2.1 (Part A) Standard Management including observation zone, increased 2 km shut down zone (C3.13), pre start-up visual, soft start procedure, night-time and low visibility procedure. (C3.1) • Implementation of EPBC Policy Statement 2.1 (Part B.6) Adaptive management measures (C3.14) including no operation	NOPSEMA recognises that there is the potential for the activity, if not appropriately managed, to have an unacceptable impact on blue whales should they be feeding in the BIA, or migrating through the region, during the course of the petroleum activity. In making a decision regarding this matter, NOPSEMA took into account the content of the EP; relevant scientific literature; NOPSEMA's Decision Making Guidelines (GL1721), the Conservation Management Plan for the Blue Whale (DoE, 2015); EPBC Act Policy Statement 2.1 (DEWHA, 2008), and the EPBC Act Significant Impact Guidelines 1.1- Matter of National Environmental Significance (DEWHA, 2013). During the course of the assessment NOPSEMA required WEL to consider: • Population growth and behavioural variability for (ANIMAT) modelling the potential impacts of seismic sound on blue whales within BIAs. This resulted in a more realistic/conservative impact model. • Further justification or control measures for the attenuation of sound into the foraging BIA. This resulted in WEL

		at night where there have been three or more blue whale instigated shut downs. • Acquisition within certain areas in area C will be timed such that there is no overlap with peak northern migration or the timing of animals within foraging BIA (acquisition will not occur between May-June). (C3.11) • Use of two dedicated, trained MFOs (C3.12)	implementing a temporal control to avoid the peak northern migration. • Additional control measures to address uncertainty in the response of blue whales to seismic sound and variability in habitat use and timing. This resulted in WEL implementing an adaptive management regime which is directly linked to the presence/absence of whales in the area. Given the conservatism of the ANIMAT modelling inputs, the temporal avoidance of peak migratory times, and with additional control measures proposed NOPSEMA is satisfied that there will be no injury or displacement of blue whales foraging within the Ningaloo foraging BIA. Additionally, NOPSMA is satisfied that impacts to migrating blue whales will be limited to short term behavioural responses, with no injury or displacement from migratory corridors. NOPSEMA has concluded that after taking into consideration all the environmental management requirements, that the activity will not cause unacceptable impacts to pygmy blue whales.
2	***There would be unacceptable impacts to turtles due to the overlap of Area A acquisition area with Flatback turtle internesting habitat critical.***	WEL has analysed the activities and the potential for impacts to marine turtles as a result of seismic noise emissions. This included engaging a prominent marine turtle expert regarding interesting habitat. Based on acoustic modelling, mortality and potential	NOPSEMA recognises that there is the potential for the activity, if not appropriately managed, to have an unacceptable impact on marine turtles should they be present within the deeper waters of the Flatback habitat critical for internesting.

		injury are possible within 20 m of the seismic source, while behavioural disturbances may occur out to 3 km from the source. WEL will ensure that the activity is undertaken in a manner that prevents displacement of marine turtles from habitat critical during nesting and interesting periods (EPO 3.4). The control measures that will be implemented to ensure there is no displacement of turtles are as follows: • Application to EPBC Policy Statement 2.1 Part A Standard Management Procedures to whale sharks and turtles with a 500 m shut down zone C3.2). • EPBC Policy Statement 2.1 Part B.6 Adaptive management measures – ceasing of night time operations where there are greater than three turtle shutdowns for three consecutive days (C3.15). • Employ two dedicated MFOs to undertake observations for turtles.	In making a decision regarding this matter, NOPSEMA took into account the content of the EP; relevant scientific literature; NOPSEMA's Decision Making Guidelines (GL1721), the Recovery Plan for Marine Turtles (DoE, 2017); and the EPBC Act Significant Impact Guidelines 1.1- Matter of National Environmental Significance (DEWHA, 2013). During the course of the assessment NOPSEMA required WEL to consider/provide: • Further information to support the conclusion that marine turtles would not be impacted by the activity, and demonstrate that the activity is consistent with the Recovery Plan for Marine Turtles. This resulted in WEL providing information from a prominent marine turtle expert to support the conclusion that waters >70m deep would not constitute suitable habitat for interesting flatback turtles. • Additional controls to account for uncertainty in the potential presence of marine turtles within the operational area. In response WEL will implement an adaptive management strategy should higher than expected numbers of turtles be encountered in the survey areas. Further WEL propose to implement soft starts, pre-start observations and shut down zones for turtle observations.

			NOPSEMA concludes that given the unlikely presence of marine turtles within the survey area, and the implementation of suitable controls and adaptive management measures, the activity will not cause unacceptable impacts to marine turtles.
3	***There would be unacceptable impacts to sperm whales who may forage in the deep waters of the North West Shelf, with historically high numbers present on the Exmouth Plateau.***	WEL has assessed the possibility of sperm whales occurring within the operational area and adopted additional control measures to assist in the detection of deep diving cetacean species, specifically beaked and sperm whales. Passive acoustic monitoring (PAM) will be used on a 24 hr basis in all acquisition areas to detect for the presence of sperm and beaked whales so that mitigation measures can be applied. WEL will ensure that the activity is undertaken in a manner that prevents physical injury to marine fauna (cetaceans, marine turtles, whale sharks). The control measures that will be implemented to ensure this level of performance are as follows: • Implementation of EPBC Policy Statement 2.1 (Part A) Standard Management with increased 2 km shut down zone. (C3.3) • Use of two dedicated, trained MFOs (C 3.12) • Application of EPBC Act Policy Statement 2.1 Part B.5 – PAM • Experienced PAM operators will undertake PAM observations (C3.16).	NOPSEMA recognises that although the activity does not overlap with a sperm whale biologically important area, there is potential for sperm whales to be encountered during the activity, particularly in the deep waters of the Exmouth Plateau. In making a decision regarding this matter, NOPSEMA took into account the content of the EP; relevant scientific literature; NOPSEMA's Decision Making Guidelines (GL1721), EPBC Policy Statement 2.1, and the EPBC Act Significant Impact Guidelines 1.1- Matter of National Environmental Significance (DEWHA, 2013). Recognising the potential impacts to sperm whales, NOPSEMA required WEL to evaluate the application of PAM for detecting the presence of sperm whales. While NOPSEMA recognises the limitations of PAM for detecting low frequency cetaceans, it can be effectively implemented for detecting higher frequency clicks produced by sperm and beaked whales. WEL responded to this request by adopting the use of PAM to detect sperm whales (and other relevant cetaceans).

			NOPSEMA is reasonably satisfied that the implementation of PAM, will be effective for detecting the presence of sperm whales enabling for effective application of shut down protocols. In addition, it is recognised that PAM may provide opportunistic detection of other cetacean species. Consequently, NOPSEMA concludes that the activity can be conducted in a manner that will not result in unacceptable impacts to sperm whales.
5	***There was concern from relevant persons that the survey may have detrimental impacts on their functions, interests and activities***	WEL conducted relevant person consultation by identifying the relevant persons whose functions, interests and activities may be affected by the activity, then providing them with sufficient bespoke information in order to determine how the activity will affect their functions, interests and activities. The relevant persons were then given sufficient time to respond with any objections or claims and those claims were responded to and/or incorporated into the EP consistent with the requirements of Division 2.2A of the Regulations. WEL will ensure that impacts to socio-economic values from seismic noise are limited to at, or below, Slight (EPO 3.9). The control measures that will be implemented to ensure this are as follows: • WEL will ensure that no part of the activity will take place in any part of a declared	NOPSEMA recognises that there was concern from both commercial and recreational fishing stakeholders and the Ningaloo Coast World Heritage Advisory Committee that the survey could impact on their functions, activities and interests. NOPSEMA acknowledges the importance of appropriate consultation to ensure relevant persons have sufficient information and time and that any objections and claims made are appropriately dealt with by the titleholder. In making a decision regarding this matter, NOPSEMA took into account the content of the EP; NOPSEMA's Decision Making Guidelines (GL1721), the full text correspondence with relevant persons, the extent of the consultation effort by WEL and how WEL addressed the merits of objections and claims made.

		World Heritage property by establishing a 2km buffer between the operational area and the Ningaloo Coast World Heritage Area (EPO 3.6). To avoid inadvertently entering the World Heritage Property WEL will implement an alarm system on the seismic vessel when it comes within 1 km of the operational area boundary. • WEL will undertake ongoing consultation prior to, during and on completion of the survey. A communication protocol will be in place which will include the provision to commercial fishers of 24 hour look-ahead of seismic vessel location. • WEL will undertake seismic acquisition in a manner that prevents injury to any diver (EPO 3.8). To achieve this WEL will ascertain if there will be any diving operations concurrent with seismic acquisition by engaging with facility operators, commercial diving companies, scientific research groups and recreational dive operators. • In preparing the EP, WEL engaged with recreational fishing representatives including the Exmouth Gamefish Club and was informed of planned game fishing competitions in Area C. To address any potential conflict with the planned fishing competition WEL committed to not acquire seismic data in Area C between the 15th and 20th March to avoid GAMEX tournament fishing days (EPS 3.7).	NOPSEMA required that WEL provide control measures to ensure that no part of the activity will be undertaken in any part of the declared World Heritage property. In respect to commercial fishing NOPSEMA required that WEL evaluate potential temporal and spatial overlap with spawning commercial fish species and to provide details of ongoing consultation with commercial fishers. Taking into consideration the nature and scale of the activity, NOPSEMA is satisfied that the consultation has met the requirements of Division 2.2.A in that appropriate authorities and relevant persons have been engaged in consultation, with sufficient time and information provided, and that the response by WEL to objections and claims are appropriate.

References

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