

1. PROJECT BACKGROUND AND OVERVIEW

TotalEnergies E&P Namibia B.V. (Pty) Ltd (TEEPNA) currently holds an Exploration Licence over Block 2912. TEEPNA is now applying for an Environmental Clearance Certificate (ECC) for the drilling of up to 10 exploration and/or appraisal wells within an area of interest to explore for hydrocarbons in the Block. Related exploration activities include vertical seismic profiling (VSP), well testing, well abandonment, sonar surveys and sediment sampling and coring.

Before the proposed project can commence, TEEPNA requires an ECC from the Ministry of Environment, Forestry and Tourism. As part of the process of applying for an ECC, an Environmental and Social Impact Assessment (ESIA) process must be undertaken. SLR Environmental Consulting (Namibia) (Pty) Ltd (SLR) has been appointed to undertake and manage the ESIA process.

2. LOCATION OF DRILLING AREA OF INTEREST

The area of interest for drilling is 5 062 km² in extent and is located approximately 290 km offshore at its closest point and 340 km southwest of Lüderitz, in water depths between 2 940 and 3 700 m (Figure 1).

3. HOW CAN YOU BE INVOLVED IN THE EIA?

SLR has compiled a Draft Scoping Report, which is currently available for review and comment. This Non-Technical Summary is being distributed as a basis for notification and to facilitate your comment on the proposed project, impact assessment and proposed mitigation.

You can be involved by:

- Reading this Non-Technical Summary (which is available via email or WhatsApp). Full report is also available for review on the SLR website and at public venues.
- Attending public meetings. Please contact SLR for the specific details.
- Sending comments, questions or concerns to SLR. For comments to be included in the Final ESIA Report, they should reach SLR by **no later than 07 March 2023**.

SLR's contact details (including Tel., WhatsApp and website details) are provided at the end of this document.

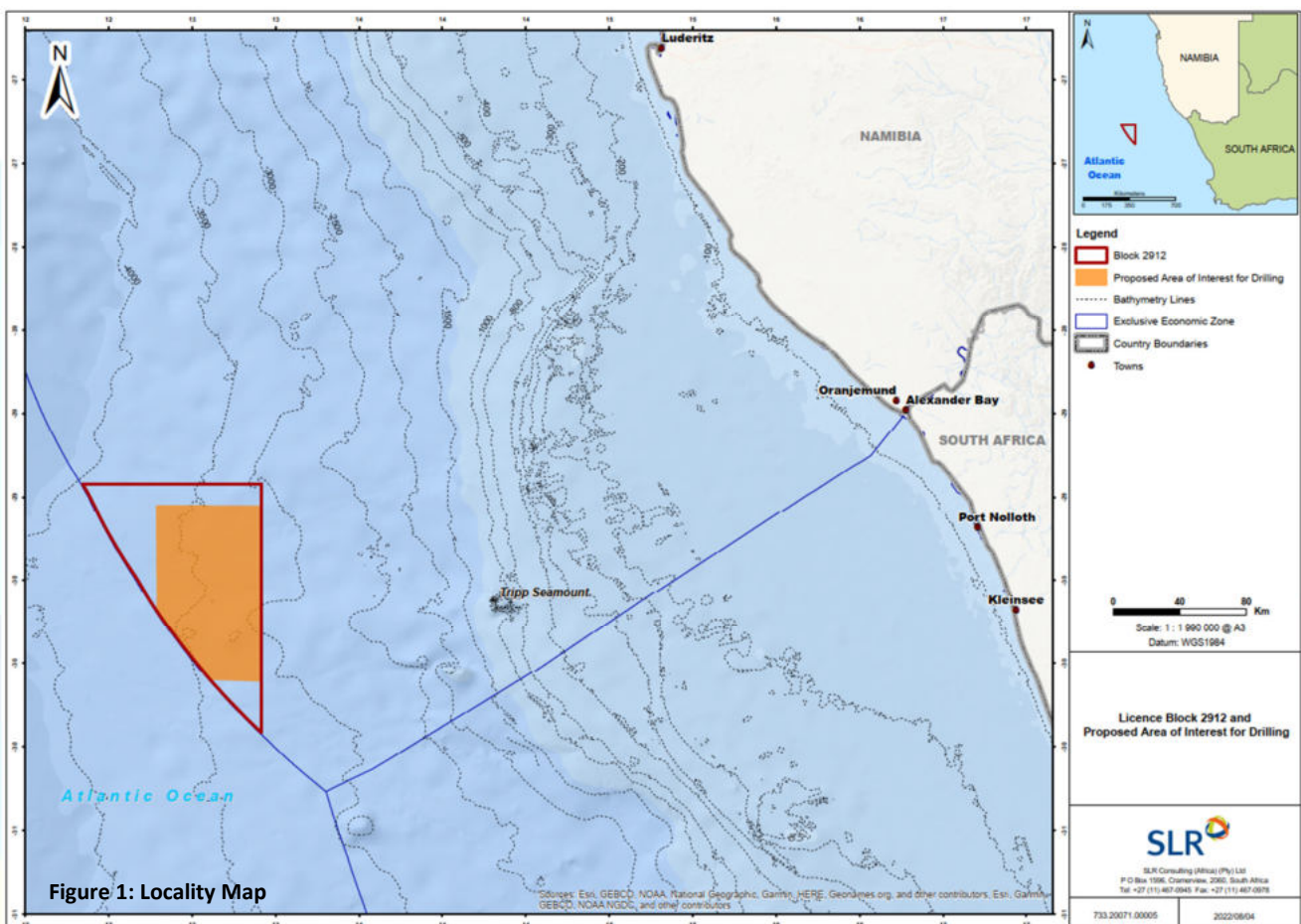


Figure 1: Locality Map

4. PROJECT'S NEED AND DESIRABILITY

Namibia, like the rest of the world, is vulnerable to climate change. There is thus global concern of the need to reduce carbon emissions and achieve carbon neutrality by 2050. However, the rapid transition to carbon neutrality presents a potential risk to economic growth and sustainable development. Namibia is committed to a just transition to a net-zero emission and a climate resilient society, whereby the need to reduce emissions is balanced with the need to grow the economy and create jobs. In this regard, the Namibian Government policy currently promotes the country's exploration potential and investments in the oil and gas sector.

The proposed project has no direct influence on Namibia's reliance on hydrocarbons and their contribution to the countries' energy mix. These aspects are influenced by Namibia's energy and climate change related policy, the financial costs of the various energy sources and consumer choices in this regard. These National strategic policy issues relating to energy and climate change fall beyond the scope of this exploration project ESIA.

5. DESCRIPTION OF EXPLORATION WELL DRILLING

5.1 Number, Timing and Duration

- *Number of wells:* Up to 10 wells.
- *Anticipated commencement:* Between 2nd quarter 2023 and 2nd quarter of 2024.
- *Duration of drilling operation:* 3 to 4 months per well.

5.2 Pre-drilling surveys

- *Sonar surveys:* In addition to well drilling, TEEPNA is proposing to undertake sonar surveys to investigate the structure of the ocean bed sediment layers.
- *Seabed sediment coring:* Piston and/or box coring for the sampling of 20 cores.

5.3 Drilling Operation

- *Final Drilling Site Selection:* This will be based on further data analysis and a pre-drilling seabed survey of the target area.
- *Drilling Sequence or Stages:* A well is created by drilling a hole into the seafloor using a drill bit, which crushes the rock into small particles, called "cuttings". Depending on the stage of drilling (**Figure 3**), these cuttings are either (1) discharged onto the seafloor adjacent to the hole or (2) treated on the drilling unit before discharged overboard. After the hole is drilled, steel pipes are placed in the hole and permanently cemented into place to prevent it from collapsing.
- *Well Testing:* Once the target depth is reached, a well may be tested (flared) if a resource is discovered.
- *Well Sealing and Plugging:* Once testing is complete, the well is sealed with cement plugs, tested for integrity and abandoned according to international best practices.

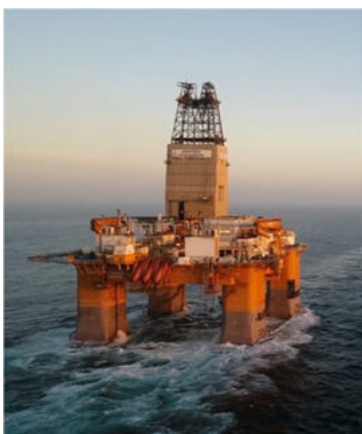


Figure 2: Semi-submersible drilling unit
www.africaenergycorp.com

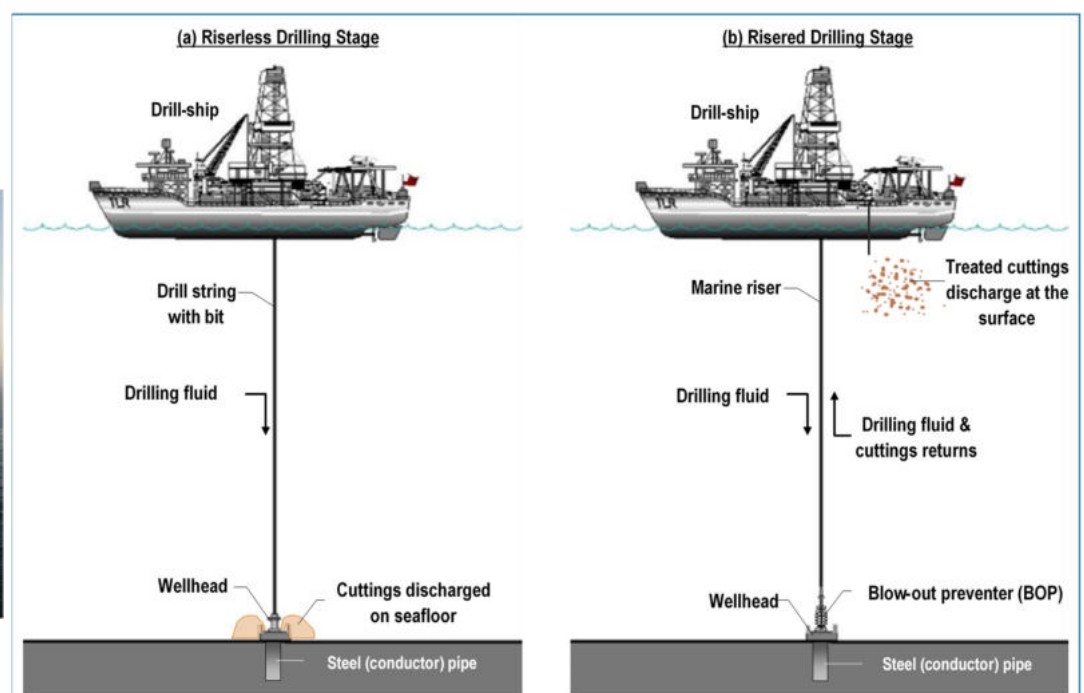


Figure 3: Drilling stages

5.4 Exploration Drilling Logistics

- *Drilling Unit:* Drilling will be undertaken using either a drill-ship (Figure 2) or a semi-submersible drilling unit (Figure 3).
- *Support vessels:* The drilling unit will be supported by up to three vessels and helicopter transfers.
- *Logistics base:* The onshore logistics base will be located at the Port of Lüderitz, with occasional trips to Walvis Bay.

6. KEY ENVIRONMENTAL AND SOCIO-ECONOMIC SENSITIVITIES

6.1 Physical Environment

The seabed in the vicinity of Block 2912 is largely characterised by homogenous muddy sands. A major seabed feature along the southern Namibian coast is Tripp Seamount, located approximately 120 km east of Block 2912 (Figure 4).

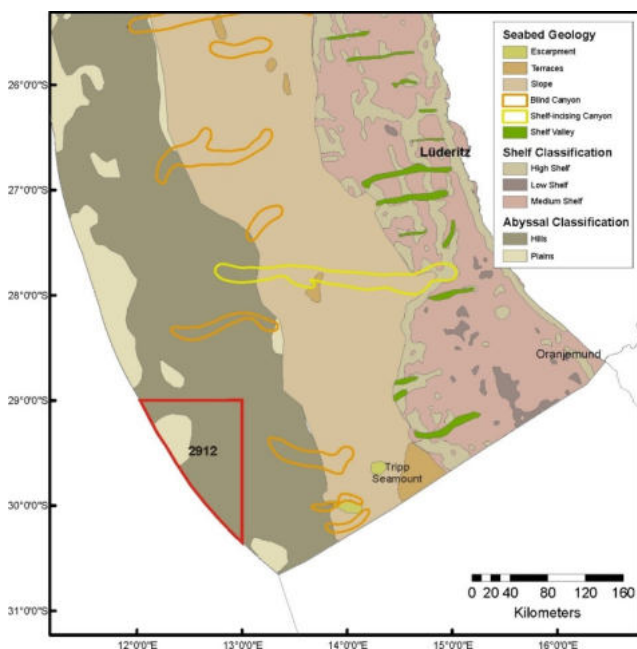


Figure 4: Seabed Features (Source: Pisces)

6.2 Biological Environment

Block 2912 is located in the Benguela system, which is characterised by the presence of cold surface water, high biological productivity and highly variable physical, chemical and biological conditions.

The seabed communities in Block 2912 extend from the shelf edge into the abyss, with the benthic habitat types in the block rated as 'Least Threatened' (Figure 5).

The approved Marine Protected Areas (MPAs) and mapped Ecologically and Biologically Significant Areas (EBSAs) and Ecological Support Areas within the broad project area are

shown in Figure 6. The area of interest avoids all MPAs and EBSAs.

6.3 Socio-Economic Environment

The project’s area of influence encompasses the southern deepwater offshore environment to the south of Lüderitz.

Several fishing sectors operate off the Namibian Coast, most of which fish inshore of the shelf break and thus inshore of the area of interest for drilling. Due to the far offshore location of Block 2912, only the large pelagic longline fishing sector overlaps with the proposed drill area of interest. Table 1 shows the percentage overlap with the proposed drilling area.

Table 1: Fisheries overlap with the drilling area

Fishing sector
Overlap
Large Pelagic Longline - Figure 7
No Overlap
Demersal Trawl
Mid-Water Trawl
Deep-water trawl
Demersal Longline
Small Pelagic Purse-Seine
Tuna Pole
Traditional Line-Fish
Deep-sea crab
Rock Lobster
Mariculture

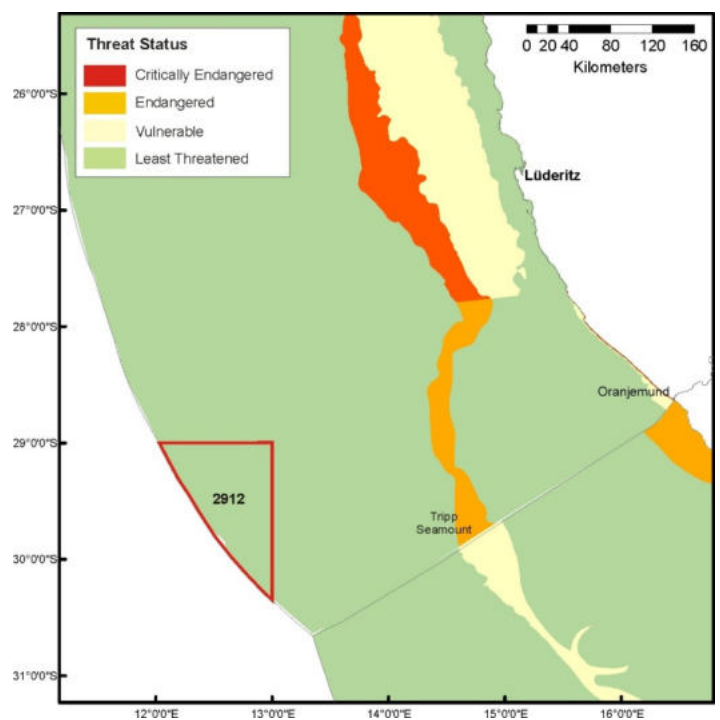


Figure 5: Benthic Ecosystem Threat Status (Adapted from Holness et al. 2014 and Sink et al. 2019)

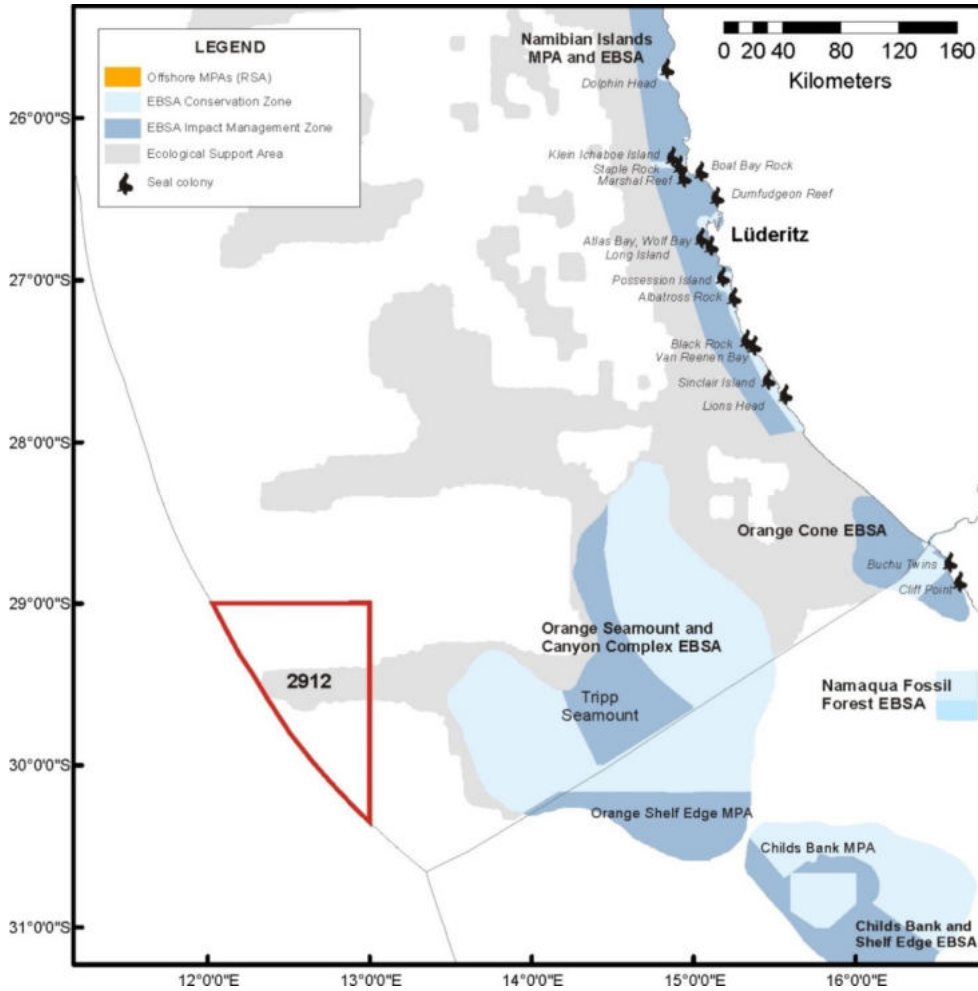


Figure 6: EBSAs, proposed spatial planning zones and Ecological Support Area (Adapted from MFMR, 2021 and NMU, 2022)

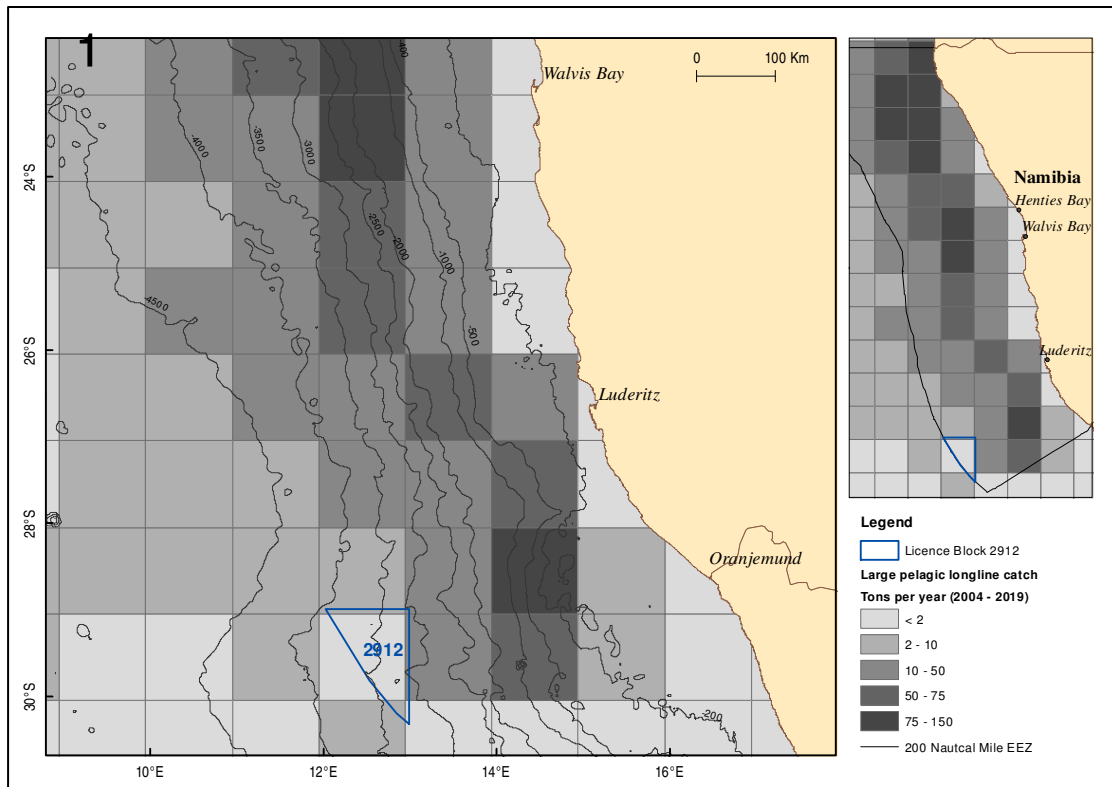


Figure 7: Pelagic Longline Catch (2004-2019) (Source: CapMarine)

7. KEY IMPACT ASSESSMENT FINDINGS

7.1 Normal Operations

Routine vessel emissions and discharges: The area of interest for drilling is located further than 290 km from shore and in a main marine traffic route that passes around southern Africa (see Figure 8), thus most of the impacts related to routine emissions and discharges are not unique to the project vessels, but common to the numerous vessels that pass through Namibian waters on a daily basis. The dominant wind and current direction will also ensure that any emissions and discharges move mainly in a north-westerly direction away from the coast. Impacts are assessed as being of **LOW to VERY LOW** significance.

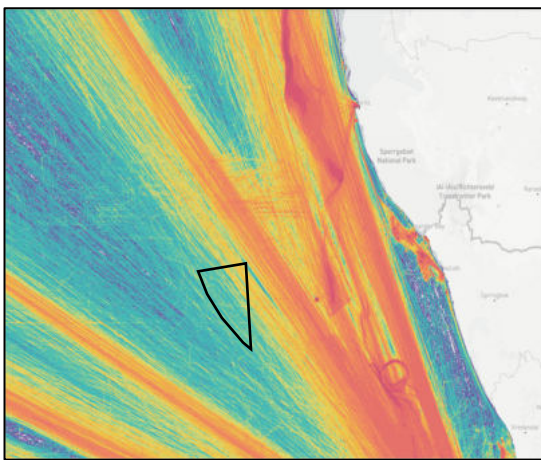


Figure 8: Major shipping routes along the Namibian coast (Source: www.marinetraffic.com)

Drilling discharges: The potentially most significant impact relates to the smothering of sensitive or potentially vulnerable benthic communities (e.g. hardgrounds) with drill cuttings. Although the area is largely associated with unconsolidated (loose) sediments, which are classified as 'Least Threatened', the deposition footprint could potentially overlap with isolated vulnerable habitats in the area of interest. The deposition footprint extends up to 1.6 km from the drill site distributed mainly in a west-north-westerly direction due to the dominant currents, away from the more sensitive communities on the continental shelf edge, with the thickest deposition within 88 m of the drill site. In order to mitigate this impact, it is recommended that drilling does not occur within 100 m of any vulnerable habitats identified during a pre-drilling site survey (using video). The 100 m buffer accommodates the area of most deposit and maximum smothering risk. Impact of smothering in the unconsolidated sediments is of **LOW** significance and could last for up to 10-years due to weak bottom currents.

The environmental risk in the sediment due to toxic effects of the drilling fluids extends 760 m from drill site, mainly in a west-south-westerly direction (see Figure 9), where there may be a reduction in abundance, biomass and diversity of fauna on the seabed. In unconsolidated sediments this impact would be considered as **NEGLIGIBLE**. If vulnerable habitats are encountered, the impact could be of **MEDIUM** significance and could last for up to 10-years.

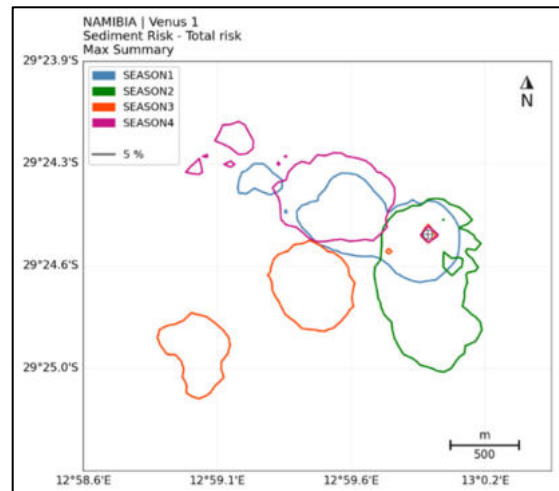


Figure 9: Environmental risk in the sediment showing WSW deposition (Source: ProOceano 2023)

The environmental risk in the water column extends further (up to 7.7 km on seabed in a northerly direction and 20.5 km at sea surface in a west-south-westerly direction - Figure 10), away from the more sensitive communities on the continental shelf edge. Although the risk in the water column extends further than in the sediment, it only lasts for up to 16 days due to rapid dilution. The plume is generally directed away from inshore spawning grounds of key commercial species (e.g., hake, anchovy and sardine). Impacts on the water column are assessed as being **NEGLIGIBLE**.

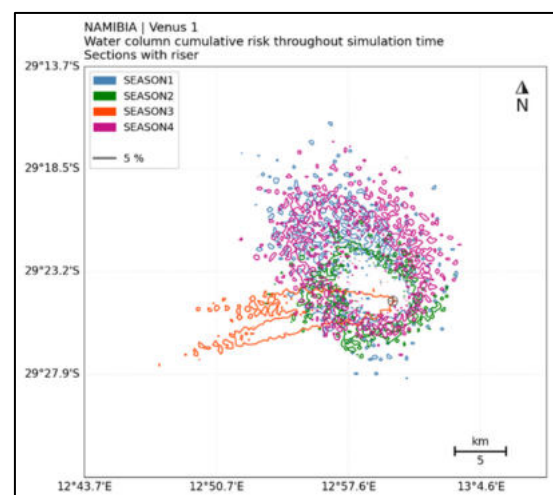


Figure 10: Environmental risk in the water column (at surface) showing NW and WSW dispersion (Source: ProOceano 2023)

Any impact on the marine ecosystem could in turn impact people's intangible cultural heritage, including ancestry / spirituality, livelihood, and sense of place. Although some indigenous groups indicated that they consider ancestors to reside in both water and wind but not in the sea. While the indigenous groups make use of waterways in the form of springs and rivers, there is rare connection with the ocean or sea. Similarly, no rituals were identified in respect of European settler groupings living along the coast. Although appropriate public participation efforts and the possible implementation of ritual events will lower the intensity of the impact on intangible cultural heritage, the impact will remain of **MEDIUM** significance for those people who are categorically opposed to oil and gas exploration.

Underwater noise: Underwater noise will be generated by the project vessels, pre-drilling surveys (sonar) and during logging (vertical seismic profiling). Although vessel and drilling noise may disturb whales and dolphins up to 33.6 km, fish up to 1.56 km, and turtles up to 150 m from the source, it is considered to be less of an issue as the area of interest is in a main marine traffic route and already experiencing elevated vessel noise compared to other areas outside the main traffic route. Impact of vessel noise on marine fauna is **VERY LOW**.

Noise modelling predicts that noise generated during logging (for up to 9 hrs) is estimated to cause disturbance of up to 1.42 km away from the source for whales and dolphins, up to 4.23 km for fish and 340 m for turtles. Key Humpback whale calving and nursing areas off Elizabeth Bay and major fish spawning areas fall outside of the zone of impact at distances well beyond those at which injury or disturbance is likely to occur. Impact of logging noise on marine fauna has been assessed as being **LOW**. Noise from sonar surveys is similarly assessed as being of **LOW** significance. Considering fishing, only the large pelagic longline sector overlaps with the drilling area and zone of noise impact. Based on the historic catch and effort within the zone of impact, the impact on this sector has been assessed as **VERY LOW**, assuming good communication and coordination with the sector.

There is **NO IMPACT** on the other fishing sectors, including the small-scale fisheries, as these sectors fall outside the estimated zones of impact for noise.

Safety exclusion zone: The implementation of the 500 m safety zone around the drilling unit (which is a legal requirement) will effectively exclude fishing from this area

(3 - 4 months per well). Since the safety exclusion zone is less than the 4.23 km behavioural disturbance zone, the impact on fishing due to exclusion is similar to the impact assessed for noise above, **VERY LOW**.

Jobs and business opportunities: The majority of the workforce will comprise highly specialised skilled staff that will be provided by the drilling contractor. The demand for local content and local employment will be related to the use of local service providers for logistics, supply base, helicopters, refuelling, catering, goods, accommodation, and waste management. The impact related to jobs and business opportunities is assessed as being of **MEDIUM** positive significance for the town of Lüderitz.

7.2 Unplanned Events

The greatest environmental impact from offshore drilling is a major spill from a well blow-out. The probability of a well blow-out is, however, extremely unlikely. In Namibia 32 wells have been drilled in the offshore environment and in South Africa, 358 wells, with to date no well blow-outs being recorded.

A major oil spill can severely impact the offshore marine and coastal environments, including community livelihoods, fishing, recreation, tourism, and marine ecology. In the case of Block 2912, it is, however, not expected that an oil slick would reach the coast.

Oil spill modelling shows that once oil reaches the surface it is distributed by prevailing winds and surface currents with the highest concentrations of rising oil being transported in a NW direction. Under none of the modelling scenarios would an oil slick reach the coast of anywhere close to the Namibian Islands MPA or any other sensitive offshore areas (see **Figure 11**).

Modelling also confirmed that the implementation of surface and subsea response reduces the maximum distances from the release point.

In the unlikely event of a large oil spill, assuming the worst-case scenario of a prolonged period of oil on the sea surface, the residual impact has been assessed as being **MEDIUM to VERY HIGH**.

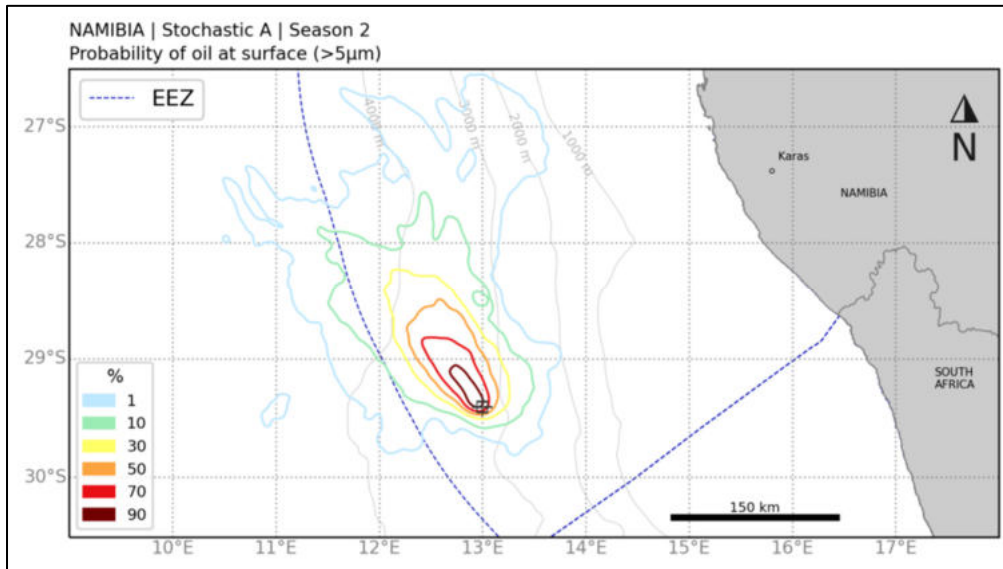


Figure 11: Probability of oil at the surface showing the maximum spread (Season 2)

(Source: Pimentel *et al.* 2022)

7.3 No-Go Alternative

The No-Go alternative (which here assumes no future oil and gas exploration and production in Namibia) means that any domestic oil and gas resources that might occur in the area of interest cannot be identified and Namibia will not be able to optimise the use of its own domestic oil and gas resources, should they exist.

Unless other domestic oil and gas fields are developed, Namibia's demand for gas and oil refined products will continue to be met by imports. It is reasonable to believe that current supply / demand trends will continue, with Namibia likely not being immune from the current global energy disruptions. The impact of the Ukraine-Russia conflict could continue to be felt in global energy markets for some years. If so, international oil and gas prices will be higher for longer and countries in the West will pay greater attention to security of supply in their strategic energy policies. If Namibia wishes to import oil and gas, it will be competing with motivated European buyers on less favourable terms and at potentially higher prices.

The No-Go alternative would prevent Namibia from identifying its own domestic oil and gas resources and would leave it open to the highly volatile international oil and gas markets (fluctuating price). Using a domestic resource would have a lower carbon footprint than importing from abroad and should not be seen to be in conflict with reaching carbon neutrality by 2050.

9. WHAT WILL HAPPEN NEXT?

- Please register on the Project Database and / or submit comments by **no later than 07 March 2023**, using the below contact details.
- All comments received will be addressed in the final ESIA Report.
- The Final ESIA Report will be submitted to MME and MEFT for decision-making where the application will either be approved or rejected.
- **If you are registered on the project database, you will be notified of the decision**

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