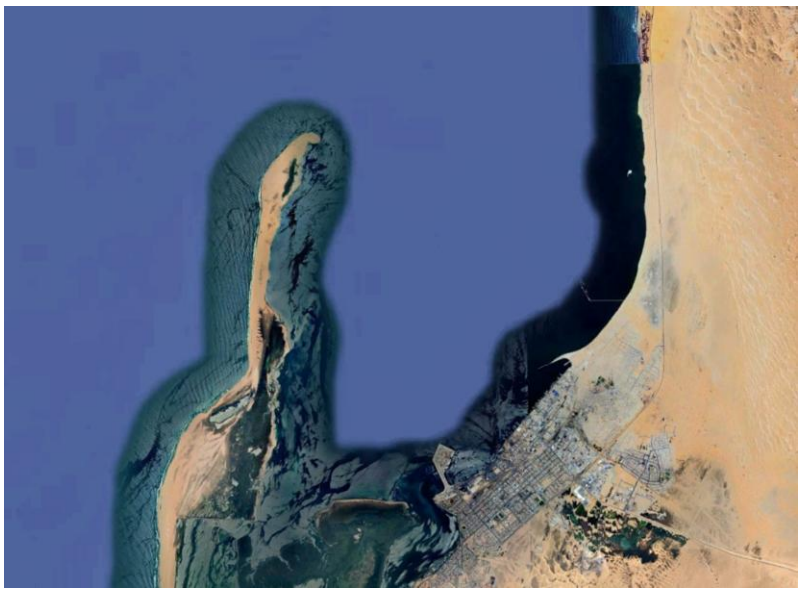
APP-007377

ENVIRONMENTAL SCOPING ASSESSMENT AND ENVIRONMENTAL MANAGEMENT PLAN FOR FUEL BUNKERING SERVICES WITHIN THE PORT OF WALVIS BAY, ERONGO REGION

ENVIRONMENTAL ASSESSMENT SCOPING REPORT AND MANAGEMENT PLAN



Assessed by:

Assessed for:

Maruvo Marine (Pty) Ltd

April 2026

Project:	**ENVIRONMENTAL SCOPING ASSESSMENT AND ENVIRONMENTAL MANAGEMENT PLAN FOR FUEL BUNKERING SERVICES WITHIN THE PORT OF WALVIS BAY, ERONGO REGION**	
Report: Version/Date:	Final April 2026	
APP No:	260424007377	
Prepared for (Proponent):	Maruvo Marine (Pty) Ltd PO Box 5981 Walvis Bay Namibia	
Lead Consultant:	Geo Pollution Technologies CC PO Box 11073 Windhoek Namibia	TEL.: (+264-61) 257411 FAX.: (+264) 88626368
Main Project Team:	**André Faul** (B.Sc. Zoology/Biochemistry); (B.Sc. (Hons) Zoology); (M.Sc. Conservation Ecology); (Ph.D. Medical Bioscience) **Ernest Pelser** (B.Sc. Zoology/Microbiology); (B.Sc. (Hons) Environmental Science); (M.Sc. Environmental Science)	
Cite this document as:	Faul A; Pelser E; 2026 April; Environmental Scoping Assessment and Environmental Management Plan for Fuel Bunkering Services within the Port of Walvis Bay, Erongo Region	
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Report Approval:	 **André Faul** Conservation Ecologist	

I JJP REYNEKE acting as the Proponent's representative (Maruvo Marine (Pty) Ltd), hereby approve this report and confirm that the project description contained in herein is a true reflection of the information which the Proponent has provided to Geo Pollution Technologies. All material information in the possession of the Proponent that reasonably has or may have the potential of influencing any decision or the objectivity of this assessment is fairly represented in this report.

Signed at CAPE TOWN on the 19TH day of MAY 2026.

Maruvo Marine (Pty) Ltd

2025/0625

Company Registration

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Signed at _____ on the _____ day of _____ 2026.

_____ _____

Maruvo Marine (Pty) Ltd Company Registration

EXECUTIVE SUMMARY

Maruvo Marine (Pty) Ltd (hereafter referred to as the Proponent) proposes to establish a marine fuel bunkering service within the Port of Walvis Bay and associated anchorage areas. The service will focus on the refuelling of seafaring vessels operating within the port and surrounding operational waters. Bunkering operations will include ship-to-ship (STS) transfers at approved locations within the Port of Walvis Bay and associated anchorage areas, as well as quayside bunkering where required. Fuel will be sourced through approved supply arrangements within the Port of Walvis Bay and, where applicable, from other marine fuel supply vessels, and transferred to receiving vessels under strict safety and environmental protocols. The proposed service will involve the transport and transfer of Marine Gas Oil (MGO) and Very Low Sulphur Fuel Oil (VLSFO). No blending or mixing of fuel will take place as part of the proposed operation.

The Proponent appointed Geo Pollution Technologies (Pty) Ltd to undertake an environmental assessment for the proposed bunkering service. The assessment focuses on the operational procedures for STS transfers, quayside bunkering, and associated fuel loading activities. The study aims to identify and assess the environmental, safety, health, and socio-economic impacts associated with the proposed operations. Relevant environmental and project-related information has been gathered from available project documentation, supporting information provided by the Proponent, site knowledge, and secondary sources, enabling the identification of potential positive and negative impacts, which are addressed in this report.

Given the nature of marine and port-based bunkering activities, potential impacts on the marine environment, port operations, and surrounding coastal resources are anticipated. These include risks associated with fuel spills, increased vessel traffic, noise, air emissions, waste generation, and fire or safety incidents. Conversely, the project is expected to contribute positively to marine service provision within the Port of Walvis Bay by supporting fuel supply to vessels, contributing to associated economic activity, and supporting the continued development of Walvis Bay as an important maritime and logistics hub. The proposed operations will generate economic benefits through direct and indirect employment, training and skills transfer, and the stimulation of associated marine services such as tug operations, pilotage, stevedoring, vessel maintenance, and supplies. Taxes, levies, and port fees will contribute to the national treasury, while local businesses will benefit from increased demand for goods and services from maritime crews and operators.

Key concerns associated with the project include the risk of marine pollution, impacts on sensitive marine habitats and species, navigational safety, and potential disturbance to marine fauna from noise and vessel presence. These risks can be effectively mitigated through adherence to international best practice, including compliance with the International Maritime Organization's (IMO) MARPOL Annex I and other applicable conventions, as well as Namibian maritime, port, and environmental regulations.

The environmental management plan (EMP) in Section 10 of this document provides operational guidelines, spill prevention and response procedures, monitoring requirements, and compliance measures to ensure that potential impacts are minimised. The EMP must be used as a reference during all phases of bunkering operations. All operational records, including fuel transfer logs, spill reports, and training records, must be maintained. Operators and responsible personnel must be trained in the EMP, health, safety, and environmental procedures, and compliance must be monitored by relevant authorities.

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LIST OF ABBREVIATIONS

AIDS	Acquired Immune Deficiency Syndrome
BCLME	Benguela Current Large Marine Ecosystem
DWA	Department of Water Affairs
EBSA	Ecologically or Biologically Significant Area
EIA	Environmental Impact Assessment
EMA	Environmental Management Act No 7 of 2007
EMP	Environmental Management Plan
EMS	Environmental Management System
GPT	Geo Pollution Technologies
HIV	Human Immunodeficiency Virus
IAPs	Interested and Affected Parties
IBA	Important Bird Area
IBL	Internal Boundary Layer
IMO	International Maritime Organization
IUCN	International Union for Conservation of Nature
ITOPF	International Tanker Owners Pollution Federation
KBA	Key Biodiversity Area
m/s	Meter per second
MABL	Marine Atmospheric Boundary Layer
MARPOL	International Convention for the Prevention of Pollution from Ships
mbs	Meters below surface
MEFT	Ministry of Environment, Forestry and Tourism
MGO	Marine Gas Oil
mm/a	Millimetres per annum
mm/a	Millimetres per annum
MSDS	Material Safety Data Sheet
MoU	Memorandum of Understanding
NaCl	Sodium chloride
NAMPORT	Namibian Ports Authority
PBL	Planetary Boundary Layer
PM	Particle matter
PPE	Personal Protective Equipment
ppm	Parts per million
SADC	Southern African Development Community
SAH	South Atlantic High
SANS	South African National Standards
SO_2	Sulphur dioxide
SOLAS	Safety of Life at Sea
STS	Ship-to-Ship Transfer
TIBL	Thermal Internal Boundary Layer
WHO	World Health Organization

GLOSSARY OF TERMS

Alternatives - A possible course of action, in place of another, that would meet the same purpose and need but which would avoid or minimize negative impacts or enhance project benefits. These can include alternative locations/sites, routes, layouts, processes, designs, schedules and/or inputs. The "no-go" alternative constitutes the 'without project' option and provides a benchmark against which to evaluate changes; development should result in net benefit to society and should avoid undesirable negative impacts.

Assessment - The process of collecting, organising, analysing, interpreting and communicating information relevant to decision making.

Ballast Water Record Book - Official logbook in which all ballast water operations are recorded in compliance with IMO requirements.

Competent Authority - means a body or person empowered under the local authorities act or Environmental Management Act to enforce the rule of law.

Construction - means the building, erection or modification of a facility, structure or infrastructure that is necessary for the undertaking of an activity, including the modification, alteration, upgrading or decommissioning of such facility, structure or infrastructure.

Cumulative Impacts - in relation to an activity, means the impact of an activity that in itself may not be significant but may become significant when added to the existing and potential impacts eventuating from similar or diverse activities or undertakings in the area.

Environment - As defined in the Environmental Assessment Policy and Environmental Management Act - "land, water and air; all organic and inorganic matter and living organisms as well as biological diversity; the interacting natural systems that include components referred to in sub-paragraphs, the human environment insofar as it represents archaeological, aesthetic, cultural, historic, economic, palaeontological or social values".

Environmental Impact Assessment (EIA) - process of assessment of the effects of a development on the environment.

Environmental Management Plan (EMP) - A working document on environmental and socio-economic mitigation measures, which must be implemented by several responsible parties during all the phases of the proposed project.

Environmental Management System (EMS) - An Environment Management System, or EMS, is a comprehensive approach to managing environmental issues, integrating environment-oriented thinking into every aspect of business management. An EMS ensures environmental considerations are a priority, along with other concerns such as costs, product quality, investments, PR productivity and strategic planning. An EMS generally makes a positive impact on a company's bottom line. It increases efficiency and focuses on customer needs and marketplace conditions, improving both the company's financial and environmental performance. By using an EMS to convert environmental problems into commercial opportunities, companies usually become more competitive.

Evaluation – means the process of ascertaining the relative importance or significance of information, the light of people's values, preference and judgements in order to make a decision.

Hazard - Anything that has the potential to cause damage to life, property and/or the environment. The hazard of a particular material or installation is constant; that is, it would present the same hazard wherever it was present.

IMO D2 Standard - A regulation under the International Maritime Organization's Ballast Water Management Convention that sets limits on the number of viable organisms allowed to be discharged in ballast water. Vessels must treat ballast water to meet this standard before discharge, using approved ballast water management systems to prevent the spread of invasive aquatic species.

Interested and Affected Party (IAP) - any person, group of persons or organisation interested in, or affected by an activity; and any organ of state that may have jurisdiction over any aspect of the activity.

Marine Gas Oil - A type of distillate marine fuel used mainly in ship engines and marine generators.

Mitigate - The implementation of practical measures to reduce adverse impacts.

Proponent (Applicant) - Any person who has submitted or intends to submit an application for an authorisation, as legislated by the Environmental Management Act no. 7 of 2007, to undertake an activity or activities identified as a listed activity or listed activities; or in any other notice published by the Minister or Ministry of Environment, Forestry & Tourism.

Public - Citizens who have diverse cultural, educational, political and socio-economic characteristics. The public is not a homogeneous and unified group of people with a set of agreed common interests and aims. There is no single public. There are a number of publics, some of whom may emerge at any time during the process depending on their particular concerns and the issues involved.

Scoping Process - process of identifying: issues that will be relevant for consideration of the application; the potential environmental impacts of the proposed activity; and alternatives to the proposed activity that are feasible and reasonable.

Significant Effect/Impact - means an impact that by its magnitude, duration, intensity or probability of occurrence may have a notable effect on one or more aspects of the environment.

Stakeholder Engagement - The process of engagement between stakeholders (the Proponent, authorities and IAPs) during the planning, assessment, implementation and/or management of proposals or activities. The level of stakeholder engagement varies depending on the nature of the proposal or activity as well as the level of commitment by stakeholders to the process. Stakeholder engagement can therefore be described by a spectrum or continuum of increasing levels of engagement in the decision-making process. The term is considered to be more appropriate than the term "public participation".

Stakeholders - A sub-group of the public whose interests may be positively or negatively affected by a proposal or activity and/or who are concerned with a proposal or activity and its consequences. The term therefore includes the Proponent, authorities (both the lead authority and other authorities) and all interested and affected parties (IAPs). The principle that environmental consultants and stakeholder engagement practitioners should be independent and unbiased excludes these groups from being considered stakeholders.

Sustainable Development - "Development that meets the needs of the current generation without compromising the ability of future generations to meet their own needs and aspirations" – the definition of the World Commission on Environment and Development (1987). "Improving the quality of human life while living within the carrying capacity of supporting ecosystems" – the definition given in a publication called "Caring for the Earth: A Strategy for Sustainable Living" by the International Union for Conservation of Nature (IUCN), the United Nations Environment Programme and the World Wide Fund for Nature (1991).

1 INTRODUCTION

Geo Pollution Technologies (Pty) Ltd (GPT) was appointed by Maruvo Marine (Pty) Ltd (the Proponent) to undertake an environmental assessment for the proposed marine fuel bunkering service within the Port of Walvis Bay and associated port and anchorage areas (Figure 1-1). The proposed service will involve the ship-to-ship transfer of fuel for the refuelling of seafaring vessels operating within the port and surrounding operational waters. Maruvo Marine will act as an intermediary marine fuel transport and delivery service provider between bulk fuel distributors and receiving vessels, by transporting fuel from the supplier to the receiving vessel by means of a bunker barge. Fuel will be loaded onto the bunker barge through approved supply arrangements, which may include loading within the port and where applicable, from other marine fuel supply vessels. The bunker barge will thereafter transfer fuel to receiving vessels at approved locations within the Port of Walvis Bay and associated anchorage areas. The proposed bunkering service will involve the transport and transfer of Marine Gas Oil (MGO) and Very Low Sulphur Fuel Oil (VLSFO). No fuel blending or mixing will take place as part of the proposed operation.

A detailed project description and commodities list are presented in section 4.

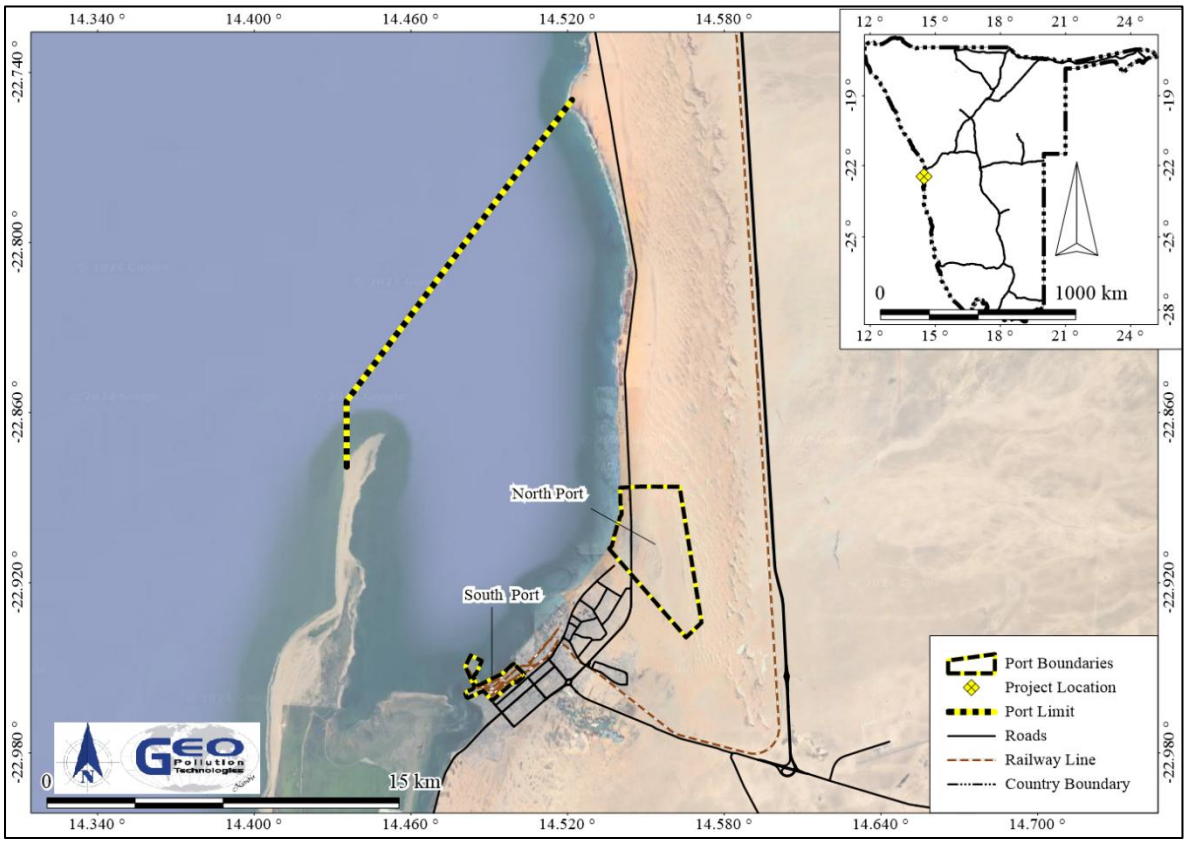

Figure 1-1 Project location

A risk assessment was undertaken to determine the potential impacts of the vessel commissioning, operational and possible decommissioning phases associated with the project, on the environment. The environment being defined in the Environmental Assessment Policy and Environmental Management Act as "land, water and air; all organic and inorganic matter and living organisms as well as biological diversity; the interacting natural systems that include components referred to in sub-paragraphs, the human environment insofar as it represents archaeological, aesthetic, cultural, historic, economic, paleontological or social values".

The environmental assessment was conducted to apply for an environmental clearance certificate in compliance with Namibia's Environmental Management Act (Act No 7 of 2007) (EMA).

Project Justification – The growth of maritime activity in the Port of Walvis Bay, together with Namibia's strategic location along a key west coast shipping route, has created an ongoing demand for marine fuel bunkering services. The proposed project is intended to support this demand through the provision of a controlled and compliant bunkering service within the Port of Walvis Bay and associated anchorage areas. Although the Proponent will not be the first operator to provide marine fuel transfer services in the broader Namibian maritime sector, the proposed service is intended to contribute to the availability and flexibility of bunkering services within the port and surrounding operational waters.

The proposed bunkering service seeks to provide a safe and efficient means of supplying marine fuel to vessels calling at the Port of Walvis Bay and associated anchorage areas. In doing so, the project will support port-based marine logistics and vessel operations, while contributing to the continued development of maritime services in Walvis Bay. The benefits of the project include:

- Support for vessels requiring marine fuel within the Port of Walvis Bay and associated anchorage areas.
- Improved service availability and operational flexibility for the local maritime and port sector.
- Contribution to the efficient functioning of the port and associated marine support services.
- Creation of employment opportunities and associated skills development in the marine services sector.
- Contribution to economic activity in Walvis Bay through support to port-related operations and services.
- Support for the broader development of Namibia's maritime economy.

2 SCOPE

The scope of the environmental assessment is to:

1. Determine the potential environmental impacts emanating from the activities proposed by the Proponent.
2. Identify a range of management actions which could mitigate the potential adverse impacts to acceptable levels.
3. Comply with Namibia's Environmental Management Act (2007).
4. Provide sufficient information to the Ministry of Environment, Forestry and Tourism (MEFT) and related authorities to make an informed decision regarding the proposed bunkering operations, vessel commissioning activities, and possible decommissioning of the project.

3 METHODOLOGY

The following methods were used to investigate the potential impacts on the social and natural environment due to the planned vessel commissioning and operations of the project.

1. Baseline information about the project area and its surroundings was obtained from existing secondary information.
2. As part of the scoping process to determine potential environmental impacts, interested and affected parties (IAPs) were consulted about their views, comments and opinions and these are put forward in this report.
3. Based on gathered information and public and stakeholder consultation, an assessment of potential impacts was conducted and a management plan prepared.

4 PROJECT DESCRIPTION

The Proponent proposes to establish a marine fuel bunkering service within the Port of Walvis Bay and associated port and anchorage areas. The proposed service will involve the ship-to-ship transfer of marine fuel to seafaring vessels requiring refuelling within approved operational areas. The service is intended to support vessel activities within the port and surrounding marine environment by providing a controlled and compliant marine fuel transport and delivery service. The exact operational throughput will depend on market demand, vessel availability and supply arrangements.

4.1 VESSEL COMMISSIONING

The Proponent intends to commission suitable bunkering vessels for the proposed operation. It is anticipated that suitable vessels may be chartered into the operation, although the final fleet composition may depend on operational requirements, market demand and vessel availability at the time of implementation. Vessel commissioning will include all activities necessary to prepare a bunkering vessel for service. This may include mobilisation of the vessel to Walvis Bay, inspection and certification, verification of safety and pollution prevention equipment, crew appointments and training, and the implementation of the required operational, emergency response and environmental management procedures prior to the commencement of bunkering activities.

All vessels used for the bunkering service will be required to comply with the relevant maritime, port, health, safety and environmental requirements applicable to their intended use. Where relevant, this will include compliance with applicable requirements relating to seaworthiness, pollution prevention, ballast water management, spill preparedness, firefighting capability, operational communication systems, and emergency response arrangements.

4.2 PLANNED OPERATIONS

Operations will consist primarily of the transport and ship-to-ship transfer of fuel to receiving vessels at approved operational locations. The proposed service will involve the transfer of MGO and VLSFO. The exact operational throughput will depend on market demand, vessel availability, client requirements and approved supply arrangements. Operational procedures associated with the proposed bunkering service are described below.

4.2.1 Bunker Loading

Bunker loading refers to the taking on of fuel to be transported to client vessels. Two methods of bunker loading may be used.

The first will be bunker loading within the Port of Walvis Bay. The bunker barge or other bunkering vessel will dock in the Port of Walvis Bay according to standard shipping procedures. Spill control measures will be implemented around the fuel loading area in order to contain accidental spills where required. Fuel will be transferred from approved bulk fuel storage or supply facilities within the Port of Walvis Bay to the bunkering vessel at an approved quayside or berthing location. Once the vessel is loaded, the relevant transfer equipment and spill control measures are retrieved and the vessel departs.

A secondary fuel loading method may involve bunker transfer from other marine fuel supply vessels operating in approved areas. The Proponent's vessel will approach and anchor or berth alongside the supplying vessel at a pre-approved location. Prior to fuel transfer, the required safety and spill prevention measures will be implemented to mitigate the risk of marine pollution. Transfer hoses will then be securely connected, and fuel will be pumped from the supplying vessel into the Proponent's vessel under controlled conditions. Upon completion of the transfer, hoses will be disconnected, the relevant equipment retrieved, and the receiving vessel will depart the site.

All operations will be conducted in accordance with applicable bunkering procedures, MARPOL Annex I requirements, and relevant Namibian maritime safety and environmental regulations. Emergency response protocols and spill mitigation measures will be in place throughout the operation to ensure minimal environmental risk.

4.2.2 Ship-to-ship Bunkering

Once an order for fuel is received by the Proponent, the bunkering vessel will sail to the predetermined location. The same procedures as for bunker loading will be followed, including applicable bunkering procedures, adherence to MARPOL Annex I requirements, ISGOTT, and relevant Namibian maritime safety and environmental regulations. This includes secure mooring using fenders and mooring lines to ensure safe positioning

throughout the operation, controlled pumping rates, spill prevention measures, and real-time communication between vessels to ensure safe and efficient fuel transfer.

Pumping of fuel at a controlled flow rate and pressure minimises the risk of spills, overfilling, or hose failure. Flow meters and visual monitoring will be used to track transfer volumes and detect any irregularities. Upon completion of the transfer, hoses will be purged and disconnected, and all mooring equipment retrieved. The bunkering vessel will then return to port or proceed to the next operational area. All required documentation, including fuel volumes, transfer logs, and safety checklists, will be completed and signed by both parties.

All operations will adhere to strict safety and environmental protocols. Spill prevention measures will include the use of drip trays, absorbents, containment equipment, and emergency shut-off systems. No blending or mixing will take place on board the bunkering vessel.

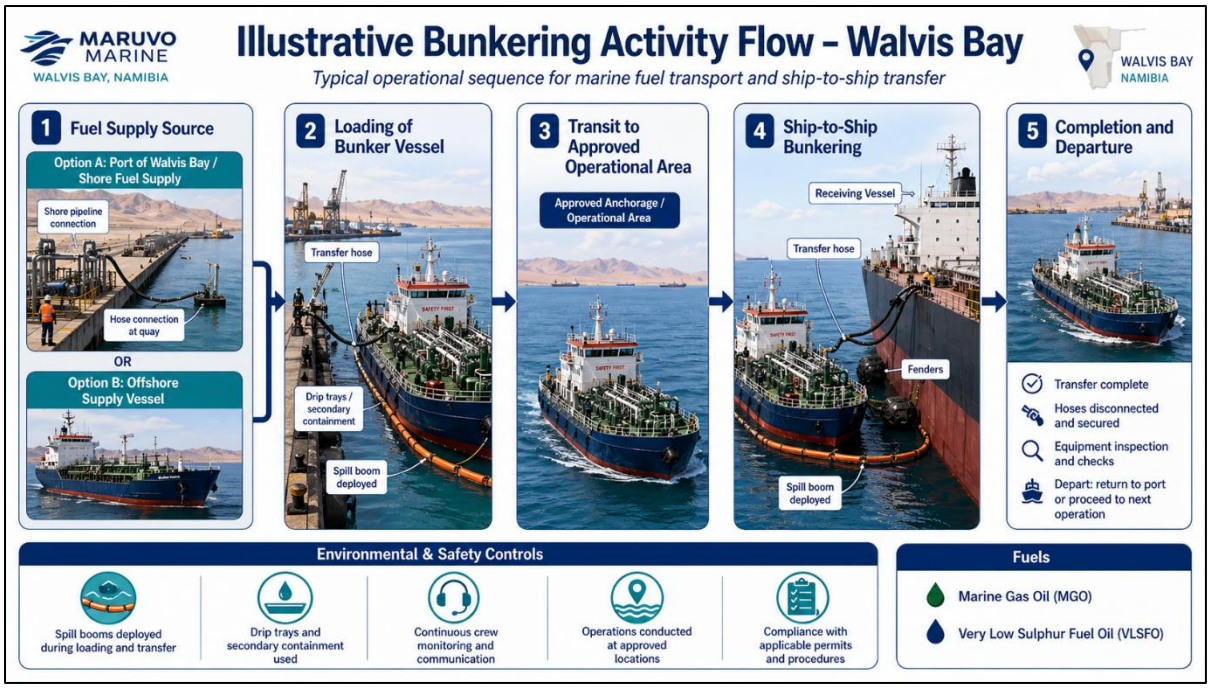

Figure 4-1 Illustrative representation of the proposed bunkering operations (OpenAI, 2026)

4.2.3 General

As the proposed project will make use of existing port and marine fuel supply infrastructure, no construction activities are anticipated for the proposed operation. The project will involve the commissioning and operation of one or more suitable bunkering vessels and the use of approved supply arrangements within the Port of Walvis Bay and associated anchorage areas. The Proponent will be required to comply with applicable industry standards, port requirements, and environmental management measures in order to minimise the risk of pollution and protect the environment.

Any pollution incidents will be reported to the relevant authorities and responded to in accordance with the applicable port, maritime and national spill response requirements, including the National Marine Pollution Contingency Plan, relevant IMO conventions and guidelines, and the operational emergency response procedures applicable to the bunkering service.

5 ALTERNATIVES TO THE PROPOSED PROJECT

Due to the defined scope of the project, its targeted service area, and the logistical arrangements already in place with Namibian fuel storage and supply systems, no alternative locations, technologies, or

delivery mechanisms were considered applicable or feasible. The proposed project design is therefore regarded as the most suitable approach to meet the intended operational and environmental objectives.

6 ADMINISTRATIVE, LEGAL AND POLICY REQUIREMENTS

To protect the environment and achieve sustainable development, all projects, plans, programmes and policies deemed to have adverse impacts on the environment require an environmental assessment, as per the Namibian legislation. The legislation and standards provided Table 6-1 to Table 6-4 govern the environmental assessment process in Namibia and/or are relevant to the facility.

Table 6-1 Namibian law applicable to the facility and related operations

Law	Key Aspects
The Namibian Constitution	♦ Promotes the welfare of people ♦ Incorporates a high level of environmental protection ♦ Incorporates international agreements as part of Namibian law
Environmental Management Act Act No. 7 of 2007, Government Notice No. 232 of 2007	♦ Defines the environment ♦ Promotes sustainable management of the environment and the use of natural resources ♦ Provides a process of assessment and control of activities with possible significant effects on the environment
Environmental Management Act Regulations Government Notice No. 28-30 of 2012	♦ Commencement of the Environmental Management Act ♦ List activities that require an environmental clearance certificate ♦ Provides Environmental Impact Assessment Regulations
Namibia Ports Authority Act Act No. 2 of 1994, Government Notice No. 30	♦ Provides for the establishment of the Namibian Ports Authority to undertake the management and control of ports ♦ Outlines the functions of the Namibian Ports Authority among which is the protection of the environment
Petroleum Products and Energy Act Act No. 13 of 1990, Government Notice No. 45 of 1990	♦ Regulates petroleum industry ♦ Makes provision for impact assessment ♦ Petroleum Products Regulations (Government Notice No. 155 of 2000) ♦ Prescribes South African National Standards (SANS) or equivalents for construction, operation and decommissioning of petroleum facilities (refer to Government Notice No. 21 of 2002)
Territorial Sea and Exclusive Economic Zone of Namibia Act Act No. 3 of 1990, Government Notice No. 28	♦ Determine and define the territorial sea, internal waters, contiguous zone, exclusive economic zone and continental shelf of Namibia
Marine Resources Act Act No. 27 of 2000, Government Notice No. 292	♦ Provides for the conservation of the marine ecosystem and the responsible administration, conservation, protection and promotion of marine resources on a sustainable basis
Dumping At Sea Control Act Act No. 73 of 1980, Government Notice No. 1149	♦ Provide for the control of dumping of substances in the sea
Water Resources Management Act	♦ Provides for management, protection, development, use and conservation of water resources

Law	Key Aspects
Act No. 11 of 2013, Government Notice No. 332 of 2013	• Prevention of water pollution and assignment of liability
Marine Traffic Act Act No. 2 of 1981, Government Notice No. 282	• Regulate marine traffic in Namibia
Prevention and Combating of Pollution of the Sea by Oil Act Act No. 6 of 1981, Government Notice No. 342	• Provides for the prevention of pollution of the sea where oil is being or is likely to be discharged
Prevention and Combating of Pollution of the Sea by Oil Amendment Act Act No. 24 of 1991, Government Notice No. 150	• Amends the Prevention and Combating of Pollution of the Sea by Oil Act of 1981 to be more relevant to Namibia after independence
Local Authorities Act Act No. 23 of 1992, Government Notice No. 116 of 1992	• Defines the powers, duties and functions of local authority councils
Public and Environmental Health Act Act No. 1 of 2015, Government Notice No. 86 of 2015	• Provides a framework for a structured more uniform public and environmental health system, and for incidental matters • Deals with Integrated Waste Management including waste collection disposal and recycling; waste generation and storage; and sanitation
Labour Act Act No 11 of 2007, Government Notice No. 236 of 2007	• Provides for Labour Law and the protection and safety of employees • Labour Act, 1992: Regulations relating to the health and safety of employees at work (Government Notice No. 156 of 1997)
Atmospheric Pollution Prevention Ordinance Ordinance No. 11 of 1976	• Governs the control of noxious or offensive gases • Prohibits scheduled process without a registration certificate in a controlled area • Requires best practical means for preventing or reducing the escape into the atmosphere of noxious or offensive gases produced by the scheduled process
Hazardous Substances Ordinance Ordinance No. 14 of 1974	• Applies to the manufacture, sale, use, disposal and dumping of hazardous substances as well as their import and export • Aims to prevent hazardous substances from causing injury, ill-health or the death of human beings
Marine Notice No. 02 of 2012 **Ministry of Works and Transport**	• Provides guidance and for the transfer of oil within the prohibited area of the Namibian waters
Marine Notice No. 04 of 2018 **Ministry of Works and Transport**	• Provides guidance on shipboard garbage management requirements in Namibia, in terms of the International Convention for the Prevention of Pollution from Ships (MARPOL)
Pollution Control and Waste Management Bill (draft document)	• Not in force yet • Provides for prevention and control of pollution and waste • Provides for procedures to be followed for licence applications

Law	Key Aspects
Foreign Investment Act 27 of 1990 (as amended by Foreign Investment Amendment Act 24 of 1993)	♦ Provides for the promotion of foreign investment in Namibia ♦ Considers environmental impacts associated with foreign investments
Draft Wetland Policy of 2003	♦ Considering the proximity of the Walvis Bay Lagoon, a RAMSAR site, the Wetland Policy of 2003 is of importance and includes protection and conservation of wetlands and ecosystems
National Marine Pollution Contingency Plan of 2017	♦ Coordinated and integrated national system for dealing with oil and other spills in Namibian waters

Table 6-2 Municipal by-laws, guidelines and regulations

Municipal By-laws, Guidelines or Regulations	Key Aspects
Integrated Urban Spatial Development Framework for Walvis Bay	♦ Overall vision to transform Walvis Bay to being the primary industrial city in Namibia ♦ Aims to ensure that appropriate levels of environmental management are enforced for all developments in Walvis Bay
Integrated Environmental Policy of Walvis Bay (Agenda 21 Project)	♦ Indicates the directions that the Municipality of Walvis Bay will move towards in the forthcoming years to fulfil its responsibilities to manage the environment of Walvis Bay together with the town's residents and institutions ♦ Strong focus on conservation and protection of environment
Municipal By-law 19 and 20 on Effluents Entering Sewers	♦ Regulates the discharge of effluent into sewers and prohibits the introduction of certain wastes or products including steam into the sewers system
Town Planning Scheme No. 35	♦ Manages and regulates development related to land use ♦ Proposes and identifies areas for specific future land use

Table 6-3 Relevant multilateral environmental agreements

Agreement	Key Aspects
Benguela Current Convention of 2013	♦ The Convention is a formal treaty between the governments of Angola, Namibia and South Africa that sets out the countries' intention "to promote a coordinated regional approach to the long-term conservation, protection, rehabilitation, enhancement and sustainable use of the Benguela Current Large Marine Ecosystem, to provide economic, environmental and social benefits."
Convention on Biological Diversity (CBD)	♦ Primary goal is the conservation of biodiversity ♦ Prescribes the precautionary principle ♦ Parties to the convention are obliged to: o Establish a network of protected areas; o Create buffer areas adjacent to these protected areas using environmentally sound and o sustainable development practices; and o Rehabilitate degraded habitats and populations of species
Convention on Biological Diversity, Rio de Janeiro, 1992	♦ Under article 14 of The Convention, EIAs must be conducted for projects that may negatively affect biological diversity

The Convention on Wetlands of International Importance especially as Waterfowl Habitat (referred as the RAMSAR Convention)	♦ It is a framework for international cooperation in the conservation and wise use of wetlands and their resources ♦ Recognises the Walvis Bay Nature Reserve – a tidal lagoon consisting of Pelican Point, adjacent intertidal areas, sandbars serving as roosting sites and mudflats exposed during low tide (12,600 ha) as a Wetland of International Importance
Stockholm Declaration on the Human Environment, Stockholm 1972	♦ Recognises the need for a common outlook and common principles to inspire and guide the people of the world in the preservation and enhancement of the human environment
1985 Vienna Convention for the Protection of the Ozone Layer	♦ Aims to protect human health and the environment against adverse effects from modification of the Ozone Layer are considered ♦ Adopted to regulate levels of greenhouse gas concentration in the atmosphere
United Nations Framework Convention on Climate Change (UNFCCC)	♦ The Convention recognises that developing countries should be accorded appropriate assistance to enable them to fulfil the terms of the Convention
Abidjan Convention of 1981	♦ The Convention for Cooperation in the Protection, Management and Development of the Marine and Coastal Environment of the Atlantic Coast of the West, Central and Southern Africa Region ♦ Provides an overarching legal framework for all marine-related programmes in West, Central and Southern Africa
Convention on the International Maritime Organization (IMO)	♦ Regulates shipping with respect to, among others, maritime safety and marine environmental protection ♦ Key IMO conventions include International Convention for the Safety of Life at Sea and International Convention for the Prevention of Pollution from Ships and others as discussed below ♦ See www.imo.org for a complete account of all the conventions and treaties
International Convention for the Safety of Life at Sea (SOLAS 1974)	♦ With its origins in 1914, it is today regarded as the most important international treaty related to the safety of merchant ships ♦ Among others deals with fire, life-saving, radio communications, safety and navigation, safe operations, etc
International Convention for the Prevention of Pollution from Ships (MARPOL 1973)	♦ Dealing with the prevention of pollution of the sea by oil, sewage and garbage from ships ♦ Annex I –Regulations for the Prevention of Pollution by Oil ♦ Annex II –Regulations for the Control of Pollution by Noxious Liquid Substances in Bulk ♦ Annex III –Prevention of Pollution by Harmful Substances Carried by Sea in Packaged Form ♦ Annex IV –Regulations for the Prevention of Pollution by Sewage from Ships ♦ Annex V –Prevention of Pollution by Garbage from Ships ♦ Annex VI –Regulations for the Prevention of Air Pollution from Ships

International Convention for the Control and Management of Ships' Ballast Water and Sediments (BWM 2004)	♦ Aims to prevent the spread of harmful aquatic organisms from one region to another, by establishing standards and procedures for the management and control of ships' ballast water and sediments
Convention on the International Regulations for Preventing Collisions at Sea (COLREG 1972)	♦ Among others, provides rules related to navigation to be followed by vessels at sea to prevent collisions
International Convention on Oil Pollution Preparedness, Response and Cooperation (OPRC 1990)	♦ International maritime convention establishing measures for dealing with marine oil pollution incidents nationally and in co-operation with other countries

Table 6-4 Standards or codes of practise

Standard or Code of Practise	Key Aspects
International Dangerous Goods Code (IMDG Version 10 of 2010)	♦ For handling and storage of dangerous cargo
Various Seafaring Codes and Standards	♦ The transport of cargo at sea is regulated by numerous codes and standards. Key to the Proponent are those pertaining to the loading and transport of cargo like the International Convention for the Safety of Life at Sea (SOLAS), 1974 which has the regulations: o Chapter VI - Carriage of cargoes o Chapter VII - Carriage of dangerous goods
Namport Safety, Health, Environment and Quality Policy	♦ Provides guidance to all members responsible for managing Safety, Health, Environment and Quality related aspects. ♦ Ensures compliance with all applicable legal SHEQ and related requirements

The project is listed as an activity requiring an environmental clearance certificate as per the following points from:

Section 9 of Government Notice No. 29 of 2012: Hazardous Substance Treatment, Handling and Storage

♦ 9.1 "The manufacturing, storage, handling or processing of a hazardous substance defined in the Hazardous Substances Ordinance, 1974."

7 ENVIRONMENTAL CHARACTERISTICS

This section lists pertinent environmental characteristics of the study area and provides a statement on the potential environmental impacts on each.

7.1 LOCALITY AND SURROUNDING LAND USE

The proposed bunkering operations are intended to take place within the Port of Walvis Bay and associated anchorage areas in the Atlantic Ocean. The Port of Walvis Bay is Namibia's main commercial port and forms part of a strategically important maritime and industrial hub on the central coast of Namibia. The port and surrounding operational areas are characterised by existing port, shipping, fishing, logistics, marine engineering, fuel storage and other industrial activities. The proposed bunkering service is therefore intended to take place within an already developed and operational maritime environment.

Walvis Bay is located along Namibia's central coastline, which forms part of the Benguela Current Large Marine Ecosystem (BCLME). The Benguela system is recognised as one of the world's major coastal upwelling systems and supports high levels of marine productivity, including important commercial fisheries and a range of marine fauna. The coastal and marine

environment in proximity to the port is environmentally sensitive, notwithstanding the industrial nature of the port itself. The proposed operational area must therefore be considered in the context of both its existing port land use and the sensitivity of the surrounding marine environment.

Within the Port of Walvis Bay, land use is dominated by port and industrial activities, including cargo handling, vessel berthing, ship repair, fishing industry activities, fuel storage and transfer, and associated marine services. Nearby anchorage areas are similarly used for vessel waiting, marine operations and other port-related activities. The proposed bunkering service will make use of this existing working port environment and associated approved fuel supply arrangements.

Figure 7-1 Port of Walvis Bay operational areas

Implications and Impacts

The proposed bunkering operations will take place within an existing port and marine operational environment and are therefore considered compatible with the surrounding land and marine uses. The project will make use of existing port and marine fuel supply infrastructure and approved bunkering procedures, thereby limiting the extent of new disturbance associated with the proposed activity. Potential impacts on the surrounding environment will be linked primarily to operational risks.

7.2 CLIMATE

Namibia's climate is dominated by dry conditions for most of the year and particularly so in the west. The location of Namibia with respect to the Intertropical Convergence Zone, Subtropical High Pressure Zone and Temperate Zone is what determines the climate, with the Subtropical High Pressure Zone being the major contributor to the dry conditions (Atlas of Namibia Project, 2002; Bryant, 2010), see Figure 7-2.

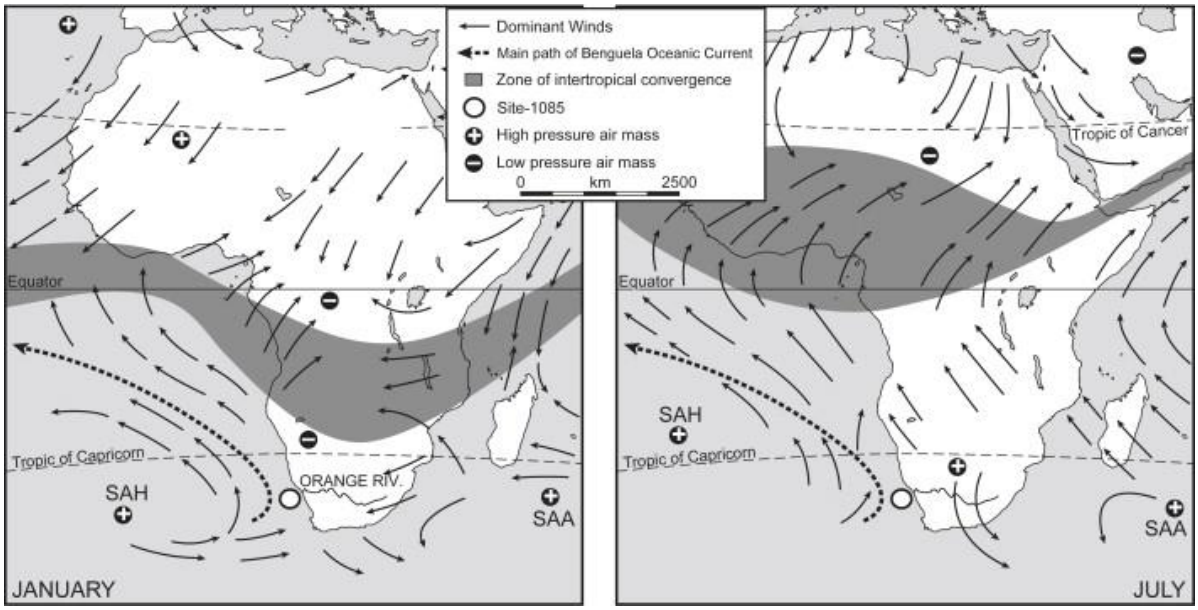

Figure 7-2 Map indicating the Intertropical Convergence Zone, Subtropical High Pressure Zone (SAH+), Benguela Current and Temperate Zone south of Tropic of Capricorn (not indicated) (from: http://www.meteoweb.eu)

Precipitation over Namibia is mainly controlled by the South Atlantic High (SAH), a high pressure cell (anticyclone) situated west of Namibia in the Subtropical High Pressure Zone. The SAH shifts during the year and is at higher latitudes in winter and lower latitudes in summer. In winter, as a result of being situated more north, the high pressure cell pushes any moisture originating from the Intertropical Convergence Zone northwards, preventing rain over Namibia. In summer, because the high pressure cell moves further south, and has less of an effect on the Intertropical Convergence Zone, moist air reaches Namibia, resulting in summer rains.

Studies indicate the presence of a thermal inversion layer along the coast. Originally this was thought to be at approximately 500 mamsl (Taljaard and Schumann 1940), but recent studies indicate it as low as 200 mamsl (Patricola and Chang, 2017; Corbett, 2018). A marine atmospheric boundary layer (MBL) exists offshore of the coastline that thins from more than 500 mamsl to 200 mamsl as it nears the coast (Figure 7-3). The MBL is a layer of cool, well-mixed, stable air that is capped by a thermal inversion (Patricola and Chang, 2016; Corbett 2018). This thermal layer or inversion layer will prevent the escape of pollutants such as smoke higher into the atmosphere. The MBL however contribute to high velocity wind speeds by funnelling the winds created by the SAH, resulting in what is referred to as the Benguela Low-Level Coastal Jet (Figure 7-3). Since the MBL overlap partially with the coastal plain, the wind generated by the Benguela Low-Level Coastal Jet also reaches inland, but diminishes relatively quickly further inland.

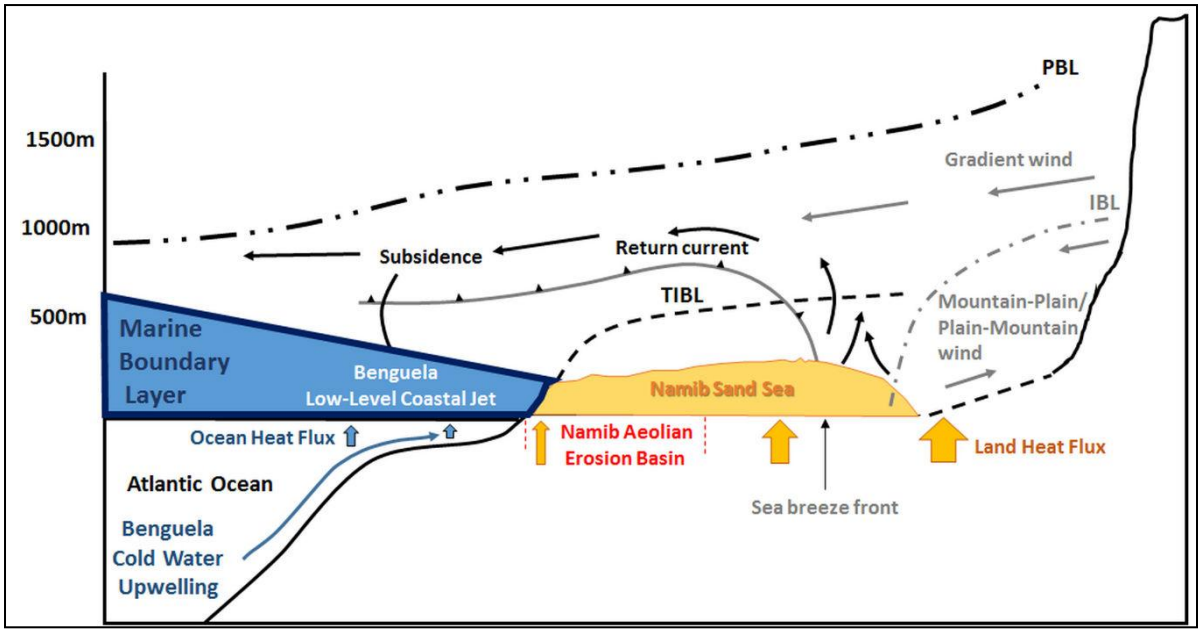

Figure 7-3 Marine atmospheric boundary layer (from: Corbett, 2018)

The climatic conditions on the central Namibian coast, and inland thereof (coastal plains), are strongly influenced by the cold Benguela Current, the SAH and the relatively flat coastal plains that are separated from the central highlands by a steep escarpment.

The anticlockwise circulation of the high pressure SAH and the action of the earth's Coriolis force results in strong southerly (longshore) winds blowing northwards up the coastline of Namibia (Bryant, 2010; Corbett, 2018). This longshore wind is responsible for upwelling of the cold, deep waters of the Benguela Current. As a result of the temperature difference between the cold surface water of the Benguela Current and the warm coastal plains, the southerly wind is diverted to a south south-westerly to south-westerly wind along the coast.

The winds are strongest in early to mid-summer (September to January) when the SAH is at its strongest and most persistent, and the temperature difference between the sea and the desert plains are at its greatest. Wind speeds then occasionally exceed 32 km/hr and usually peaks late morning to early afternoon. In winter, the SAH loses strength and the southerly to south-westerly winds are at their weakest. Winter winds do not have enough strength to reach far inland. Autumn to winter conditions do however promote the formation of east wind conditions (berg winds) that can reach speeds of more than 50 km/hr and transport a lot of sand. East winds occur when the inland plateau is cold with a localised high pressure cell, while a low pressure system is present at the coast. The high pressure cell forces air off the escarpment and as the air descents, it warms adiabatically as well as create a low pressure system due to the vertical expansion of the air column. The warm air flows toward the coastal low and as it passes over the Namib plains, it heats up even further. The wind manifests itself as very strong, warm and dry wind during the mornings to early afternoon, but dissipate in the late afternoon.

Throughout the year the prevailing night time regional wind is a weak easterly wind. This results when the mainland cools to below the temperature of the coastal water. This results in a coastal low versus an onshore high pressure system with first no wind in the early evening, when temperatures between water and land is similar, and then weak easterly winds as the temperature difference increase.

Implications and Impacts

Strong winds may lead to rough seas with safety risks for the crew of the bunkering and receiving vessels. Strong winds and swells may disrupt or prohibit bunkering.

Appropriate containment and spill management measures will be in place to prevent the release of hydrocarbons into the marine environment during adverse weather conditions. All

infrastructure, both onshore and offshore, will be designed and maintained to withstand prevailing wind and weather conditions, minimising the risk of damage and environmental incidents.

7.3 CORROSIVE ENVIRONMENT

The Namibian coastline is a very corrosive environment, which may be attributed to the frequent salt-laden fog, periodic winds and abundance of aggressive salts (dominantly NaCl and sulphates) in the soil. The periodic release of hydrogen sulphide (H_2S) from the ocean is expected to contribute to corrosion. See Figure 7-4 for corrosion comparison data of Walvis Bay with other centres in South Africa.

The combination of high moisture and salt content of the surface soil can lead to rapid deterioration of subsurface metal (e.g. pipelines) and concrete structures. Chemical weathering of concrete structures due to the abundant salts in the soil is a concern.

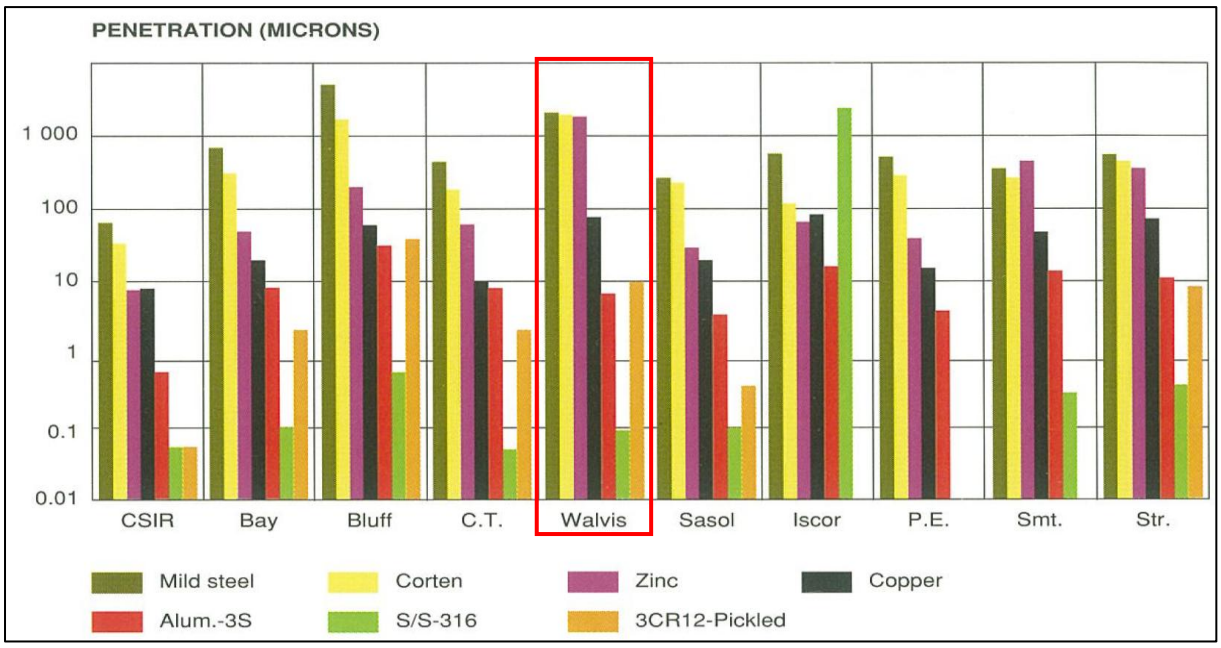

Figure 7-4 Twenty year corrosion exposure results in southern African towns (Callaghan 1991)

Implications and Impacts

Corrosion levels may be high and must be kept in mind when planning the maintenance activities on-board the vessel and its infrastructure as well as for onshore infrastructure and pipelines.

7.4 THE MARINE AND COASTAL ENVIRONMENT

The marine environment of Walvis Bay forms part of the Benguela Current system, a biologically rich and economically important oceanographic feature of the South Atlantic. The current carries cold, nutrient-rich water northward along the west coast of southern Africa and supports high levels of primary productivity and diverse marine life. Surface water movement is driven largely by the dominant southerly winds (see section 7.2) and is deflected westwards by the Coriolis force. This results in wind-induced coastal upwelling, whereby cooler, nutrient-rich water rises to the surface as nearshore surface water moves offshore. This process supports phytoplankton growth and forms the basis of the marine food web. Upwelling is strongest where the continental shelf is narrow and wind conditions are intensified.

The Walvis Bay coastal and marine environment is ecologically important despite the industrial nature of the port. The area supports marine productivity, fisheries resources, and a variety of marine fauna, while also being associated with sensitive coastal habitats. Of particular importance is the Walvis Bay Lagoon and adjacent coastal wetland environment, which support resident and migratory bird species and are regarded as environmentally sensitive areas. Semi-

enclosed coastal and marine environments are generally more vulnerable to hydrocarbon pollution due to reduced flushing and the potential for pollutants to accumulate or persist for longer periods. The most important of these are presented in Figure 7-5 and Table 7-1.

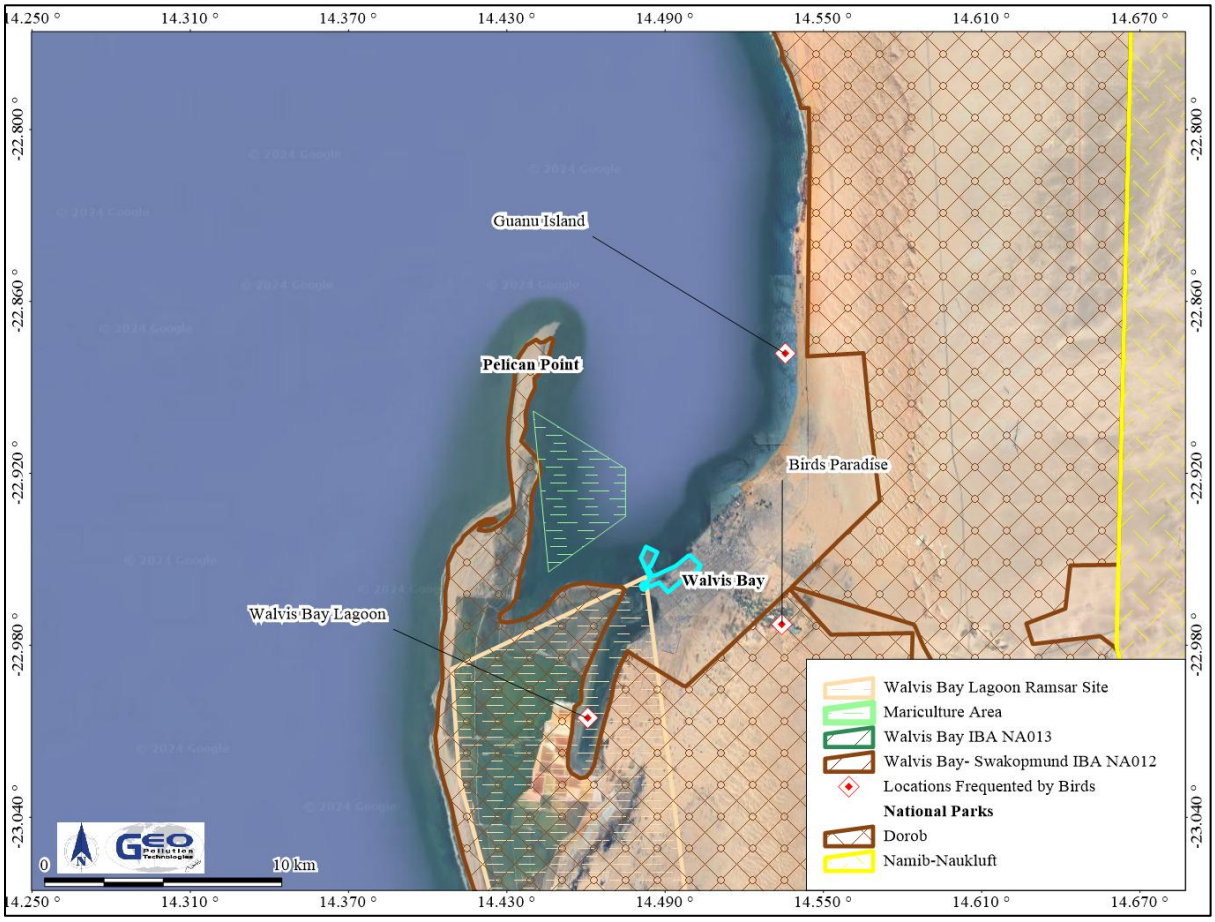

Figure 7-5 Protected and sensitive areas

The Port of Walvis Bay and associated anchorage areas are, however, existing working maritime environments that already accommodate shipping, fishing, cargo handling, marine services and fuel-related activities. The proposed bunkering operation will therefore take place within an established port and marine operational setting. Even so, the sensitivity of the surrounding marine and coastal environment remains an important consideration, particularly in relation to accidental spills, operational discharges, vessel movements and associated disturbance.

Implications and Impacts

The proposed bunkering operations will take place within an existing port and marine operational environment, but in proximity to a sensitive coastal and marine setting. Fuel spills or other pollution incidents therefore have the potential to affect water quality, marine biota, fisheries resources, seabirds and sensitive wetland habitats such as the Walvis Bay Lagoon. Given the ecological and economic importance of the surrounding marine environment, any degradation could undermine both biodiversity and the economic benefits derived from marine resources, making strict operational controls essential.

Table 7-1 Key coastal biodiversity areas in the proximity of Walvis Bay

Site	Key Ecological Values & Key Species	Protection Status / Legal Instruments	Responsible Authority / Managers	Main Threats / Management Gaps
Walvis Bay Lagoon and intertidal mudflats	Highly important wetland habitat with intertidal mudflats, shallow lagoon areas and sandbanks used by flamingos, Palearctic waders, terns, gulls, pelicans and other waterbirds. The Walvis Bay KBA regularly supports over 100,000 birds in summer and about 50,000 in winter.	Ramsar Site; confirmed Key Biodiversity Area (KBA); part of the wider Namib Flyway EBSA.	MEFT, Municipality of Walvis Bay, Namport where port interface is relevant, and conservation stakeholders.	Port and industrial expansion, hydrocarbon pollution, sedimentation, dredging plumes, light and aircraft disturbance, vessel activity, wastewater/runoff, and cumulative development pressure.
Walvis Bay Saltworks and evaporation ponds	Artificial but important shallow saline habitat. The evaporation ponds support flamingos, waders and other waterbirds, and the artificial wetland section can support more than half of the birds in the wetland.	Included in the Walvis Bay KBA/Ramsar wetland system. Not a natural wetland, but functionally important for bird conservation.	Private saltworks operator, with oversight by MEFT, Municipality of Walvis Bay and relevant water/environmental authorities.	Changes in water levels and salinity, disturbance, industrial expansion, hydrocarbon contamination, poor runoff control, and changes to pond management affecting bird habitat.
Bird feeding and roosting areas associated with the lagoon and saltworks	Important feeding and roosting habitat for Greater and Lesser Flamingos, Chestnut-banded Plovers, African Oystercatchers, avocets, sandpipers, turnstones, terns, gulls and pelicans. Walvis Bay is especially important for Palearctic waders and flamingos.	Ramsar Site; KBA; part of Namib Flyway EBSA. The EBSA recognises Walvis Bay and Sandwich Harbour as key refuelling and roosting habitats for migratory waterbirds.	MEFT, Municipality of Walvis Bay, Namport, saltworks operators and bird conservation groups.	Disturbance from people, dogs, vehicles, boats and low-flying aircraft; oiling; sediment deposition; changes in water level/salinity; light and noise disturbance.
Pelican Point sand spit and Cape Fur Seal colony	Pelican Point shelters Walvis Bay and supports shoreline, sandbar and seal haul-out/breeding habitat. The Namib Flyway EBSA identifies Pelican Point as one of four Cape Fur Seal breeding colonies in the area.	Part of the Walvis Bay ecological system and Namib Flyway EBSA; overlaps with the wider Ramsar/KBA context, but marine protection is not equivalent to a formal MPA.	MEFT, Namport where port activities are relevant, marine authorities, tourism operators and conservation stakeholders.	Vessel disturbance, underwater noise, tourism pressure, oil spills, discarded fishing gear, plastics, aircraft disturbance and cumulative harbour/anchorage activity.
Seawater intakes for fish factories,	Sensitive water-quality receptors dependent on clean nearshore seawater. Intakes are important because turbidity,	Not conservation areas, but should be treated as operationally sensitive receptors under EIAs,	Intake owners/operators, fish-processing facilities, saltworks/mariculture	Dredging plumes, suspended solids, oil sheen, hydrocarbon

Site	Key Ecological Values & Key Species	Protection Status / Legal Instruments	Responsible Authority / Managers	Main Threats / Management Gaps
saltworks and mariculture users	suspended solids, oil sheen or contamination can affect processing water, oysters, operational continuity and product quality. Varoius previous marine related ESIAs in the area specifically assessed potential impacts on Walvis Bay Salt Holdings, oyster operations and seawater intakes.	EMPs, ECC conditions, water-quality monitoring plans and spill response plans.	operators, Namport where relevant, MEFT and local authorities.	contamination, low oxygen events, harmful algal events, blocked filters/intake screens and insufficient real-time water-quality monitoring.
Mariculture areas / oyster and aquaculture operations	Mariculture areas support oyster and other aquaculture activities that are directly dependent on good water quality. Walvis Bay mariculture development areas are located between Walvis Bay town and Aphrodite Beach, and sea-based oyster operations have been practised in Namport-designated aquaculture parks.	Regulated under the Aquaculture Act, 2002, and the Environmental Management Act, 2007, where listed activities require environmental clearance. The Walvis Bay mariculture EMP identifies water quality and water availability as key management aspects.	Ministry responsible for fisheries/aquaculture, Walvis Bay Municipality, Namport, MEFT, and individual operators.	Water-quality deterioration, turbidity, hydrocarbon contamination, wastewater, harmful algal blooms, low oxygen/sulphur events, biosecurity risks, waste and poor operational monitoring.
Rocky shores north of Walvis Bay, including Caution Reef / Patrysberg	Mixed sandy and rocky shoreline with high invertebrate productivity, kelp wrack microhabitats and important shorebird feeding areas. The 30-km Walvis Bay–Swakopmund KBA includes isolated rocky outcrops and Caution Reef, with very high shorebird densities.	Confirmed KBA; partly protected, with approximately 69% protected-area coverage recorded for the KBA.	MEFT, Dorob National Park management, local authorities and tourism/recreation managers.	Off-road driving, trampling, dogs, disturbance by people, fishing pressure, litter, oil residues, bilge/scum pollution and coastal development.
Damara Tern breeding areas at Caution Reef	Important breeding area for Damara Tern, with breeding mainly from October to February. The KBA notes that densities at Caution Reef have exceeded 120 nesting pairs within a 2 km² study area.	Confirmed KBA; breeding area protected through site-level controls such as barriers and visitor interpretation, although continued enforcement is required.	MEFT, Dorob National Park management, local authorities and conservation groups.	Off-road vehicles, dogs, visitors, construction near breeding areas, lighting, predators attracted by waste, and development pressure near Caution Reef plains.
Bird Rock / Guano Island platform	Artificial offshore guano platform between Walvis Bay and Swakopmund used by large numbers of seabirds,	Artificial structure within the wider 30-km Walvis–Swakopmund coastal KBA	Private owner/operator, with oversight from relevant environmental,	Disturbance from guano harvesting, structural damage from storms,

Site	Key Ecological Values & Key Species	Protection Status / Legal Instruments	Responsible Authority / Managers	Main Threats / Management Gaps
	especially Cape Cormorants, with pelicans and other coastal birds also associated with the platform. The 30-km beach KBA notes large cormorant numbers using the artificial guano platform at the southern end of the IBA.	context; not a standard protected area or MPA.	fisheries and local authorities.	vessel disturbance, disease risk, prey availability changes and cumulative disturbance along the coast.
Nearshore marine waters of Walvis Bay / Namib Flyway inshore zone	Productive Benguela-influenced nearshore waters supporting seabirds, shorebirds, waterbirds, seals, dolphins, turtles and fish nursery areas. The Namib Flyway EBSA includes key spawning and nursery areas for fish species such as sardine and anchovy.	Adopted EBSA; partly protected through adjacent national parks to the low-water mark and fisheries management measures, but the marine component is not fully protected as an MPA.	MEFT, Ministry responsible for fisheries, Namport, maritime authorities and local authorities.	Hydrocarbon spills, vessel traffic, underwater noise, ballast/bilge discharge, seabed disturbance, industrial pollution, port expansion and cumulative marine traffic.
Kuiseb Lagoon Coast / Kuiseb delta and coastal-dune interface	Transitional ecological zone linking the Kuiseb delta, lagoon coast, desert margin, intertidal areas and nearshore environment. The Namib Flyway EBSA identifies Kuiseb Lagoon Coast and Kuiseb Mixed Shore as endangered habitat types.	Part of the Walvis Bay KBA / Namib Flyway EBSA context; some areas overlap broader coastal conservation zoning, but protection is fragmented.	MEFT, Municipality of Walvis Bay, Namport where applicable, and land managers.	Off-road driving, sand movement into lagoon areas, linear infrastructure, disturbance to vegetation and dunes, groundwater changes, unmanaged access routes and cumulative development pressure.

7.5 TYPICAL FATE OF SPILLED OIL

A number of physical and chemical processes affect oil spilled into the marine environment, influencing both its persistence and eventual removal from the sea surface. The fate of the spilled oil is determined by several factors, including the volume and type of oil released, its initial physical and chemical properties, prevailing sea and weather conditions, and whether the oil remains offshore or reaches the shoreline.

Weathering processes begin immediately after the spill and can lead to either the natural removal of oil or its transformation into more persistent forms. Processes such as spreading, evaporation, dispersion, dissolution, and sedimentation typically act to reduce the presence of oil on the sea surface, especially in the early stages of a spill. In contrast, the formation of water-in-oil emulsions ("mousse") and the associated increase in viscosity enhance the oil's resistance to natural breakdown, increasing its persistence in the marine environment.

Over time, long-term processes such as oxidation, sedimentation, and particularly biodegradation become the dominant mechanisms responsible for the eventual assimilation of the oil into the environment. The updated National Marine Pollution Contingency Plan (2022) emphasises the importance of understanding these natural processes in conjunction with operational and strategic response measures, to minimise ecological and socio-economic impacts following a marine pollution event.

Figure 7-6 and Figure 7-7 illustrate the progression and relative significance of the various weathering processes acting on spilled oil over time, from the initial release through to long-term environmental recovery.

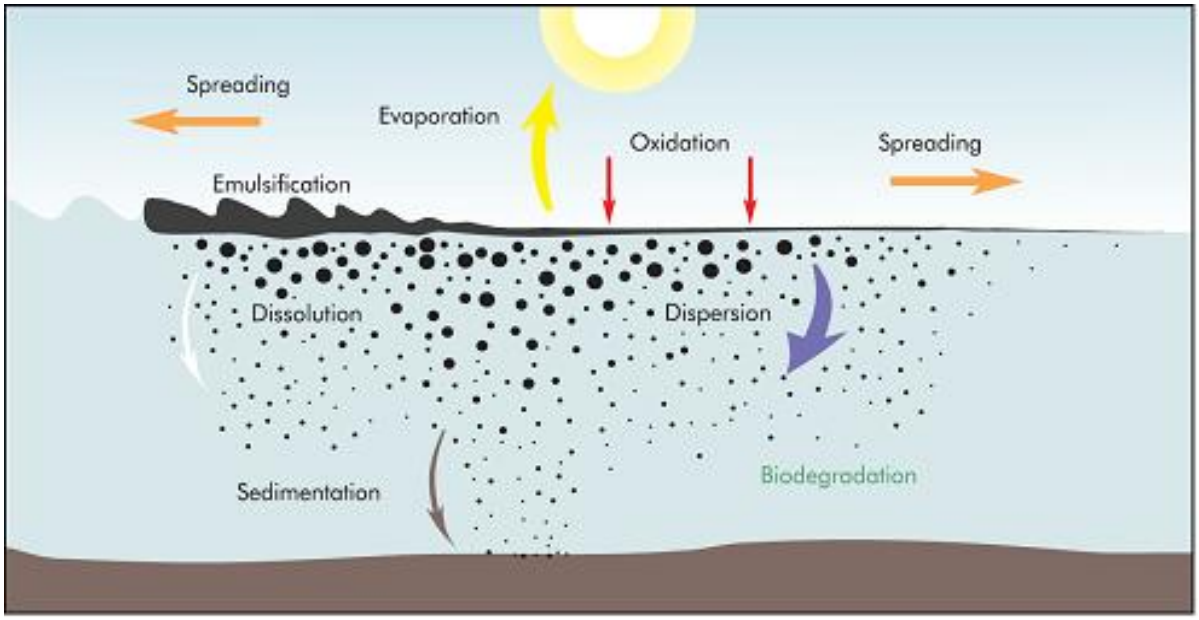

Figure 7-6 Process Acting on Marine Spilled Oil (ITOPF; 2002)

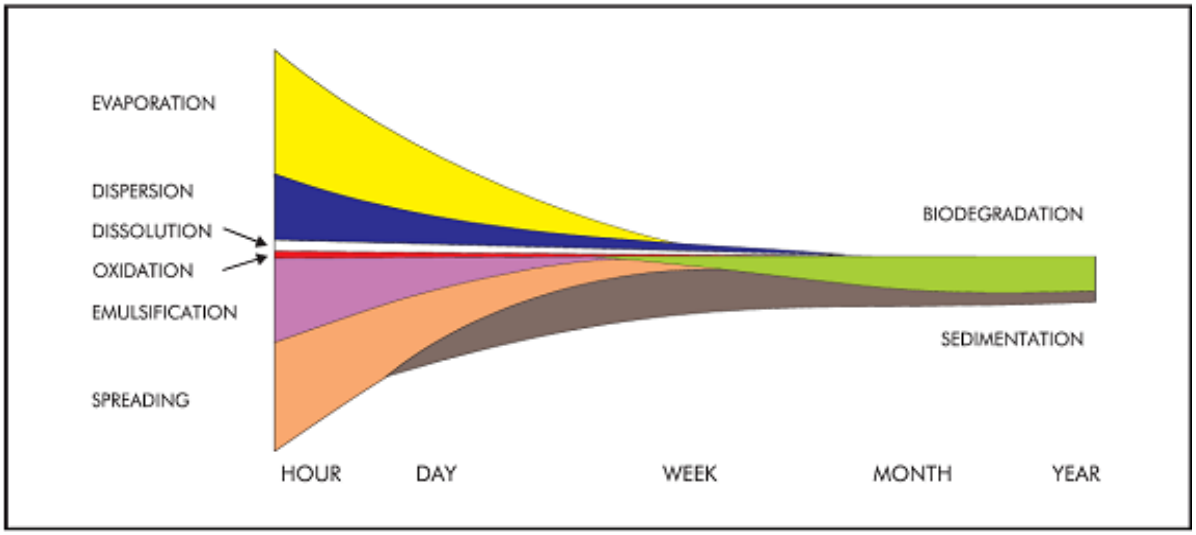

Figure 7-7 A schematic representation of the fate of a crude oil spill showing changes in the relative importance of weathering processes with time - the width of each band indicates the importance of the process (ITOPF; 2002)

According to the National Marine Pollution Contingency Plan (2022), oil spills occurring within 10 km of the shoreline have an increased probability of reaching the coast, with the likelihood of shoreline contact increasing the closer the spill occurs to land. This is relevant to the proposed bunkering activities, as operations within the port, anchorage areas or nearshore environment would take place in relatively close proximity to sensitive coastal receptors.

For spills occurring close to shore, natural weathering should not be relied on as the primary response strategy. Instead, the response should focus on rapid containment, recovery and protection of sensitive receptors. In the Walvis Bay context, these include the lagoon and associated bird habitats, mariculture areas, seawater intakes, rocky shores north of Walvis Bay and the Pelican Point seal colony.

Oil movement within and near the harbour is expected to be influenced by local wind, tidal exchange and harbour current patterns. Due to the sheltered nature of Walvis Bay, water movement may be relatively weak in certain areas, which can result in pollutants remaining within the harbour or near sensitive receptors for longer periods. Spill response planning must therefore consider local current patterns, prevailing winds and tidal conditions, particularly where bunkering takes place near the port, anchorage areas or other operational zones close to the coast.

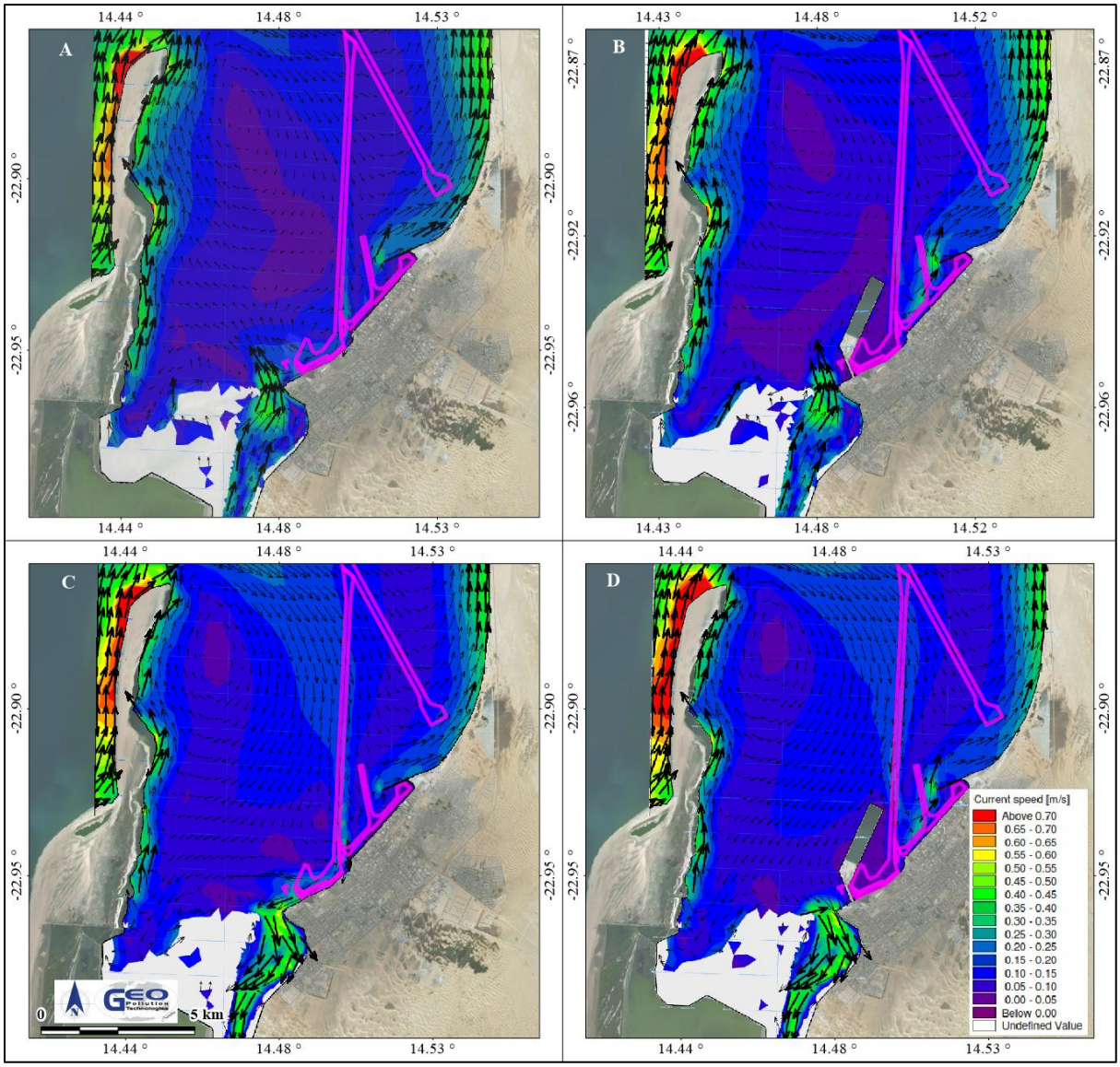

Figure 7-8 Comparison of modelled ebb (A and B) and flood (C and D) tide scenarios for before and after the construction of the new container terminal (Source: Hydrodynamic Modelling Report of DMC-CSIR 2010)

Implications and Impacts

Bunkering activities within the port present a higher risk of oil reaching sensitive coastal receptors, particularly where activities occur within 10 km of the shoreline. The likelihood of shoreline contact increases the closer a spill occurs to land. Oil movement will be influenced by local harbour currents, tidal exchange and prevailing winds, which may cause pollutants to remain in sheltered or weakly flushed areas for longer periods. Sensitive receptors that may be affected include the lagoon and associated bird habitats, mariculture areas, seawater intakes, rocky shores north of Walvis Bay and the Pelican Point seal colony.

7.6 TYPICAL OIL SPILL IMPACTS

The National Marine Pollution Contingency Plan (2022) outlines a range of environmental risks associated with spills from coastal tankers, fishing vessels, and dry cargo ships, particularly those using diesel or heavy furnace fuel (HFF). Spills within the coastal zone have the potential to cause significant ecological disruption, particularly to marine mammals, seabirds, and sensitive shoreline habitats. Mariculture activities may be affected in or near the affected areas, particularly

where water quality is reduced or hydrocarbon contamination occurs. Operators should be notified where necessary to prevent further risk or exposure.

The Plan acknowledges that the availability of shoreline protection equipment in Namibia is limited. In the event of an imminent coastal impact, response options such as diversion booming may be deployed to protect high-priority areas, such as estuary mouths or ecologically sensitive beach segments. Additionally, the early use of absorbent materials prior to shoreline impact may assist in reducing oil volume, limiting smothering effects, and facilitating subsequent clean-up operations.

Namibia's dynamic coastline presents further complexity. Oil that reaches sandy beaches is often quickly buried below the high tide mark by wave and tidal action, only to be re-exposed by subsequent tidal cycles. Fine-grained beaches tend to retain oil close to the surface, whereas coarser substrates, including pebbles and cobbles, may allow oil to become trapped at greater depths (30–50 cm), rendering detection and removal more challenging. On high-energy rocky shores, wave action can rapidly remove surface oil. However, in the event of a high spring tide combined with storm conditions, oil may be deposited well above the high-water mark, where it can persist for years in the form of tar residues.

Oil that sinks to the seafloor can negatively impact benthic communities. The extent and rate of biodegradation of such subsurface oil remains uncertain, but its potential to harm bottom-dwelling organisms is acknowledged.

The ecological consequences of oil spills are not limited to immediate toxicity or physical smothering. Long-term impacts include disruption of food chains, contamination of reproductive habitats, and the degradation of marine organic substrates. These effects can have persistent consequences for commercial fisheries, aquaculture operations, and marine biodiversity. Fish and other seafood species may suffer both mass mortality and long-term sublethal effects, potentially affecting the viability of entire populations.

Wildlife—including marine mammals, reptiles, and birds—can suffer from a range of acute and chronic oil-related impacts. These include direct toxic exposure, smothering of fur or feathers (leading to loss of thermal insulation), and impairment of reproductive function and behaviour. The cumulative ecological effects may alter species distributions or lead to localised population declines.

Coastal environments often support tourism, recreational use, and conservation areas. Oil contamination in these zones may severely disrupt human activities such as swimming, recreational fishing, and eco-tourism, with long-lasting social and economic consequences for coastal communities. The degree to which oil residues persist onshore depends on the type and volume of oil, the nature of affected coastal substrates, local weather patterns, and the sensitivity of impacted habitats.

The characteristics of the spilled oil—its volatility, emulsification potential, and susceptibility to weathering—play a critical role in determining how quickly or completely it breaks down. Environmental conditions, particularly temperature, wind, and wave action, further influence these processes. See Table 7-2 for an overview of oil behaviour in different coastal environments.

Table 7-2 Composition and Relative Biodegradability of Petroleum Products (US EPA; 2004)

Product	Major Components	Relative Product Biodegradability
Natural Gas	Normal and branched-chain alkanes. One to five carbons in length. Examples: ethane, propane.	**Higher**
Gasoline	Normal and branched hydrocarbons between 6 and 10 carbons in length. Examples: n-butane, n-pentane, noctane, isopentane, methylpentanes, benzene, toluene, xylenes, ethylbenzene.	
Kerosene, Diesel	Primarily 11 to 12 carbon hydrocarbons, although the range of carbons extends well above and below this range. Generally contains low to non-detectable levels of benzene and polyaromatic hydrocarbons. Jet fuel oils have a similar composition. Examples: n-nonane, n-decane, n-dodecane, naphthalene, n-propylbenzene.	
Light Gas Oils (e.g., No 2 Fuel Oil)	Twelve to 18 carbon hydrocarbons. Lower percentage of normal alkanes than kerosene. These products include diesel and furnace fuel oils (e.g., No. 2 fuel oil). Examples: fluorene, naphthalene, phenanthrene, isopropylbenzene.	
Heavy Gas Oils and Light Lubricating Oils	Hydrocarbons between 18 and 25 carbons long.	
Lubricants	Hydrocarbons between 26 and 38 carbons long.	
Asphalts	Heavy polycyclic compounds.	Lower

Implications and Impacts

Oil spills can cause significant harm to sensitive coastal habitats, marine life and the mariculture areas, with impacts ranging from acute mortality to long-term contamination. Limited shoreline protection in Namibia heightens the risk of oil reaching priority areas, while burial in sediments can prolong persistence. Tourism, aquaculture, and fishing may be disrupted, underscoring the need for strict spill prevention and rapid response measures.

7.7 DEMOGRAPHIC AND ECONOMIC CHARACTERISTICS

Walvis Bay will be the administrative base from which the Proponent will operate, although bunkering operations will occur at sea. According to the results of the 2023 population and housing census, Walvis Bay has an urban population size of 51,618 and a total population (urban and rural combined) of 103,115 (Namibia Statistics Agency, 2024). Walvis Bay is the principal port of Namibia, and is an import/export facility for processed fish, mining products and beef, amongst others. The area is linked to Namibia's air, rail and road network, making the port well situated to service Zambia, Zimbabwe, Botswana, southern Angola and South Africa. The port and related industries provide secure employment to residents of the area. The fishing industry is the major employer of low skilled workers on a permanent and seasonal basis. The total employment of this sector is estimated at 2% of the total Namibian workforce. Based on the 2011 census, unemployment in Walvis Bay was at 21.8%, which is well below the Namibian rate of 37%. Economic activities relate mostly to businesses related to the harbour. The town is known as a business and industrial area.

The waters of the bay and lagoon at Walvis Bay provides the local and national community with a range of benefits. Small scale purse-seine fishing for mainly mullet occurs north of the town. Fish factories make use of the harbours water for the processing of fish. Tourists frequent Walvis Bay and especially the lagoon and bay where sightseeing and sunset boat tours to view seals, dolphins and whales and the rare sunfish (*Mola mola*), are very popular. Bird watching along the eastern shore of the lagoon is also a major tourist attraction. Mariculture, especially for mussels and oysters, has become important for both local and international markets. All the

aforementioned beneficial uses of the bay's natural environment would be seriously jeopardised if major environmental impacts occurred in the bay.

Table 7-3 Demographic characteristics of Walvis Bay, the Erongo Region and Nationally (Namibia Statistics Agency, 2024)

	Walvis Bay Urban	Erongo Region	Namibia
Population (Males)	26,212	122,322	1,474,224
Population (Females)	25,406	117,884	1,548,177
Population (Total)	51,618	240,206	3,022,401
Population Density (persons/km^2)	2,730.8	3.8	3.7

Namibia's ports are considered to have a high HIV vulnerability. Local and foreign businessmen, fishermen as well as truck drivers are mobile workers which have been identified to make more use of sex workers. There is a higher concentration of such local and foreign labourers in Walvis Bay. The town is also a destination site for internal migrants looking for work in the construction and fishing sectors. Such workers also make use of transactional sex which is supplied by mostly women, to supplement their income. The high prevalence to engage in commercial sex, increases the HIV probability and risk profile of the mobile and local community.

Implications and Impacts

Some skills development and training may result from the operations and revenue will be generated and livelihoods sustained. The spending power of locals is likely to increase which may increase the occurrences of social ills such as alcohol or drug abuse.

7.8 CULTURAL, HERITAGE AND ARCHAEOLOGICAL ASPECTS

Walvis Bay is a long-established harbour town, and the proposed bunkering activities will take place within existing port and marine operational areas. The activities are therefore unlikely to affect archaeological or cultural heritage resources. Should any heritage resources be encountered during associated activities, work in the affected area must stop and the relevant authority must be notified.

Implications and Impacts

While offshore bunkering operations are unlikely to physically affect such resources, the potential for oil spills and subsequent clean-up activities could have indirect impacts. For example, the removal of surface sediments during remediation could disturb archaeological deposits or heritage features.

8 PUBLIC CONSULTATION

Consultation with the public forms an integral component of an environmental assessment investigation and enables interested and affected parties (IAPs) e.g. neighbouring landowners, local authorities, environmental groups, civic associations and communities, to comment on the potential environmental impacts associated with projects and to identify additional issues which they feel should be addressed in the environmental assessment.

Public participation notices were advertised twice for two weeks in the national papers: Republikein and Namibian Sun on 13 and 20 April 2026. A site notice was placed a notice board at the Woermann Brock supermarket in town. Interested and affected parties were identified and notified of the project. Notification letters were hand delivered to available neighbours as well as the Municipality of Walvis Bay and Namport. The notification letter delivered to the Municipality of Walvis Bay was accepted; however, officials declined to acknowledge receipt by signing the register. See Appendix A for proof of the public participation processes. Several parties chose to register as IAP for the project and no concerns regarding the project were raised during the public consultation phase.

9 ASSESSMENT AND MANAGEMENT OF IMPACTS

The purpose of this section is to assess and identify the most pertinent environmental impacts that are expected from vessel commissioning (also upgrades, maintenance, etc.), operations, and potential decommissioning activities of the vessel. An EMP based on these identified impacts is incorporated into this section.

For each impact an Environmental Classification was determined based on an adapted version of the Rapid Impact Assessment Method (Pastakia, 1998). Impacts are assessed according to the following categories: Importance of condition (A1); Magnitude of Change (A2); Permanence (B1); Reversibility (B2); and Cumulative Nature (B3) (see Table 9-1).

Ranking formulas are then calculated as follow:

Environmental Classification = A1 x A2 x (B1 + B2 + B3).

The environmental classification of impacts is provided in Table 9-2.

The probability ranking refers to the probability that a specific impact will happen following a risk event. These can be improbable (low likelihood); probable (distinct possibility); highly probable (most likely); and definite (impact will occur regardless of prevention measures).

Table 9-1 Assessment criteria

Criteria	Score
Importance of condition (A1) – assessed against the spatial boundaries of human interest it will affect	
Importance to national/international interest	4
Important to regional/national interest	3
Important to areas immediately outside the local condition	2
Important only to the local condition	1
No importance	0
Magnitude of change/effect (A2) – measure of scale in terms of benefit / disbenefit of an impact or condition	
Major positive benefit	3
Significant improvement in status quo	2
Improvement in status quo	1
No change in status quo	0
Negative change in status quo	-1
Significant negative disbenefit or change	-2
Major disbenefit or change	-3
Permanence (B1) – defines whether the condition is permanent or temporary	
No change/Not applicable	1
Temporary	2
Permanent	3
Reversibility (B2) – defines whether the condition can be changed and is a measure of the control over the condition	
No change/Not applicable	1
Reversible	2
Irreversible	3
Cumulative (B3) – reflects whether the effect will be a single direct impact or will include cumulative impacts over time, or synergistic effect with other conditions. It is a means of judging the sustainability of the condition – not to be confused with the permanence criterion.	
Light or No Cumulative Character/Not applicable	1

Moderate Cumulative Character	2
Strong Cumulative Character	3

Table 9-2 Environmental classification (Pastakia 1998)

Environmental Classification	Class Value	Description of Class
72 to 108	5	Extremely positive impact
36 to 71	4	Significantly positive impact
19 to 35	3	Moderately positive impact
10 to 18	2	Less positive impact
1 to 9	1	Reduced positive impact
0	-0	No alteration
-1 to -9	-1	Reduced negative impact
-10 to -18	-2	Less negative impact
-19 to -35	-3	Moderately negative impact
-36 to -71	-4	Significantly negative impact
-72 to -108	-5	Extremely Negative Impact

9.1 RISK ASSESSMENT AND ENVIRONMENTAL MANAGEMENT PLAN

The EMP provides management options to ensure impacts of the project is minimised. An EMP is a tool used to take pro-active action by addressing potential problems before they occur. This should limit the corrective measures needed, although additional mitigation measures might be included if necessary. The environmental management measures are provided in the tables and descriptions below. These management measures should be adhered to during the various phases of the operations. This section of the report can act as a stand-alone document. All personnel taking part in the operations should be made aware of the contents in this section, so as to plan the operations accordingly and in an environmentally sound manner.

The objectives of the EMP are:

- to include all components of vessel commissioning activities (acquisition, maintenance, etc.) and operations;
- to prescribe the best practicable control methods to lessen the environmental impacts associated with the project;
- to monitor and audit the performance of operational personnel in applying such controls; and
- to ensure that appropriate environmental training is provided to responsible operational personnel.

Various potential and definite impacts will emanate from the commissioning, operations and decommissioning phases. The majority of these impacts can be mitigated or prevented. The impacts, risk rating of impacts as well as prevention and mitigation measures are listed below.

As depicted in the tables below, impacts related to the operational phase are expected to mostly be of low to medium significance and can mostly be mitigated to have a low significance. The extent of most of the impacts are also site specific to local and are not of a permanent nature. However, in the unlikely event of a significant MGO spill, particularly close to the coastline (especially rocky shorelines), offshore islands (with breeding bird colonies) and ecologically significant areas as identified in Table 7-1, the impacts could be catastrophic. Such a spill would not be site-specific and could result in widespread and long-term ecological damage.

9.1.1 Planning

During the phases of planning for vessel commissioning, operations and decommissioning of the vessel, it is the responsibility of Proponent to ensure they are and remain compliant with all legal requirements. The Proponent must also ensure that all required management measures are in place prior to and during all phases, to ensure potential impacts and risks are minimised.

The following actions are recommended for the planning phase and should continue during various other phases of the project:

- Ensure that all necessary permits from the various ministries, local authorities and any other bodies that govern the project are in place and valid.
- Ensure all appointed contractors and employees enter into an agreement which includes the EMP. Ensure that the contents of the EMP are understood by the contractors, sub-contractors, employees and all personnel involved with the project.
- Make provisions to have a Health, Safety and Environmental Coordinator to implement the EMP and oversee occupational health and safety as well as general environmental related compliance.
- Make provisions to have a community liaison officer who will handle complaints and community input, and through whom, where reasonable, monitoring data can be requested. Communicate the contact details of the community liaison officer to interested and affected parties when the project is initiated.
- Among others, have the EMP, emergency response plans, health safety and environmental manuals, spill containment, spill clean-up, and firefighting equipment and materials required for emergencies available.
- Ensure adequate insurance cover for incidents are in place.
- Establish and / or maintain a reporting system to report on aspects of commissioning activities, operations and decommissioning as outlined in the EMP.
- Prepare and submit environmental monitoring reports as per the conditions of the ECC.
- Appoint a specialist environmental consultant to update the EIA and EMP and apply for renewal of the ECC prior to expiry.

9.1.2 Employment

An increase in skilled and professional labour for onshore and offshore activities. Bunkering vessels however often have foreign crews who are trained in bunkering activities. Due to the serious risk of pollution and health and safety of crew at sea, it is paramount that only suitably qualified and experienced employees are employed for specialised tasks. Indirect support for local contractors, such as local ship service, maintenance and repair contractors, will however aid in sustaining and increasing employment of the local workforce. This already materialises during the planning phase when consultants are employed to, for example, ensure compliance to all national legislation.

Project Activity / Resource	Nature (Status)	(A1) Importance	(A2) Magnitude	(B1) Permanence	(B2) Reversibility	(B3) Cumulative	Environmental Classification	Class Value	Probability
Planning and Vessel Commissioning	Support for local contractors and consultants. Employment opportunities where the vessel requires new crew members to operate	3	1	2	2	2	18	3	Definite
Daily Operations	Permanent employment on board the vessel and new, or sustaining of existing employment, for onshore operations	3	1	3	2	2	21	3	Definite
Indirect Impacts	Decrease in overall unemployment in Namibia	3	1	3	2	2	21	3	Probable

Desired outcome: Provision of employment, preferably to Namibian citizens where the necessary skills are available.

Actions

Enhancement:

- Employment of suitably qualified and experienced Namibians where possible.

Responsible Body:

- Proponent

Data Sources and Monitoring:

- Bi-annual summary report based on employee records.

9.1.3 Skills, Technology and Development

Due to the specialised nature of bunkering and vessel operations, unskilled labour is not typically used. Some employees may however benefit from training and the gaining of experience during the commissioning and operation of bunkering vessels. New vessel and bunkering technology may also be employed to increase safety and reduce the probability of incidents. The development of people, systems and technology is important for the effective undertaking of the proposed operation and may contribute positively to the broader marine services sector.

Project Activity / Resource	Nature (Status)	(A1) Importance	(A2) Magnitude	(B1) Permanence	(B2) Reversibility	(B3) Cumulative	Environmental Classification	Class Value	Probability
Daily Operations	Technological development and transfer of skills among employees	3	2	3	2	2	42	4	
Indirect Impacts	Supporting of local contractors providing services to the bunkering operations, allows for skills transfer and technological development in such supporting industries	3	2	3	2	2	42	4	Definite

Desired Outcome: To see an increase in skills of local Namibians, as well as development and technology advancements in associated industries.

Actions

Enhancement:

- If the skills exist locally, contractors and employees must first be sourced in Namibia. Deviations from this practise must be justified.
- Skills development and improvement programs to be made available as identified during performance assessments of employees.

Responsible Body:

- Proponent
- Contractors

Data Sources and Monitoring:

- Record should be kept of training provided.
- Ensure that all training is certified or managerial reference provided (proof provided to the employees) inclusive of training attendance, completion and implementation.
- Bi-annual summary report based on records kept.

9.1.4 Revenue Generation

The Proponent is a Namibian registered company that will generate revenue through the provision of marine fuel transport and bunkering services. By supporting the continued and secure supply of fuel to marine traffic operating within the Port of Walvis Bay and associated anchorage areas, the proposed project may contribute to the efficiency and sustainability of port and marine operations in the area. The availability and accessibility of bunkering services may further contribute to the attractiveness of Walvis Bay as a port and service hub for maritime activities. Operations may also support vessels operating in the port and surrounding marine environment, including those associated with the fishing, shipping and other marine industries. The provision of services classified as taxable supplies will contribute directly to Namibia's economy.

Project Activity / Resource	Nature (Status)	(A1) Importance	(A2) Magnitude	(B1) Permanence	(B2) Reversibility	(B3) Cumulative	Environmental Classification	Class Value	Probability
Daily Operations	Contribution to local and national economy through operations, payment of salaries, procurement of services and goods, etc.	3	2	3	2	2	42	4	Definite
Daily Operations	Sourcing and sale of fuel to vessels to continue operations	3	2	3	2	2	42	4	Definite
Indirect Impacts	Increase in revenue generated in Namibia	3	1	3	2	2	21	3	Definite

Desired outcome: Contribution to national treasury and general economic development.

Actions

Enhancement:

- Adhere to various legislative requirements pertaining to payment of wages, taxes, levies, etc. Fair and consistent business practices will ensure an overall positive boost to the economy.
- Priority must be given to preventing oil spills through strict operational controls. If a spill does occur, a rapid and effective response will be essential to minimise impacts on the marine ecosystem and dependent industries.

Responsible Body:

- Proponent

Data Sources and Monitoring:

- Namibian legislation

9.1.5 Demographic Profile and Community Health

Impacts related to the demographic profile and community health mainly relate to the possible influx of people to Walvis Bay and the associated potential for social ills and deviant behaviour, including the spread of communicable diseases and increased criminal activities. Additional employment opportunities may also increase spending power, which in some cases can contribute to alcohol and drug misuse.

Due to the limited crew complement on bunkering vessels and the fact that crew will predominantly remain on board the vessel or operate within controlled port environments, it is not foreseen that the proposed project will create a significant or permanent change in the demographic profile of the local community, or result in significant instances of socially deviant behaviour. The potential impact is further reduced where employment is sourced locally as far as possible.

Positive impacts may relate to employees' and contractors' increased economic resilience and improved livelihoods.

Project Activity / Resource	Nature (Status)	(A1) Importance	(A2) Magnitude	(B1) Permanence	(B2) Reversibility	(B3) Cumulative	Environmental Classification	Class Value	Probability
Vessel Commissioning	Increased economic resilience and improved livelihoods	2	-1	2	2	2	-12	-2	Probable
Daily Operations	Social ills related to increased spending power of employees and cross country transport	2	-2	3	2	2	-28	-3	Probable
Daily Operations	Increased economic resilience and improved livelihoods	2	2	3	2	2	28	3	Definite
Indirect Impacts	The spread of diseases	3	-1	3	2	2	-21	-3	Probable

Desired Outcome: To prevent the in-migration and growth in informal settlements, prevent the spread of communicable disease and prevent / discourage socially deviant behaviour.

Actions:

Prevention:

- Employ local people from the area where possible, deviations from this practise should be justified appropriately.
- Adhere to all municipal by-laws relating to environmental health which includes, but is not limited to, sanitation requirements for workers on site.
- Appointment of reputable contractors.

Mitigation:

- Educational programmes for employees (especially truck drivers) on HIV/AIDs and general upliftment of employees' social status.

Responsible Body:

- Proponent

Data Sources and Monitoring:

- Facility inspection sheet for all areas which may present environmental health risks, kept on file.
- Bi-annual summary report based on educational programmes and training conducted.
- Bi-annual report and review of employee demographics.

9.1.6 Health, Safety and Security

Various activities associated with the operational phase rely on human labour and therefore expose workers to health and safety risks. Activities such as the operation of machinery and the handling of hazardous substances, including exposure to petroleum products, pose the main risks to employees. Working at sea and alongside other vessels may increase the risks to employees, particularly during adverse weather or sea conditions. The cold water and marine conditions along the Namibian coast also increase the severity of man-overboard incidents, where exposure may rapidly result in hypothermia. Security risks are primarily associated with unauthorised access to bunkering vessels and operational areas, which may include theft, sabotage, interference with bunkering operations, or other unlawful activities.

Project Activity / Resource	Nature (Status)	(A1) Importance	(A2) Magnitude	(B1) Permanence	(B2) Reversibility	(B3) Cumulative	Environmental Classification	Class Value	Probability
Vessel Commissioning	Physical injuries, exposure to chemicals and criminal activities	2	-2	2	2	2	-24	-3	Probable
Daily Operations	Physical injuries, exposure to chemicals and criminal activities	2	-2	3	2	2	-28	-3	Probable

Desired Outcome: To prevent injury, health impacts and theft.

Actions

Prevention:

- All Health and Safety standards specified in the Labour Act and various maritime procedures and protocols should be complied with.
- Clearly label dangerous and restricted areas on the vessel as well as dangerous equipment and products.
- Ensure material safety data sheets for all related materials are kept on board.
- Provide all employees with required and adequate personal protective equipment (PPE).
- Ensure that all personnel receive adequate training on operation of equipment / handling of hazardous substances.
- Implementation of maintenance register for all equipment.
- Controlled access to the vessel, restricted entry to the bridge and fuel manifolds, and clear security watchkeeping protocols.
- Maintain adequate vessel lighting, CCTV, alarms, and communication systems as part of standard onboard procedures

Mitigation:

- Selected personnel should be trained in first aid and first aid kits must be available. The contact details of all emergency services and related protocol must be readily available for sea rescue for in the event of serious injury.
- Implement and maintain an integrated health and safety management system, to act as a monitoring and mitigating tool.
- Security procedures and proper security measures must be in place to protect workers, including adherence to the ISPS Code, piracy awareness training, and regular security drills.

Responsible Body:

- Proponent
- Contractors

Data Sources and Monitoring:

- Labour Act and relevant maritime procedures and protocols.

- Audit results
- Any incidents must be recorded with action taken to prevent future occurrences.
- A bi-annual report should be compiled of all incidents reported. The report should contain dates when training was conducted and when safety equipment and structures were inspected and maintained.

9.1.7 Bunkering Services

The operations of the Proponent will aid in supporting fuel supply to marine traffic operating within the Port of Walvis Bay and associated anchorage areas. Continued and reliable fuel supply supports vessels making use of the port and surrounding operational waters, including fishing, shipping and other marine-related vessels.

Project Activity / Resource	Nature (Status)	(A1) Importance	(A2) Magnitude	(B1) Permanence	(B2) Reversibility	(B3) Cumulative	Environmental Classification	Class Value	Probability
Daily Operations	Fuel supply to ships in the port	2	2	3	2	3	32	4	Definite

Desired Outcome: Ensure a secure and reliable supply of fuel remains available for seafaring traffic.

Actions

Enhancement:

- Ensure compliance to the petroleum regulations of Namibia as well as all marine related standards of operation related to petroleum.
- Proper fuel management to ensure constant supply.
- Record supply problems and take corrective actions.

Responsible Body:

- Proponent

Data Sources and Monitoring:

- Record supply problems and corrective actions taken.

9.1.8 Air Quality Related Impacts

In terms of air quality, hydrocarbon vapours may be released during the delivery of bunker fuel to tanks, as liquid displaces the gaseous mixture in the tanks. This will be released through the relevant venting system on the bunkering vessel and receiving vessel. The air quality impact will therefore be limited mainly to the immediate operational area around the vessels. Prolonged exposure of workers to such vapours may have adverse health effects. Exhaust emissions from bunkering vessels also contribute to greenhouse gases and other air pollutants, including nitrogen oxides, sulphur oxides and particulate matter.

Project Activity / Resource	Nature (Status)	(A1) Importance	(A2) Magnitude	(B1) Permanence	(B2) Reversibility	(B3) Cumulative	Environmental Classification	Class Value	Probability
Vessel Commissioning	Emissions from sailing the vessel to Namibia	2	-1	2	2	2	-12	-2	Definite
Daily Operations	Emissions from sailing the vessel	2	-2	3	2	2	-28	-3	Definite
Daily Operations	Hydrocarbon vapour emissions while bunkering	2	-1	2	2	2	-12	-2	Definite

Desired Outcome: To prevent health impacts related to fuel vapours

Actions

Prevention:

- Vent pipes must be placed in such a manner as to prevent impact on potential receptors. These include ignitions sources and confined spaces where normally frequented by workers.
- Regular maintenance of vessel engines must be conducted to ensure efficient combustion and minimise exhaust emissions.
- Only high-quality, low-sulphur marine fuels, including MGO and VLSFO, should be used and supplied in line with MARPOL Annex VI requirements.

Mitigation:

- Employees should be coached on the dangers of fuel vapours.
- In the event of accidental over-exposure, immediate medical response protocols must be followed, and protective equipment must be used.

Responsible Body:

- Proponent
- Contractors

Data Sources and Monitoring:

- Any complaints received from workers regarding dust or fuel vapours should be recorded with notes on action taken.
- All information and reporting to be included in a bi-annual report.

9.1.9 Fire

Hydrocarbons are volatile under certain conditions and their vapours in specific concentrations are flammable. The primary causes of such incidents may include human error, technical failures and inadequate maintenance. If precautions are not taken to prevent ignition, fires and related safety risks may become more probable.

Project Activity / Resource	Nature (Status)	(A1) Importance	(A2) Magnitude	(B1) Permanence	(B2) Reversibility	(B3) Cumulative	Environmental Classification	Class Value	Probability
Vessel Commissioning	Fire and explosion risk when sailing the vessel from acquired destination	2	-1	2	2	2	-12	-2	Probable
Daily Operations	Fire and explosion risk during bunkering	2	-2	3	2	2	-28	-3	Probable
Daily Operations	Fire and explosion risk while sailing	2	-2	3	2	2	-28	-3	Probable

Desired Outcome: To prevent property damage, possible injury and impacts caused by uncontrolled fires.

Actions:

Prevention:

- A holistic fire protection and prevention plan must be in use and regularly revised. This plan must include an emergency response plan, firefighting plan and spill recovery plan.
- All personnel have to be educated on responsible fire prevention measures.
- Fire-fighting training to be provided to staff.
- Regular inspections must be carried out to inspect and test fire-fighting equipment.
- Firefighting equipment must be readily accessible in all operational areas.
- Fire prevention considerations specifically applicable to engine rooms include fire doors, fire pumps, and emergency fuel-flow stopping devices.
- Various international occupational health and safety performances should be consulted for specific regulations. The latest version of the Emergency Response Guidebook, material safety data sheets (MSDS) for the various products stored or used on board the vessel, and various petroleum and shipping related procedures and protocols should be consulted.

Mitigation:

- In case of a fire, the firefighting plan must be initiated immediately and all emergency procedures must be performed as practiced during training.

Responsible Body:

- Proponent
- Contractors

Data Sources and Monitoring:

- Emergency Response Guidebook, material safety data sheets (MSDS) for the various products stored or used on board the vessel, and various petroleum and shipping related procedures and protocols.
- A register of all incidents must be maintained. This should include measures taken to ensure that such incidents do not repeat themselves.
- A bi-annual report should be compiled of all incidents reported. The report should contain dates when fire drills were conducted and when fire equipment was tested and training given.

9.1.10 Noise and Vibration

Noise generated during operations will mainly originate from bunkering vessel engines, pumps, and auxiliary equipment such as generators and compressors. Additional intermittent noise may result from radio communication, crew activity, and mechanical handling equipment on board.

In addition to noise, vibration from engines and heavy equipment may also occur. Such vibration is expected to be localised to the bunkering vessel and receiving vessel.

As the bunkering activities will take place within the Port of Walvis Bay and associated anchorage areas, noise and vibration impacts are expected to be limited mainly to the immediate operational area and other vessels in the vicinity. Temporary increases in noise and vibration may occur during vessel manoeuvring, bunkering, or maintenance, but these are expected to be localised and of limited duration.

Project Activity / Resource	Nature (Status)	(A1) Importance	(A2) Magnitude	(B1) Permanence	(B2) Reversibility	(B3) Cumulative	Environmental Classification	Class Value	Probability
Vessel Commissioning	Noise and vibrations generated from the vessel	2	-1	2	2	2	-12	-2	Probable
Daily Operations	Noise and vibrations generated from the vessel and pumps while bunkering	2	-1	3	2	2	-14	-2	Probable

Desired Outcome: To prevent any nuisance, hearing loss due to noise, and discomfort from vibration generated.

Actions

Prevention:

- The Health and Safety Regulations of the Labour Act and World Health Organization (WHO) guideline on maximum noise levels prevent hearing impairment for workers on the vessel should be followed during the and operational phases.
- Measures should also be applied to reduce vibration exposure from engines and machinery, including equipment design considerations and proper maintenance.

Mitigation:

- Hearing protectors as standard PPE for workers in situations with elevated noise levels.
- Maintain noise generating activities onboard the vessel as far as possible.
- All machinery must be regularly serviced to ensure minimal noise and vibration production.

Responsible Body:

- Proponent
- Contractors

Data Sources and Monitoring:

- Health and Safety Regulations of the Labour Act and WHO Guidelines.
- Maintain a complaints register.
- Bi-annual report on complaints and actions taken to address complaints and prevent future occurrences.

9.1.11 Waste production

Activities on board the bunkering vessel(s) will create various types of waste. These include oils and greases from maintenance activities, sewerage, kitchen waste from the galleys and plastics and paper from packaging and administration activities. Waste entering the ocean (accidentally or purposefully discarded) can remain there for long periods of time or come ashore and litter the beaches. Hazardous waste may be generated through the handling of hydrocarbon products, such as used oil, filters, and chemical residues. If an oil spill occurs and absorbent materials (e.g. pads, booms, or rags) are deployed, these contaminated absorbents must also be treated as hazardous waste and disposed of at a suitably licensed hazardous waste facility.

Project Activity / Resource	Nature (Status)	(A1) Importance	(A2) Magnitude	(B1) Permanence	(B2) Reversibility	(B3) Cumulative	Environmental Classification	Class Value	Probability
Vessel Commissioning	Uncontained waste entering the environment	2	-2	2	2	2	-24	-3	Probable
Daily Operations	Uncontained waste entering the environment	2	-2	3	2	2	-28	-3	Probable

Desired Outcome: To reduce the amount of waste produced, and prevent pollution and littering.

Actions

Prevention:

- Adhere to International Convention for the Prevention of Pollution from Ships (MARPOL) requirements related to waste and sewerage handling and or discharge.
- Waste reduction measures should be implemented and all waste that can be re-used / recycled must be kept separate.
- Ensure adequate temporary waste storage facilities are available.
- Ensure waste cannot be blown away by wind.
- Biodegradable sewage waste must be managed in accordance with accepted maritime standards and the requirements of MARPOL Annex IV. All applicable vessels must be equipped with suitable sewage management systems, such as an approved sewage treatment plant and/or an appropriately sized sewage holding tank. While MARPOL Annex IV allows the discharge of treated, comminuted and disinfected sewage under specified offshore conditions, such as beyond the prescribed distance from land and while the vessel is underway, this is primarily relevant to vessel commissioning and offshore operations. During operations within the harbour or port limits, sewage must not be discharged into the marine environment and must instead be retained on board and offloaded at an approved harbour reception facility.
- All other waste generated on board must be retained and offloaded in the harbour, from where it can be taken to an approved waste handling facility

Mitigation:

- Employ and maintain spill control measures for accidental hydrocarbon pollution according to industry requirements.

Responsible Body:

- Proponent
- Contractors

Data Sources and Monitoring:

- National Marine Pollution Contingency Plan and relevant maritime procedures (e.g. MARPOL).
- A register of hazardous waste disposal should be kept. This should include type of waste, volume as well as disposal method/facility.
- Any complaints received regarding waste should be recorded with notes on action taken.
- Spill control structure should be regularly inspected.
- All information and reporting to be included in a bi-annual report.

9.1.12 Ship Traffic and Collision

The Proponent will operate within the Port of Walvis Bay and associated anchorage areas. Collisions between the Proponent's vessel(s) and other vessels and allisions with fixed infrastructure can occur.

Project Activity / Resource	Nature (Status)	(A1) Importance	(A2) Magnitude	(B1) Permanence	(B2) Reversibility	(B3) Cumulative	Environmental Classification	Class Value	Probability
Vessel Commissioning	Increase in seafaring traffic causing traffic accidents	2	-1	2	2	2	-12	-2	Probable
Daily Operations	Increase in seafaring traffic causing traffic accidents	2	-1	3	2	2	-14	-2	Probable

Desired Outcome: To prevent allisions and collisions between vessels operating in the area.

Actions

Prevention:

- Appoint only suitably qualified and experienced personnel versed in the details of, among others, the Convention on the International Regulations for Preventing Collisions at Sea (COLREGs).
- Ensure all safety and communications equipment on the vessel is regularly inspected and maintained in working order at all times. Relevant crew must also be trained in the use of this equipment, including emergency equipment and procedures to follow when normal systems fail.
- All vessel movements and bunkering operations must be coordinated in accordance with applicable port procedures, vessel traffic requirements and communication protocols.

Responsible Body:

- Proponent
- Contractors

Data Sources and Monitoring:

- COLREGs and other industry standards and regulations.

9.1.13 Surface Water Contamination and Related Ecological Impacts

Accidental spillages might occur during the transfer of bunker fuel, as well as from the vessel's own fuel tanks, machinery and contaminated bilge water. Failure of pipes and hoses can result in hydrocarbon spills. Hydrocarbons can affect plants and animals in the marine ecosystem. Especially the heavier fuel oils may settle on beaches and can affect birds and other organisms. It also settles on ocean floors and can impact on benthic (bottom dwelling) organisms. Oil impacts algae, disrupts major food chains and decreases the yield of edible crustaceans. It also coats birds impairing their flight or reducing the insulating property of their feathers, thus making the birds more vulnerable to cold. Oil may also affect fish hatcheries in coastal waters and contaminate the flesh of commercially valuable fish in the marine environment around Walvis Bay. Oil spills can harm marine mammals such as seals, whales and dolphins.

Project Activity / Resource	Nature (Status)	(A1) Importance	(A2) Magnitude	(B1) Permanence	(B2) Reversibility	(B3) Cumulative	Environmental Classification	Class Value	Probability
Vessel Commissioning	Contamination from hazardous material spillages	2	-1	2	2	1	-10	-2	Probable
Daily Operations	Contamination from hazardous material spillages	4	-3	3	2	1	-42	-4	Probable

Desired Outcome: To prevent the contamination of the marine environment.

Actions

Prevention:

- Develop an emergency response plan for any accidental spill and ensure contact details of all emergency response teams and the Directorate of Maritime Affairs are readily available.
- Ensuring all staff are properly trained reduces the potential for impact.
- Tanks must be fitted with alarms to warn and prevent overfilling.
- Agreed quantities and pumping rates for bunker fuel transfer to the vessels must be confirmed and communicated properly, to eliminate spillage. Tanks must be inspected before the transfer of fuel commences.
- Fuel transfer may only be initiated when environmental conditions (e.g. Wind speed and wave heights) are within parameters that allows the safe transfer of fuel to minimise risks of spills.
- Pipes, hoses must be thoroughly inspected before starting with bunker fuel supply activities.
- Since accidental spills are always possible, recovery vessels, oil fences, and treatment chemicals must be prepared with a view to minimising dispersal and spills on the surface of the sea.
- Attempts to mitigate the human error factor would include the engineering of specific technologies that will work even in the event of human error.
- The Ministry of Work and, Transport, Directorate of Maritime Affairs, has been designated as the national responsible authority with regard to Oil Spill preparedness, response and cooperation for the Republic of Namibia. The National Marine Pollution Contingency Plan provides a framework for national response to an oil spill. The Plan involves a command structure under which the National Response Team would rapidly respond to any incident with appropriate mechanisms of mobilizing resources in the event of a spill, and even international resources in the event of a major oil spill. This plan is guided by international norms and practices. The plan outlines the responsibilities

for initiating and coordinating the necessary actions to affect protection and clean–up operations.

- Fuel transfers must be undertaken in accordance with approved operational areas, port requirements, and applicable environmental and maritime controls relevant to the Port of Walvis Bay and associated anchorage areas.
- Particular care must be taken to prevent spills that may affect sensitive coastal and marine environments such as the Walvis Bay Lagoon and nearby wetland and bird habitat areas.

Mitigation:

- Initiate the emergency response plan without delay.

Responsible Body:

- Proponent
- Contractors

Data Sources and Monitoring:

- National Marine Pollution Contingency Plan, MSDS and related maritime standards.
- Report all spills, no matter how small, to the Directorate of Maritime Affairs and other relevant authorities.
- A report should be compiled bi-annually of all spills or leakages reported. The report should contain the following information: date and duration of spill, product spilled, volume of spill, remedial action taken, and a copy of documentation in which spill was reported.

9.2 DECOMMISSIONING AND REHABILITATION

Decommissioning, as it relates to the proposed bunkering service, will entail the withdrawal of bunkering operations and the removal of the bunkering vessel or vessels from service. Decommissioning is not anticipated during the validity of the ECC. The potential process has, however, been considered should operations cease in future. If decommissioning takes place, it will involve the discontinuation of bunkering activities within the Port of Walvis Bay and associated anchorage areas, including the safe demobilisation, removal, sale or scrapping of the relevant vessel or vessels. Any residual fuel, lubricants, waste and operational consumables will be removed and managed in accordance with applicable national and international requirements. At the time of decommissioning, the EMP should be reviewed and updated to address the conditions applicable at the time and to ensure that all mitigation and management measures are implemented in accordance with statutory requirements.

9.3 ENVIRONMENTAL MANAGEMENT SYSTEM

The Proponent could implement environmental management system (EMS) aligned with recognised environmental management principles and the operational requirements applicable to the proposed bunkering service. At the heart of an EMS is the concept of continual improvement of environmental performance with resulting increases in operational efficiency, financial savings and reduction in environmental, health and safety risks. An effective EMS would need to include the following elements:

- A stated environmental policy which sets the desired level of environmental performance;
- An environmental legal register;
- An institutional structure which sets out the responsibility, authority, lines of communication and resources needed to implement the EMS;
- Identification of environmental, safety and health training needs;
- An environmental program(s) stipulating environmental objectives and targets to be met, and work instructions and controls to be applied in order to achieve compliance with the environmental policy;
- Periodic (internal and external) audits and reviews of environmental performance and the effectiveness of the EMS; and
- The EMP.

10 CONCLUSION

The proposed bunkering service within the Port of Walvis Bay and associated anchorage areas is expected to contribute positively to the local and national economy. The project may support employment in the maritime, logistics and associated service sectors, while also creating opportunities for skills development and training in line with recognised marine fuel handling standards. Ancillary industries, including vessel supply, maintenance, repair and other marine services in Walvis Bay, may benefit from increased demand. The project will further contribute to the national economy through the payment of taxes, levies and associated service fees.

All operational activities must comply with applicable Namibian legislation and, where no specific national standards exist, recognised international best practice should be applied. This includes adherence to the relevant IMO requirements for bunkering operations and marine environmental protection. All fuels and related materials must be handled in accordance with applicable MSDS requirements and operational procedures.

Noise emissions from operational vessels and associated equipment must comply with the Health and Safety Regulations of the Labour Act and WHO standards to minimise nuisance and prevent hearing loss. Fire prevention systems must meet statutory requirements and relevant international maritime safety standards, with adequate firefighting and spill response equipment maintained on board. Any waste generated from bunkering operations must be collected and disposed of at approved waste management facilities, with hazardous waste sent to a licensed hazardous waste disposal site in Namibia or an approved facility abroad, as appropriate.

The EMP (Section 9) should be used as an on-site reference document for the bunkering operations. Parties responsible for transgressing of the EMP should be held responsible for any rehabilitation that may need to be undertaken. The Proponent could use an in-house Health, Safety, Security and environment management system in conjunction with the EMP. All operational personnel must be taught the contents of these documents.

Should the Directorate of Environmental Affairs (DEA) find that the impacts and related mitigation measures, which have been proposed in this report are acceptable, an ECC may be granted to the Proponent. The ECC issued, based on this document, will render it a legally binding document which should be adhered to. Focus could be placed on Section 9, which includes an EMP for this project. It should be noted that the assessment process's aim is not to stop the activity, or any of its components, but to rather determine its impact and guide sustainable and responsible development as per the spirit of the EMA.

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Appendix A: Proof of Public Consultation

Notified IAPs

Name	Position	Organisation
David Uushona	Manager: Solid Waste and Environmental Management	Municipality of Walvis Bay
Nangula Amutenya	Environmental Coordinator	Municipality of Walvis Bay
Lovisa Hailaula	Environmental Officer	Municipality of Walvis Bay
Ephraim Nambahu	Town Planning Officer	Municipality of Walvis Bay
Jamie-Lee Lawrence	Town Planning Officer	Municipality of Walvis Bay
Stefanus Gariseb	SHEQ Manager	Namport
Latoya Shivute	Fisheries Biologist	Ministry of Agriculture, Fisheries, Water and Land Reform
	Executive Director	Ministry of Industries, Mines and Energy
Shapua Kalomo	Acting Deputy Director	Ministry of Works and Transport
	Executive Director	Ministry of Agriculture, Fisheries, Water and Land Reform

Registered IAPs

Name	Position	Organisation
Simeon Namweyna		Namibian Environment and Wildlife Society
John Grobler		John Grobler
Patrick Kohlstaedt		Manica Group Namibia

IAPs Notified by Hand Delivered Letter

MINISTRY OF FISHERIES AND MARINE RESOURCES
15 APR 2026
P.O. Box 912, SWAKOPMUND
NAMIBIA

Public Participation Notification: Environmental Assessment

Maruvo Marine: Bunkering Services within the Port of Walvis Bay

Name & Surname	Organisation/Address	Tel / Mobile	Email	Signature
Yolandi Angermund	Namport	Privacy Block		
LaTuya Shinte	MAFWLR			

Geo Pollution Technologies April 2026
Environmental Scoping Assessment and Environmental Management Plan for Fuel Bunkering Services within the Port of Walvis Bay, Erongo Region

Authorities Notification

Municipality of Walvis Bay

TEL.: (+264-61) 257411 ♦ FAX.: (+264) 88626368
CELL.: (+264-81) 1220082
PO BOX 11073 ♦ WINDHOEK ♦ NAMIBIA
E-MAIL: gpt@thenamib.com

To: **Interested and / or Affected Party / Neighbour** **15 April 2026**

Re: **ENVIRONMENTAL SCOPING ASSESSMENT AND ENVIRONMENTAL MANAGEMENT PLAN FOR FUEL BUNKERING SERVICES WITHIN THE PORT OF WALVIS BAY, ERONGO REGION**

Dear Sir/Madam

Geo Pollution Technologies (Pty) Ltd (GPT) was appointed by Maruvo Marine (Pty) Ltd (the Proponent) to undertake an environmental assessment for the proposed marine fuel bunkering service within the Port of Walvis Bay and associated operational areas. Fuel bunkering involves the ship-to-ship transfer of marine fuel for the refuelling of seafaring vessels, including vessels calling at the port and anchorage areas for operational support.

The assessment will be conducted according to the Environmental Management Act of 2007 and its regulations as published in 2012.

Project: Fuel Bunkering Services within the Port of Walvis Bay, Erongo Region

Proponent: Maruvo Marine (Pty) Ltd

Environmental Assessment Practitioner: Geo Pollution Technologies (Pty) Ltd

It is anticipated that the proposed bunkering activities will take place within the Port of Walvis Bay and associated operational areas. The proposed operation will involve the provision of a marine fuel transport and bunkering service, with Maruvo Marine acting as an intermediary between bulk fuel distributors and their clients by transporting fuel from the supplier to receiving vessels by means of a bunker vessel. The Proponent will therefore not act as a fuel wholesaler, retailer or fuel owner, but rather as a marine fuel transport and delivery service provider. Fuel will be sourced through approved supply arrangements, including existing onshore storage facilities in Walvis Bay and, where applicable, other marine fuel supply vessels, depending on operational requirements. The proposed service will involve the transport and transfer of Marine Gas Oil (MGO) and Very Low Sulphur Fuel Oil (VLSFO), with product specifications to be provided by the fuel supplier. The proposed services are expected to be rendered primarily to established fuel distributors operating under their own applicable environmental and operational approvals. In this regard, the Proponent will execute bunkering services as a contractor to the fuel wholesaler and will, in addition to complying with its own environmental obligations, ensure that its operations are undertaken in alignment with the applicable environmental and operational requirements of the relevant fuel wholesaler.

The bunkering process will generally involve the bunker vessel manoeuvring alongside a receiving vessel, where it will be safely secured prior to transfer. A transfer hose will then be connected to the receiving vessel's manifold, and fuel will be pumped into the vessel's storage tanks under controlled conditions. These activities require trained and experienced operational personnel, and continuous monitoring will be undertaken throughout the transfer process to prevent leakage or spillage. Once the transfer has been completed, the hose will be drained and disconnected, and the bunker vessel will safely disengage from the receiving vessel. Throughout the operation, strict safety procedures will be followed by both vessels, including fire prevention measures, communication protocols, and spill prevention and response procedures. Environmental compliance monitoring and stakeholder liaison will continue throughout the operational phase.

Interested and affected parties or neighbours are invited to register with the environmental consultant to receive further documentation and communication regarding the project. Please register at:

Fax: 088-62-6368 or **E-Mail:** bunkering@thenamib.com.

Ministry of Industries, Mines and Energy

GEO Pollution Technologies

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To: **The Executive Director**
Ministry of Industries, Mines and Energy
Private Bag 13297
Windhoek

14 April 2026

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Ministry of Works and Transport

GEO Pollution Technologies

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14 April 2026

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Ministry of Agriculture, Fisheries, Water and Land Reform

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To: **The Executive Director** **15 April 2026**
Ministry of Agriculture, Fisheries, Water and Land Reform
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MINISTRY OF FISHERIES AND MARINE RESOURCES
15 APR 2026
P.O. Box 912, SWAKOPMUND
NAMIBIA

Press Notice: The Namibian Sun 13 and 20 April 2026

NEWS IN SHORT

Govt steps up flood relief in Zambezi

The agriculture ministry has ramped up its response to flooding in the Zambezi region, deploying machinery to rescue over 57 tonnes of crops and support affected farmers. So far, 14 farmers have benefited from the intervention across multiple communities.

The intervention will continue until 17 April and includes the provision of two 10 000-litre water tanks and mobile sanitation facilities at relocation centres, highlighting efforts to protect livelihoods and maintain essential services for displaced households.

-ELIOT IPINGE

PHOTO: CONTRIBUTED

Police investigate fatal crash involving regional commander

A culpable homicide case has been opened after a pedestrian was killed in a road accident in Witvlei on 4 April involving Omaheke regional police commander Commissioner Heinrich Tjiveze. According to a police report, Tjiveze was on duty and driving a service vehicle at the time.

"It is alleged that the pedestrian was walking in the middle of the road at the time of the collision on the main road in the Witvlei area," a police report stated.

The deceased has been identified as Otto Giovani Daniel (23). Police investigations are ongoing to establish the full circumstances surrounding the incident.

-STAFF REPORTER

FUEL LAW DEBATE MISSES THE ANGOLA QUESTION

Namibia's fuel fix may lie across the border

With pump prices biting and Namibian jobs on the line, **the case for formalising Angolan fuel imports has never been stronger.**

WONDER GUCHU
WINDHOEK

Every litre consumed in Namibia still carries the weight of decisions made far beyond its borders. The result is rising pump prices, rising transport costs and a slow squeeze on households and businesses. And if left unchecked, massive job losses.

Yet just across the northern border lies Angola, an OPEC member with some of the continent's cheapest fuel.

The contradiction is that Namibia is discussing reforming its fuel law – but not addressing shortages.

The current system is anchored in the Petroleum Products and Energy Act 13 of 1990, crafted at a time when Namibia's primary concern was security of supply, not flexibility of sourcing. The Act gives the minister sweeping powers to regulate, and where necessary prohibit, the purchase, sale, supply, acquisition, storage and transportation of petroleum products. Under it, only licensed wholesalers may import fuel in bulk, subject to permits and regulatory oversight, and all imports must comply with approved specifications.

That structure has produced a tightly managed system organised around coastal imports and long-standing supply arrangements. It has delivered stable supply while protecting revenue collection and consumer standards. Only now the world has changed.

Quality concerns

Namibian authorities have consistently defended their position on Angolan fuel on grounds of quality control, maintaining that controls are necessary to ensure compatibility with modern engines, protect consumers and uphold environmental standards.

In 2022, former National Planning Commissioner director general Oberth Kandjoze told the Observer that importing fuel from Angola would not necessarily reduce costs and could require additional processing. While it is not clear exactly how much it would cost to bring ngungula – illegal cross-border fuel – up to standard, its proximity and guaranteed availability suggest it would not cost much.

In November 2018, former mines and energy minister Tom Alweendo warned that ngungula deprives the state of revenue, compromises public safety and poses an environmental risk. "If left unattended, the sale of smuggled fuel at cheaper prices has the high potential of driving existing service station owners out of the economy," he said.

His then deputy, Kornelia Shilunga, noted that Angola uses diesel at 2 000 parts per million (ppm), compared to Namibia's 50 ppm and 10 ppm standards.

Bigger picture

What Shilunga said is not a problem compared to what could happen if fuel prices keep rising and companies are forced to send people home.

In March, energy ministry executive director Moses Pakote told New Era that the system is designed to keep unregulated fuel out of the formal market, relying on licensing controls, border enforcement, inspection and sampling, and inter-agency cooperation.

Parliament can address all these concerns in the ongoing debate on amending the Petroleum Act – to cushion people against rising prices, rather than focusing solely on the upstream petroleum unit. The amendments should create a controlled opening, not a free-for-all, without collapsing the regulated system that licensed companies rely on.

The law can be amended to allow designated cross-border import licences specifically for fuel sourced from Angola. These would sit alongside existing supply chains, with strict conditions on volumes, quality testing and points of entry. Government should build infrastructure to ensure that ngungula meets sulphur specifications and other technical standards.

A variable levy mechanism for such imports could allow limited relief at the pump without dismantling the levy system that funds roads and infrastructure. Quotas or phased integration could prevent cross-border fuel from flooding the market and undercutting established service stations.

Formalising northern fuel depots and testing facilities would shift informal trade into a regulated stream, ensuring quality compliance while reducing transport costs associated with coastal imports.

PROPERTY FIRM REJECTS ALLEGATIONS OVER OSONA VILLAGE

PHILLIPUS JOSEF
WINDHOEK

A document submitted to the Okahandja municipality has raised concerns about governance, infrastructure and affordability at the Osona Village development – allegations the Osona Property Management Company (OPMC) has firmly denied.

The document, seen by Namibian Sun, was prepared to brief newly appointed councillors on alleged governance and infrastructure risks linked to the project. It was handed over on 25 March and was authored by an individual who asked to remain anonymous.

Among the claims are frequent power outages affecting residents, particularly during the rainy season.

Namibian Sun could not independently verify all the allegations contained in the document.

The document alleges that more than N$15 million has been spent on interim wastewater solutions while a permanent plant remains outstanding, raising concerns about environmental risks and long-term sustainability.

On governance, it alleges that no formal procurement policies have been in place for more than a decade, with service providers allegedly appointed without transparent processes.

It also raises concerns about the concentration of housing construction among a limited number of developers, questioning whether this aligns with the project's original goal of supporting small and medium enterprises.

The document also questions whether rising land and housing prices remain in line with the development's original affordability targets.

It asks councillors to consider whether Osona Village is still operating as a public-interest housing initiative or has shifted to a private development model.

Allegations denied

OPMC chief executive officer Alex Goethje last week categorically rejected the claims contained in the document, describing them as false, malicious and unsubstantiated.

Goethje said Osona Village is a private development undertaken by Preferred Land Development Holding (PLDH), with partial funding from the Government Institutions Pension Fund (Gipf), and that it remains compliant with its original mandate.

He said bulk infrastructure upgrades are ongoing, including the construction of a permanent wastewater treatment plant expected to be completed by the end of 2026.

Goethje added that a second electrical supply point was completed in 2025 to improve capacity, while further upgrades are planned in collaboration with NamPower.

Addressing concerns about electricity outages, Goethje attributed recent disruptions to lightning strikes affecting both NamPower's distribution lines and Osona's internal network.

He underlined that repairs were completed within days.

He also dismissed claims of limited competition, saying the development remains open to any qualifying developer and that participation depends on individual capacity and performance.

On governance and labour matters, Goethje said OPMC complies with all applicable laws and standards.

Gipf investigates claims

Gipf, which invested in the development through its unlisted investment portfolio, said it continues to expect the project to align with its developmental objectives, particularly the provision of accessible housing for civil servants and middle-income earners.

Gipf spokesperson Edwin Tjiramba said the fund does not manage day-to-day operations, which are handled by appointed fund managers and project-level entities.

However, he said Gipf is engaging the relevant fund manager to assess the concerns raised, including affordability, infrastructure sustainability and procurement practices.

"We take all stakeholder concerns seriously and have initiated engagement to obtain a comprehensive understanding of the matter," he said.

Tjiramba added that the fund has requested information on contractor allocation, procurement processes and whether current development practices support broader participation by small and previously disadvantaged developers.

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Ministry rejects claims of exclusive Sossusvlei deal

ELLANIE SMIT
WINDHOEK

A dispute over new access regulations to Sossusvlei and Deadvlei has intensified, with the tourism ministry pushing back against claims that it has altered the terms of its 2024 concession agreement.

Responding to questions raised by the Tour and Safari Association of Namibia (Tasa), the ministry confirmed that the contract awarded in February 2024 remains unchanged and non-exclusive.

Ministry spokesperson Vilho Hangula stressed that no amendments or conversions were made after the initial award, directly countering concerns raised by industry stakeholders.

At the centre of the controversy are new rules set to take effect on 1 May.

These regulations prohibit self-drive access beyond the 2x4 parking area at Sossusvlei, requiring visitors to rely on authorised shuttle services to reach Deadvlei.

Only two categories of operators will be permitted to provide these services: Grow Namibia, trading as About Deadvlei Sossusvlei Management, and registered tour guides employed by lodges within and around the Namib-Naukluft National Park.

Despite the restriction on self-drives, the ministry maintains that the concession remains non-exclusive.

Lodges operating in and around the park will still be allowed to transport their own clients using 4x4 vehicles to the Deadvlei parking area, in line with the original agreement, the ministry said.

Hangula further emphasised that the new measures are consistent with the signed contract and will now be fully implemented.

The ministry also cited Section 17 of the Nature Conservation Ordinance 4 of 1975, which empowers the minister to determine who may provide services within protected areas.

Industry views

However, Tasa has strongly challenged the ministry's position, warning that the new regulations announced this week introduce what amounts to an exclusive shuttle arrangement.

In a formal letter sent to the ministry, the association argued that the original request for proposals clearly distinguished between exclusive and non-exclusive rights.

Its exclusivity was only on the development and operation of a campsite and kiosk while explicitly stating that shuttle services between the 2x4 parking area and Deadvlei would remain non-exclusive. The association further pointed to previous ministry statements from September 2024 and December 2025, which assured operators that self-drive visitors and registered tour companies would continue to access the 4x4 parking area with suitable vehicles.

These assurances, Tasa said, were consistent with long-standing practices within the park.

"The new public notice represents a significant departure from the tender framework and the ministry's own public assurances," the association stated, adding that operators have based international bookings and logistical planning on those commitments.

Tasa also raised concerns over a lack of engagement, revealing that a formal request for a meeting with tourism minister Indileni Daniel, submitted in February, has gone unanswered. The request covered a range of issues, including concession governance and access to key tourism sites.

The association warned that the absence of consultation and communication has created widespread uncertainty across the tourism sector, both locally and internationally.

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NEW PROJECTS TARGET MALARIA, CANCER AND HEALTH EMERGENCIES

Japan-funded N$18.4m health projects target vulnerable Namibians

Namibia rolls out three health projects to improve **care for vulnerable and at-risk populations.**

ELIZABETH KHEIBES
WINDHOEK

Namibia launched three major health projects worth N$18.4 million last week, aimed at strengthening emergency preparedness, curbing malaria and improving cancer diagnostics, with a focus on vulnerable and underserved communities.

The projects, funded through Japan's supplementary budget and implemented in partnership with the United Nations, were officially launched in Windhoek on Thursday.

Speaking at the launch on behalf of health minister Dr Esperance Luvindao, ministry executive director Penda Ithindi said the initiatives are critical in addressing recurring public health challenges.

"Today marks a significant step forward in our commitment to strengthen integrated primary health care and public health emergency preparedness and response, while improving access to safe water, sanitation and hygiene, to reduce morbidity and mortality in affected communities in our country," he said.

INTERNATIONAL SUPPORT: Health ministry executive director, Penda Ithindi; Japan's ambassador, Shinichi Asazuma; UN resident coordinator, Hopolang Phororo, and other stakeholders during the handover ceremony. PHOTO: ELIZABETH KHEIBES

Priority projects

"These projects were identified as key priorities to address the recurrent public health emergencies driven by climate change, cross-border disease transmission, water scarcity and a growing burden of non-communicable diseases like cancer, aligning well with our national priorities," he said.

The largest programme, valued at N$12.34 million, will be implemented in Kunene, Omusati and Otjozondjupa regions.

Communities face heightened exposure to diseases such as malaria, measles and cholera due to border proximity, population movement and limited access to services.

At least 118 825 people are expected to benefit from strengthened health services across eight hospitals, while 14 630 people will gain access to safe water and sanitation.

Water infrastructure will be installed at five boreholes serving schools, health facilities, and communities, with additional support reaching 18 schools and 2 200 vulnerable households.

The second project, valued at N$2.18 million, targets malaria preparedness in Kavango East, Kavango West, Zambezi and Ohangwena regions.

It will provide health education to more than 42 000 people and distribute long-lasting insecticide-treated mosquito nets to at least 700 at-risk individuals, including pregnant women and children under five.

The initiative also includes improved malaria data management, updated treatment protocols, and enhanced national reporting systems.

The third project, costing N$3.93 million, focuses on strengthening cancer diagnostics and treatment in Windhoek by procuring seven advanced ultrasound machines for Windhoek Central Hospital.

The equipment will support the diagnosis and staging of cancers, including breast, prostate and lymphoma, while reducing reliance on private healthcare and easing diagnostic backlogs.

Namibia-Japan health ties

Ithindi stressed that the funding "is not just about buying commodities and equipment; it is about providing better access to quality health services and, most importantly, strengthening the health system to improve access to quality health care services".

He added that the support from Japan reflects a broader commitment to Namibia's health sector. "It is an investment in resilience, in equity and in the future well-being of Namibians."

Japan's ambassador to Namibia, Shinichi Asazuma, said the projects form part of long-standing cooperation between Japan, Namibia, and UN agencies, with 27 trilateral initiatives implemented since 2013 at a value exceeding US$23 million.

"The equipment for this project will be supplied by a Japanese company, Toshiba, and they will also serve as technical partners, offering service contracts and facilitating training to strengthen the capacity of Namibian healthcare professionals," he explained.

With implementation set over the next 12 months, the projects are expected to improve access to healthcare, strengthen system resilience, and deliver tangible benefits to communities most at risk of public health emergencies.

PUBLIC PARTICIPATION NOTICE
ENVIRONMENTAL SCOPING ASSESSMENT AND ENVIRONMENTAL MANAGEMENT PLAN FOR FUEL BUNKERING SERVICES WITHIN THE PORT OF WALVIS BAY

Geo Pollution Technologies (Pty) Ltd was appointed by Maruvo Marine (Pty) Ltd (the Proponent) to undertake an environmental assessment (EA) for the proposed provision of marine fuel transport and bunkering services within the Port of Walvis Bay and associated operational areas. The proposed service involves the ship-to-ship transfer of marine fuel to seafaring vessels, with the Proponent acting as an intermediary transport and delivery service provider between bulk fuel distributors and their clients. Additional and location information pertaining to the project and proposed operations can be obtained at:

http://www.thenamib.com/projects/projects.html

The environmental assessment will be conducted according to the Environmental Management Act of 2007 and its regulations as published in 2012.

Interested and affected parties are invited to register with the environmental consultant to be provided with the opportunity to share comments, issues or concerns related to the project, for consideration in the EA. Requests for additional information and comments and concerns should be submitted to Geo Pollution Technologies by 27 April 2026.

André Faul
Geo Pollution Technologies
Tel: +264-61-257411
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E-Mail: bunkering@thenamib.com

Press Notice: Die Republikein 13 and 20 April 2026

Onderwyser kry ongeveer N$1 m. ná 'onbillike' ontslag

Afgedank ná hy glo meisie op boude slaan

Die arbeidsbeslissing het verskeie prosedurele onreëlmatighede bevind in die manier waarop die dissiplinêre proses hanteer is.

Eliot Ipinge

'n Voormalige onderwyser van Noordgrens Sekondêre Skool by Rundu wat ontslaan is weens wangedrag en omdat hy na bewering 'n leerling streepsuiker gegee het, het sy ontslag suksesvol betwis.

Die arbeidsarbiter Aldrin Munembo het op 15 Maart beslis dat Hendrick Bronner se afdanking prosedureel onbillik was. Hy het gelas dat die skool aan die voormalige onderwyser net meer as N$977 000 vir verlore verdienste en ander opgehoopte voordele moet betaal, insluitend skeidingsvergoeding.

Bronner, wat sedert 2003 by die skool onderrig gegee het, is in Oktober 2022 ontslaan ná bewerings dat hy 'n leerling geslaan het, asook oor wangedrag wat terugdateer na 2020.

Die voorval het na bewering in die klas plaasgevind toe die leerling, toe in graad 9, Bronner tydens 'n aardrykskundeles genader het.

Hy het haar na bewering een keer op die rug en een keer op die boude geslaan, volgens getuienis wat by 'n verhoor gelewer is. Haar klasmaats het die weergawe by die dissiplinêre verhoor ondersteun, met die leerling wat gesê het sy was ontsteld.

Bronner het in Oktober 2020 'n mondelinge waarskuwing ontvang, geldig vir ses maande en is uit sy pos as vlugbalafrigter verwyder.

Hierdie waarskuwing is aangeteken en deur skoolowerhede erken. In Augustus 2022, meer as 'n jaar later, het die ministerie van onderwys egter vir Bronner formeel op dieselfde saak aangekla, wat gelei het tot 'n dissiplinêre verhoor op 20 Oktober 2022 en sy uiteindelike afdanking.

DUBBELE STRAF

Bronner het teen die ontslag by die kantoor van die arbeidskommissaris geappelleer en aangevoer dat die dissiplinêre proses foutief was.

Volgens Munembo se arbitrasiebeslissing het "die optrede van die respondent onbillike prosedures en onbillike arbeidspraktyke, asook dubbele straf behels".

Munembo het gesê Bronner het reeds vroeër 'n mondelinge waarskuwing vir dieselfde voorval ontvang, maar in 2022 weer op dieselfde bewerings aangekla is sonder nuwe bewyse wat 'n vars dissiplinêre optrede regverdig.

"Eenvoudig gestel, die beginsel van dubbele straf hou voor dat dit in die werksomgewing onbillik is dat 'n werknemer aan twee verskillende dissiplinêre maatreëls onderwerp word met betrekking tot dieselfde oortreding," het Munembo verduidelik.

Die beslissing het ook verskeie prosedurele onreëlmatighede uitgelig in die manier waarop die dissiplinêre proses hanteer is.

Munembo het bevind dat die dissiplinêre komitee versuim het om die volle openbaarmaking van die voorlopige ondersoekverslag toe te laat en nie nakoming van die staatsdienspersoneelreëls verseker het nie.

Die arbiter het daarop gewys dat kritieke dokumente en die verwysingsraamwerk nie voldoende aan Bronner of sy verteenwoordiger voor die verhoor verskaf is nie, wat sy vermoë om vir sy verdediging voor te berei, beperk het.

Munembo het verder aangedui dat die dissiplinêre komitee voorlopige besware wat deur Bronner se regspan geopper is, geïgnoreer het.

Die arbiter het waargeneem dat die voorsitter van die dissiplinêre verhoor nie oor kernprosedurele kwesties beslis het toe dit geopper is nie, wat die integriteit van die proses verder ondermyn het. Munembo het ook 'n vertraging van twee jaar tussen die beweerde voorval en die verhoor gekritiseer en beslis dat dit nie aan 'n billike en tydige proses voldoen het nie. Hoewel bewyse voorgehou is om die bewerings te staaf, insluitend verklarings van die leerling en getuies, het die arbiter beslis dat prosedurele gebreke die ontslag onbillik gemaak het.

Die voormalige onderwyser, Hendrick Bronner, sal verlore verdienste ontvang wat terugdateer nadat hy in Oktober 2022 ontslaan is, plus ander voordele.
FOTO VERSKAF

TERUGBETALING IN APRIL

Volgens die beslissing is Bronner geregtig op vergoeding in plaas van verlore verdienste, insluitend sy agterstallige salaris van N$27 877.24 per maand vanaf sy ontslag tot 25 Maart, wat in totaal net meer as N$836 000 beloop.

Hy is ook geregtig op skeidingsvergoeding van een week se salaris per diensjaar vir sy 22 jaar diens, wat op meer as N$141 000 te staan kom.

Die regering moet ook alle uitstaande pensioenbydraes en opgehoopte aftreevoordele betaal.

Die totale bedrag wat aan Bronner verskuldig is, is N$977 858.69, wat op of voor 30 April betaal moet word.

Die arbiter het erken dat heraanstelling moontlik nie meer uitvoerbaar is nie, aangesien Bronner in Januarie die aftree-ouderdom van 60 bereik het.

"'n Tydperk van drie jaar het verloop, wat tot onreg teenoor beide die werkgewer en die ander persoon wat moontlik in die aansoeker se pos aangestel is, kan lei," het Munembo gesê.

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Die huidige subsidietydperk vir entstof teen knopvelsiekte het tot 31 Maart 2026 gestrek, met 'n nuwe siklus wat tot 31 Maart 2027 sal voortduur.
FOTO TER ILLUSTRASIE/ PROAGRIMEDIA

Subsidie vir entstof teen knopvelsiekte beskikbaar

Die nasionale subsidie vir entstof teen knopvelsiekte wat deur die Lewendehawe en Lewendehaweprodukteraad van Namibië (LLPBN) ingestel is, is steeds van krag.

Die program bied 'n 15%-subsidie op goedgekeurde entstowwe en is daarop gemik om beesprodusente te ondersteun in die beskerming van hul kuddes teen hierdie siekte.

Die subsidie is beskikbaar aan produsente wat eerste in die ry staan met beperkte fondse per tydperk. Produsente word dus aangemoedig om betyds aansoek te doen om voordeel uit die program te trek.

Om te kwalifiseer, moet boere by die LLPBN geregistreer wees, goedgekeurde entstowwe aankoop, die oorspronklike kwitansie (of 'n gesertifiseerde afskrif) behou, hul beeste ent en 'n eis indien saam met 'n onlangse bankbevestigingsbrief.

Eise is beperk tot 350 dosisse per produsent per subsidietydperk en alle aansoeke word teen die nasionale kudde-databasis geverifieer voordat betaling gemaak word.

Die huidige subsidietydperk het tot 31 Maart 2026 gestrek, met 'n nuwe siklus wat tot 31 Maart 2027 sal voortduur. Betalings word gewoonlik binne ongeveer een maand ná suksesvolle verifikasie gemaak.

Produsente word deur die Namibië Landbou-unie (NLU) aangemoedig om van hierdie inisiatief gebruik te maak – nie net om koste te verminder nie, maar ook om kuddegesondheid te versterk en die risiko's verbonde aan knopvelsiekte te beperk.

Vir meer inligting of hulp met eise, kan boere die LLPBN via WhatsApp of selfoon by 081 465 4781 of per e-pos by lsd@nammic.com.na kontak.

- NLU

» Pendelaars worstel daagliks met uitdagings

Hoofstad se 'swart gat' van vervoer

Inwoners wat Windhoek se openbare vervoer gebruik, maak staat op 'n stelsel wat hulle tans faal.

› Elizabeth Kheibes

FOTO TER ILLUSTRASIE/ARGIEF

Windhoek se stedelike mobiliteitstelsel word beskryf as in 'n "swart gat" van min vertroue en swak prestasie, met kenners wat waarsku dat sonder beslissende, gekoördineerde optrede, die situasie vir duisende pendelaars sal aanhou versleg.

Dominic Wilhelm van die Global Trust Foundation het verlede week tydens 'n hoëvlak-vervoerbespreking gesê die hoofstad se uitdagings is egter nie uniek nie. Hy het gesê dit weerspieël 'n breër wêreldwye krisis in stede wat vinnig uitbrei.

Wilhelm het beklemtoon Windhoek se grootste struikelblok is nie finansiering of infrastruktuur nie, maar eerder die aftakeling van vertroue in die stelsel.

"Die manier waarop jy oor jou eie openbare vervoer of jou eie openbare mobiliteitstelsel praat, plaas jou in die swartgat-kwadrant," het Wilhelm gesê, met verwysing na terugvoering van belanghebbendes wat deur 'n onlangse opname ingesamel is.

Hy het verduidelik stelsels wat gekenmerk word deur beide lae vertroue en lae prestasie kan nie doeltreffend funksioneer nie, en bygevoeg: "Niks kom lewend daaruit nie."

Ten spyte van dié somber diagnose het Wilhelm opgemerk dat daar 'n sterk bereidwilligheid onder belanghebbendes is om op te tree.

"Die laaste ding wat jy gedoen het, is om op te gee. Die laaste ding wat jy is, is pessimisties, wat merkwaardig is," het hy gesê.

Vertroue in uitvoering bly egter kritiek laag.

"Julle praat van die stelsel self asof dit nie in staat is om te lewer nie. Met ander woorde, daar is lae integriteit, baie praatjies en geen optrede nie."

Wilhelm het aangevoer die heropbou van die stelsel vereis 'n verskuiwing in fokus na vertroue as die fondament van hervorming.

"Vertroue is die onderliggende bate, nie geld nie, nie die gehalte van jou

Dominic Wilhelm
GLOBAL TRUST FOUNDATION

"Word dade met woorde versoenbaar, word besluite in openbare belang geneem en het instellings die vermoë om te lewer?"

paaie nie, nie jou burgerlike infrastruktuur nie, maar vertroue is die onderliggende bate waarvan materiële sukses afhang," het hy gesê.

Hy het na drie kernbeginsels verwys wat betroubaarheid bepaal: Integriteit, welwillendheid en vermoë.

"Word dade met woorde versoenbaar, word besluite in openbare belang geneem en het instellings die vermoë om te lewer?" het hy gevra.

Volgens Wilhelm, as hierdie elemente teenwoordig is, ontstaan vertroue natuurlik.

"As ons hulle in mekaar vind, dan ontstaan daardie ding waarna ons deur die eeue heen gesoek het, onvermydelik, en dit verander alles. Dit word vertroue genoem."

Hy het die opvatting dat finansiering 'n beperking is, verder uitgedaag en na wêreldwye kapitaalmarkte gewys.

"Daar is geen tekort aan kapitaal op die planeet nie. Dit is belêbare projekte wat skaars is. Nie die geld nie, dit is die vraag, nie die aanbod nie."

In plaas van grootskaalse, langtermynplanne, het Wilhelm gevra vir eenvoudige, onmiddellike optrede om vordering te ontsluit.

"Een sigbare gedeelde verbintenis tussen alle rolspelers, een gesamentlik ooreengekome korttermyn-optrede met genoemde eienaarskap en tydlyn en een koördineringsmeganisme," het hy gesê.

"Nie 27 nie, nie tien nie, net een."

Stad Windhoek (CoW) se strategiese uitvoerende beampte vir stedelike en vervoerbeplanning, Pierre van Rensburg, het die dringendheid van die krisis beaam en die daaglikse stryd waarmee pendelaars te kampe het, beklemtoon.

"Die uitdaging is nie teoreties nie, dit word beleef, werklik en meedoënloos, dag na dag," het hy gesê.

DONKER PRENTJIE

Van Rensburg het 'n donker prentjie van die pendelaarervaring geskets en lang, onsekere reise beskryf wat voor sonsopkoms begin.

"Haar dag begin lank voor sonsopkoms, nie om voor te berei vir werk nie, maar om te veg vir toegang tot werk," het hy gesê.

Volgens hom moet baie inwoners meeding om beperkte en onbetroubare vervoeropsies.

"Sy moet probeer om 'n stampvol bus om 5:30 in die oggend te haal, of in 'n taxi vir plek skarrel, sonder waarborg van betroubaarheid of selfs beskikbaarheid."

Die las duur voort na werk, met lang vertragings in die terugtog huis toe.

"Na 'n volle dag van werk, staar sy dan dieselfde onsekerheid op die reis huis toe in die gesig, en kom 19:00 of selfs 19:30 eers weer by die huis," het hy gesê.

Van Rensburg het beklemtoon sulke ervarings is nie geïsoleerd nie.

"Dit is nie die uitsondering nie. Dit is die daaglikse ervaring van duisende pendelaars wie se ekonomiese deelname afhang van 'n stelsel wat hulle tans in die steek laat."

Hy het gewaarsku dat sonder gekoördineerde ingrypings die situasie sal vererger namate verstedeliking versnel.

"Opeenhoping, ongelykheid en ondoeltreffendheid sal net vererger sonder beslissende en gekoördineerde optrede," het hy gesê.

Beide sprekers het saamgestem die pad voren toe lê in die omskakeling van voorneme in sigbare, praktiese optrede, met Wilhelm wat beklemtoon dat selfs 'n klein groepie betekenisvolle verandering kan aandryf.

"Jy benodig net 3,5%," het hy gesê.

"As ons dit wat jy reeds weet in optrede kan omskakel, is daar 'n hoë vlak van waarskynlikheid dat jy die uitdaging die hoof sal bied."

- elizabeth@nmh-hub.com.na

Geen borg vir Nust-administrateur

› Rita Kakelo

'n Administrateur by die Namibië Universiteit vir Wetenskap en Tegnologie (Nust), Maria Hengari (41), het Donderdag haar eerste verskyning in die Windhoekse landdroshof gemaak ná haar inhegtenisneming in verband met 'n beweerde bedrogskema van N$2,6 miljoen.

FOTO ARGIEF

Hengari staar aanklagte van bedrog en die oortreding van die wet op die voorkoming van georganiseerde misdaad (Poca) in die gesig, wat verband hou met die beweerde verkryging, besit en gebruik van opbrengste uit onwettige bedrywighede.

Volgens die klagstaat spruit die bewerings uit voorvalle wat tussen 2021 en 2024 in Windhoek plaasgevind het. Na bewering het Hengari onregmatig en met die opset om bedrog te pleeg aan Nust en sy beursbeamptes voorgegee dat betalings van ongeveer N$2,6 miljoen deur sowat 130 studente gemaak is.

Nust het na bewering verliese van meer as N$2,6 miljoen gely.

Staatsaanklaer Reinhard Kamatoto beweer Hengari het in haar hoedanigheid as administrateur met toegang tot die universiteit se finansiële stelsel, betalings op studenterekeninge verwerk om te laat blyk dat hul uitstaande klasgeld vereffen is.

Die geld is egter na bewering nie aan die universiteit oorbetaal nie. In plaas daarvan word beweer dat studente hul betalings direk in Hengari se persoonlike bankrekening en e-wallet gemaak het in ruil daarvoor dat hul skuld op die stelsel verwyder word.

Hengari het die hof meegedeel dat sy van voorneme is om vir regshulp aansoek te doen.

Die staat staan borgtog teen met verwysing na die erns van die oortreding, die sterk saak teen haar en die risiko van inmenging met ondersoeke wat nog in 'n vroeë stadium is.

Die staatsaanklaer het verder aangevoer dat die toestaan van borgtog nie in die belang van regspleging sou wees nie.

Hengari bly in aanhouding. Landdros Immanuel Udjombala het die saak tot 3 Junie uitgestel.

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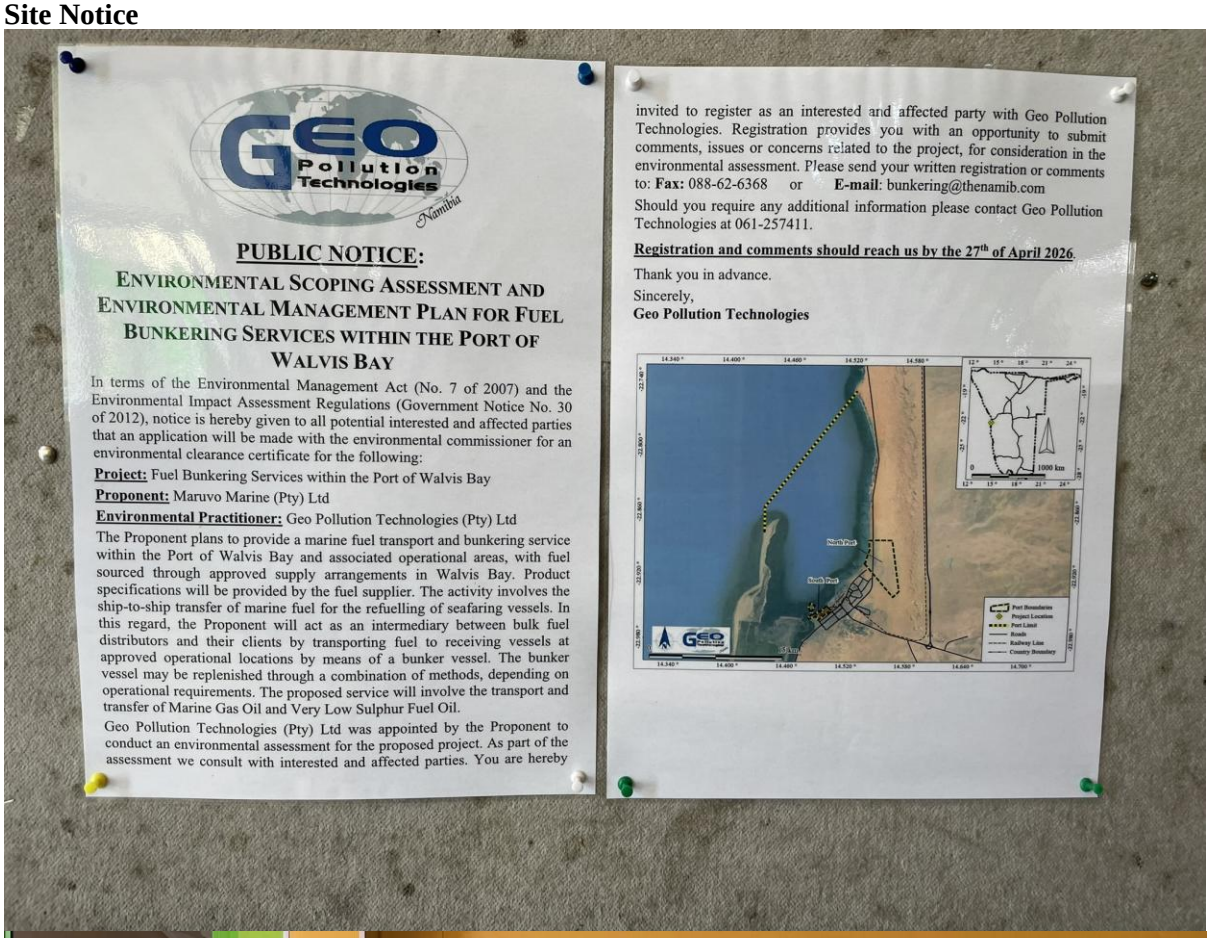


PUBLIC NOTICE:

ENVIRONMENTAL SCOPING ASSESSMENT AND ENVIRONMENTAL MANAGEMENT PLAN FOR FUEL BUNKERING SERVICES WITHIN THE PORT OF WALVIS BAY

In terms of the Environmental Management Act (No. 7 of 2007) and the Environmental Impact Assessment Regulations (Government Notice No. 30 of 2012), notice is hereby given to all potential interested and affected parties that an application will be made with the environmental commissioner for an environmental clearance certificate for the following:

Project: Fuel Bunkering Services within the Port of Walvis Bay

Proponent: Maruvo Marine (Pty) Ltd

Environmental Practitioner: Geo Pollution Technologies (Pty) Ltd

The Proponent plans to provide a marine fuel transport and bunkering service within the Port of Walvis Bay and associated operational areas, with fuel sourced through approved supply arrangements in Walvis Bay. Product specifications will be provided by the fuel supplier. The activity involves the ship-to-ship transfer of marine fuel for the refuelling of seafaring vessels. In this regard, the Proponent will act as an intermediary between bulk fuel distributors and their clients by transporting fuel to receiving vessels at approved operational locations by means of a bunker vessel. The bunker vessel may be replenished through a combination of methods, depending on operational requirements. The proposed service will involve the transport and transfer of Marine Gas Oil and Very Low Sulphur Fuel Oil.

Geo Pollution Technologies (Pty) Ltd was appointed by the Proponent to conduct an environmental assessment for the proposed project. As part of the assessment we consult with interested and affected parties. You are hereby invited to register as an interested and affected party with Geo Pollution Technologies. Registration provides you with an opportunity to submit comments, issues or concerns related to the project, for consideration in the environmental assessment. Please send your written registration or comments to: **Fax:** 088-62-6368 or **E-mail:** bunkering@thenamib.com

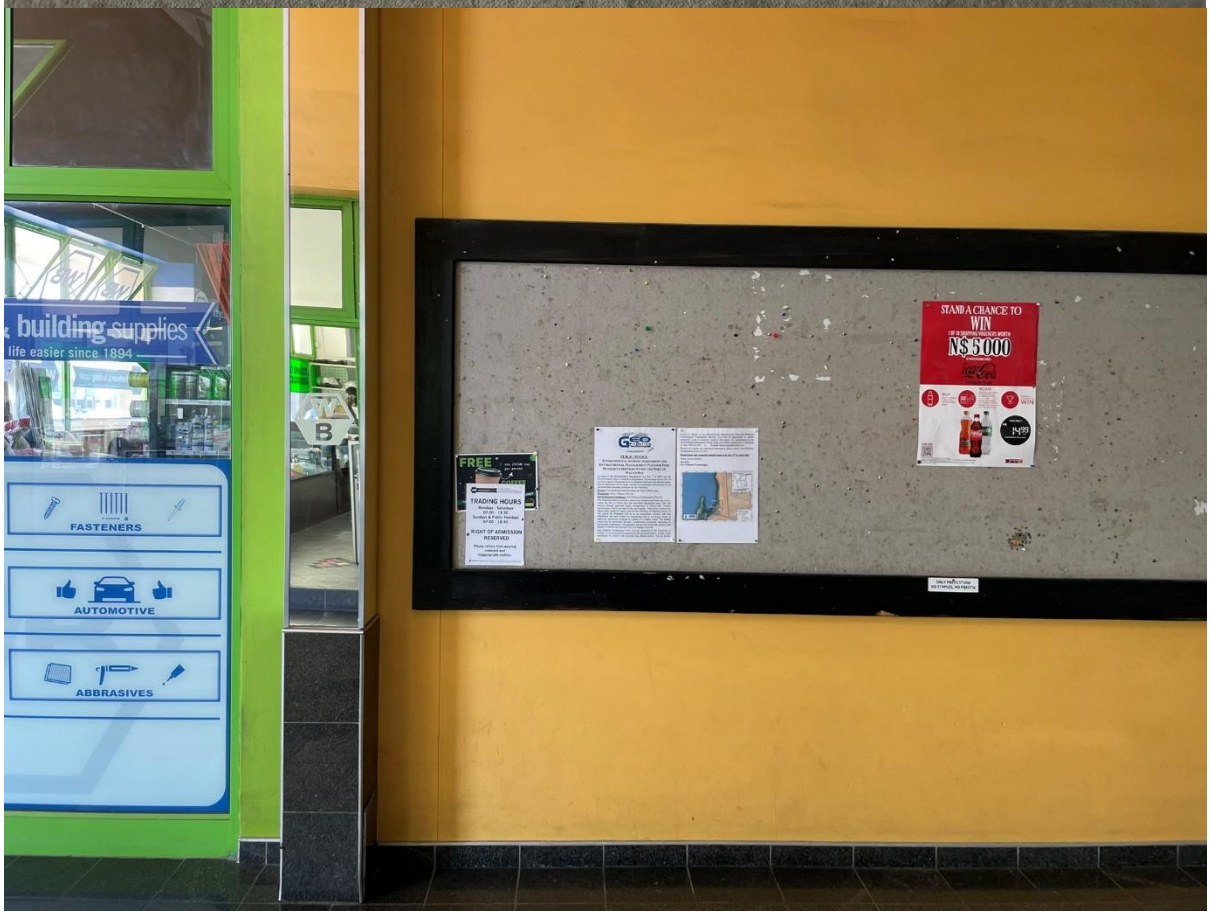
Should you require any additional information please contact Geo Pollution Technologies at 061-257411.

Registration and comments should reach us by the 27th of April 2026.

Thank you in advance.

Sincerely,

Geo Pollution Technologies



Appendix B: Consultant's Curriculum Vitae

ENVIRONMENTAL SCIENTIST **André Faul**

André entered the environmental assessment profession at the beginning of 2013 and since then has worked on more than 270 Environmental Impact Assessments including assessments of the petroleum industry, harbour expansions, irrigation schemes, township establishment and power generation and transmission. André's post graduate studies focussed on zoological and ecological sciences and he holds a M.Sc. in Conservation Ecology and a Ph.D. in Medical Bioscience. His expertise is in ecotoxicological related studies focussing specifically on endocrine disrupting chemicals. His Ph.D. thesis title was The Assessment of Namibian Water Resources for Endocrine Disruptors. Before joining the environmental assessment profession he worked for 12 years in the Environmental Section of the Department of Biological Sciences at the University of Namibia, first as laboratory technician and then as lecturer in biological and ecological sciences.

CURRICULUM VITAE ANDRÉ FAUL

Name of Firm	:	Geo Pollution Technologies CC.
Name of Staff	:	ANDRÉ FAUL
Profession	:	Environmental Scientist
Years' Experience	:	25
Nationality	:	Namibian
Position	:	Environmental Scientist
Specialisation	:	Environmental Toxicology
Languages	:	Afrikaans – speaking, reading, writing – excellent English – speaking, reading, writing – excellent

EDUCATION AND PROFESSIONAL STATUS:

B.Sc. Zoology/Biochemistry	:	University of Stellenbosch, 1999
B.Sc. (Hons.) Zoology	:	University of Stellenbosch, 2000
M.Sc. (Conservation Ecology)	:	University of Stellenbosch, 2005
Ph.D. (Medical Bioscience)	:	University of the Western Cape, 2018

First Aid Class A	EMTSS, 2017, OSH-Med 2022
Basic Fire Fighting	EMTSS, 2017, OSH-Med 2022

PROFESSIONAL SOCIETY AFFILIATION:

Environmental Assessment Professionals of Namibia (Practitioner)

AREAS OF EXPERTISE:

Knowledge and expertise in:

- Water Sampling, Extractions and Analysis
- Biomonitoring and Bioassays
- Biodiversity Assessment
- Toxicology
- Restoration Ecology

EMPLOYMENT:

2013-Date	:	Geo Pollution Technologies – Environmental Scientist
2005-2012	:	Lecturer, University of Namibia
2001-2004	:	Laboratory Technician, University of Namibia

PUBLICATIONS:

Publications:	5
Contract Reports	+270
Research Reports & Manuals:	5
Conference Presentations:	1