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REPORT:

DRAFT SCOPING REPORT FOR THE CONSTRUCTION OF A GREEN AMMONIA TERMINAL AT THE WALVIS BAY PORT AREA, ERONGO REGION, NAMIBIA

PROJECT NUMBER: ECC-145-453-REP-06-C

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DISCLAIMER

The report has been prepared by Environmental Compliance Consultancy (Pty) Ltd (ECC) (Reg. No. 2022/0593) on behalf of the Proponent. Authored by ECC employees with no material interest in the report's outcome, ECC maintains independence from the Proponent and has no financial interest in the Project apart from fair remuneration for professional fees. Payment of fees is not contingent on the report's results or any government decision. ECC members or employees are not, and do not intend to be, employed by the Proponent, nor do they hold any shareholding in the Project. Personal views expressed by the writer may not reflect ECC or its client's views. The environmental report's information is based on the best available data and professional judgment at the time of writing. However, please note that environmental conditions can change rapidly, and the accuracy, completeness, or currency of the information cannot be guaranteed.

EXECUTIVE SUMMARY

Environmental Compliance Consultancy (Pty) Ltd (ECC) has been appointed as the environmental assessment practitioner (EAP) to conduct an environmental and social impact assessment (ESIA) by Cleanergy Solutions Namibia (Pty) Ltd (hereinafter referred to as the Proponent or Cleanergy Solutions). Cleanergy Solutions Namibia (Pty) Ltd is a joint venture between Ohlthaver & List (O&L) Group and CMB.Tech, The Ohlthaver & List (O&L) Group is the largest privately owned consortium in Namibia, with an operational track record spanning over a century and covering a diverse number of industries. CMB.TECH, a Belgium company specialising in the design, construction and operations of large marine and industrial modes of transportation that utilise hydrogen and ammonia.

As part of the bigger intended hydrogen and ammonia infrastructure development and operation, the proposed project involves the construction of the ammonia terminal at the Walvis Bay port area, in the Erongo Region, Namibia. The proposed site can be accessed via the B2 road between Swakopmund and Walvis Bay and is aligned to the overall port development masterplan.

In terms of the Namibian Environmental Management Act, 2007 and its regulations, the Ministry of Mines and Energy (MME) is the competent authority for the proposed Project. The proposed project trigger listed activities in terms of the Act, and as such, requires an environmental clearance certificate.

SCREENING PHASE

The first step in the ESIA process is to register the Project with the DEA/MEFT (completed) and followed by undertake a screening exercise to determine whether it is considered a listed activity under the Environmental Management Act, No. 7 of 2007 and associated regulations, and if significant impacts may arise from the Project. The location, scale, and duration of Project activities will be considered against the receiving environment.

The screening phase determined that the most likely potential environmental and social impacts could include:

- Noise impacts
- Air quality, including dust emissions
- Visual impacts affecting the sense of place
- Traffic impacts off-site
- Economic and socio-economic impacts, e.g., employment opportunities, contribute to green fuel economy and reduction of greenhouse gas emissions

SCOPING PHASE

The objective of the scoping phase was to obtain a thorough understanding of the biophysical and socioeconomic environment in which the Project is located, often using baseline and specialist studies. It also provided an opportunity for the public to have input into the scope of the assessment. The technical inputs combined with the inputs from the I&APs led to the development of the Terms of Reference (ToR) for the assessment phase. A desktop and literature research and specialists' input were considered during the preparation of the scoping report.

TERMS OF REFERENCE

The ToR within the scoping report was proposed for the assessment phase and covered the following:

Socio-economic assessment

A socio-economic study will be conducted in-house to assess the impact of the project on the current socio-economic state of the locals and impacts on a regional and national scale.

Visual assessment

The assessment will be conducted in-house and should include a study of the visual impact and its effects on the local tourist businesses and residential areas. The assessment will also take into consideration the landscape impacts.

Health and Safety assessment

The objective is to assess potential health and safety impacts associated with the construction and operation of the ammonia terminal project. The assessment will identify hazards, evaluate risks, and recommend measures to mitigate and manage health and safety concerns. This study will be conducted by ECC.

Climate change assessment

A climate change assessment will be commissioned to assess the emission baseline of the biophysical environment and formulate recommendations for the management or mitigation of any potential impacts that the Project may contribute to climate change. Additionally, contribute to the potential benefits of the project to the set climate change goals.

Air quality

The assessment will include a study of the legal requirements pertaining to air quality applicable to international legal guidelines, limits and dust control regulations.

Noise quality

The objective is to assess the potential noise impacts of the proposed project on surrounding sensitive receptors, including residents, businesses, and the tourism sector.

Traffic assessment

A traffic assessment will be commissioned to assess the implications relevant to the project regarding additional vehicles on the current D1984 and B2 road.

Biodiversity assessment

The objective of the biodiversity assessment will be to assess the bio-physical (vertebrate fauna & flora) issues relevant to the project and assess the significance of development and environmental impact that the project may have on the vertebrate fauna and flora at the proposed site including general comment. A visit to the proposed project area (applicable portions only) will be conducted to assess the development site. Sensitive areas and species will be identified within the Walvis Bay port area.

Heritage assessment

A heritage assessment will be required to comply with the Namibian national legislature, including the National Heritage Act, 2004 (Act No 27 of 2004) and the National Heritage Regulations (if applicable), Government Notice (GN) 3490 of 2005. Additionally, the proposed assessment process will comply with the requirements of IFC PS 8.

Groundwater and surface water assessment

To assess the potential hydrology and hydrogeological issues relevant to the Project and assess the significance of the operational and environmental impacts that the Project may have on the hydrological and hydrogeological environments at and beyond the proposed site.

Additionally, the scoping report defines the impact methodology for the impact assessment phase of the ESIA, this is included in chapter 6 of this report. The evaluation and identification of the environmental and social impacts require the assessment of the Project characteristics against the baseline characteristics, ensuring that all potentially significant impacts are identified and assessed.

The next stage of this assessment is to conduct the impact assessment, incorporating the specialist impact assessments as well as updating the preliminary EMP. All I&AP comments, if any, will be responded to, by providing an explanation or further information in the response table, which is attached as an addendum report to this final scoping report.

Once finalised, prior to formal submission, the final ESIA report and appendices, including relevant specialist reports, will be made available to all registered I&APs and stakeholders for comment.

The ESIA report and appendices will be formally submitted to the competent authority, first the MME and then to the MEFT as part of the application for an environmental clearance certificate for the green Ammonia Terminal Project. The phases of the ESIA are provided in Figure 1.

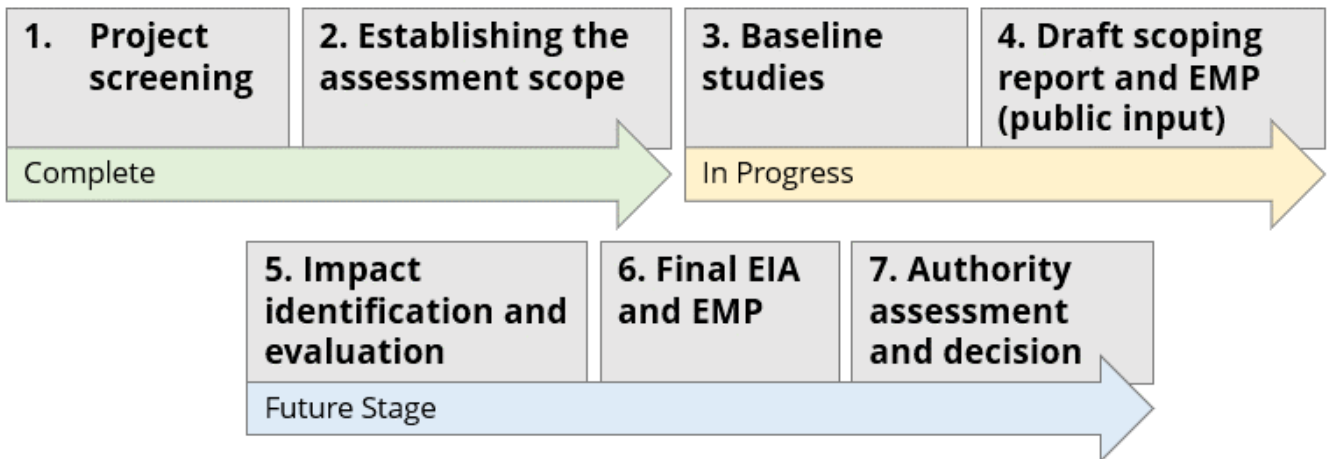


Figure 1 – Simplified phases of the Ammonia Terminal Project ESIA process

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ABBREVIATIONS

ABBREVIATION	DESCRIPTION
%	Percentage
°C	degrees celsius
AA	Aqueous Ammonia
AIDS	Acquired immune deficiency syndrome
BID	Background information document
BOG	boiled off gas
Cleanergy Solutions	Cleanergy Solutions Namibia (Pty) Ltd
DEA	Directorate of Environmental Affairs
EAP	environmental assessment practitioner
ECC	Environmental Compliance Consultancy
EEZ	Exclusive Economic Zone
EIA	Environmental Impact Assessment
EMA	Environmental Management Act
EMP	environmental management plan
ENE	East-Northeast
ESD	Emergency shut down
ESIA	environmental and social impact assessment
ESMP	environmental and social management plan
GDP	Gross domestic product
GHG	Greenhouse gases
GIS	Geographic Information System
GN	Government Notice
HIV	human immunodeficiency virus
I&APs	Interested and affected parties
IA	Instrument air
IFC	International Finance Corporation
km	kilometre
km ²	squared kilometre
km/h	kilometre per hour
Ltd	limited
m	metre
m ³	cubic metre
m ³ /day	cubic metre per day
MEFT	Ministry of Environment, Forestry and Tourism
MFMR	Ministry of Fisheries and Marine Resources
mm	millimetre
MME	Ministry of Mines and Energy
MoHSS	Ministry of Health and Social Services
MT	metric tonnes
Namport	Namibian Ports Authority
NDC	Nationally Determined Contributions

ABBREVIATION	DESCRIPTION
NDP5	Fifth National Development Plan
NGU	Nitrogen Generation Unit
No.	Number
O&L	Ohlthaver & List Group
PHC	Primary healthcare
Pty	proprietary
QGIS	Quantum Geographic Information System
Reg	registration
RH	Relative humidity
SADC	Southern African Development Community
SW	Southwest
TB	tuberculosis
ToR	terms of reference
UNCLOS	United Nations Law of the Sea Convention
UNFCCC	United Nations Framework Convention on Climate Change
WWF	World Wide Fund for Nature

1 INTRODUCTION

1.1 COMPANY BACKGROUND

Environmental Compliance Consultancy (Pty) Ltd (ECC) has been appointed as the environmental assessment practitioner (EAP) to conduct an environmental and social impact assessment (ESIA) by Cleanergy Solutions Namibia (Pty) Ltd (hereinafter referred to as the Proponent or Cleanergy Solutions).

Cleanergy Solutions Namibia (Pty) Ltd is a joint venture between Ohlthaver & List (O&L) Group and CMB.Tech, The Ohlthaver & List (O&L) Group is the largest privately owned consortium in Namibia, with an operational track record spanning over a century and covering a diverse number of industries. CMB.TECH, a Belgium company specialising in the design, construction and operations of large marine and industrial modes of transportation that utilise hydrogen and ammonia. It forms an integral part of Compagnie Maritime Belge which is a family-owned shipping group, founded in 1895.

Cleanergy Solutions Namibia in intent on becoming a driving force in the growth of the Namibia's hydrogen economy, while contributing to the global shift for industrial decarbonisation. The organisation is in the process of finalising the construction of the first hydrogen production plant in Namibia, with first production intended for the latter part of 2024.

As part of the bigger intended hydrogen and ammonia infrastructure development and operation, which Cleanergy Solutions are actively pursuing, the Proposed construction of the ammonia terminal will occur at the Walvis Bay port area, in the Erongo Region, Namibia as shown in Figure 2. The proposed site can be accessed via the B2 road between Swakopmund and Walvis Bay and is aligned to the overall port development masterplan.

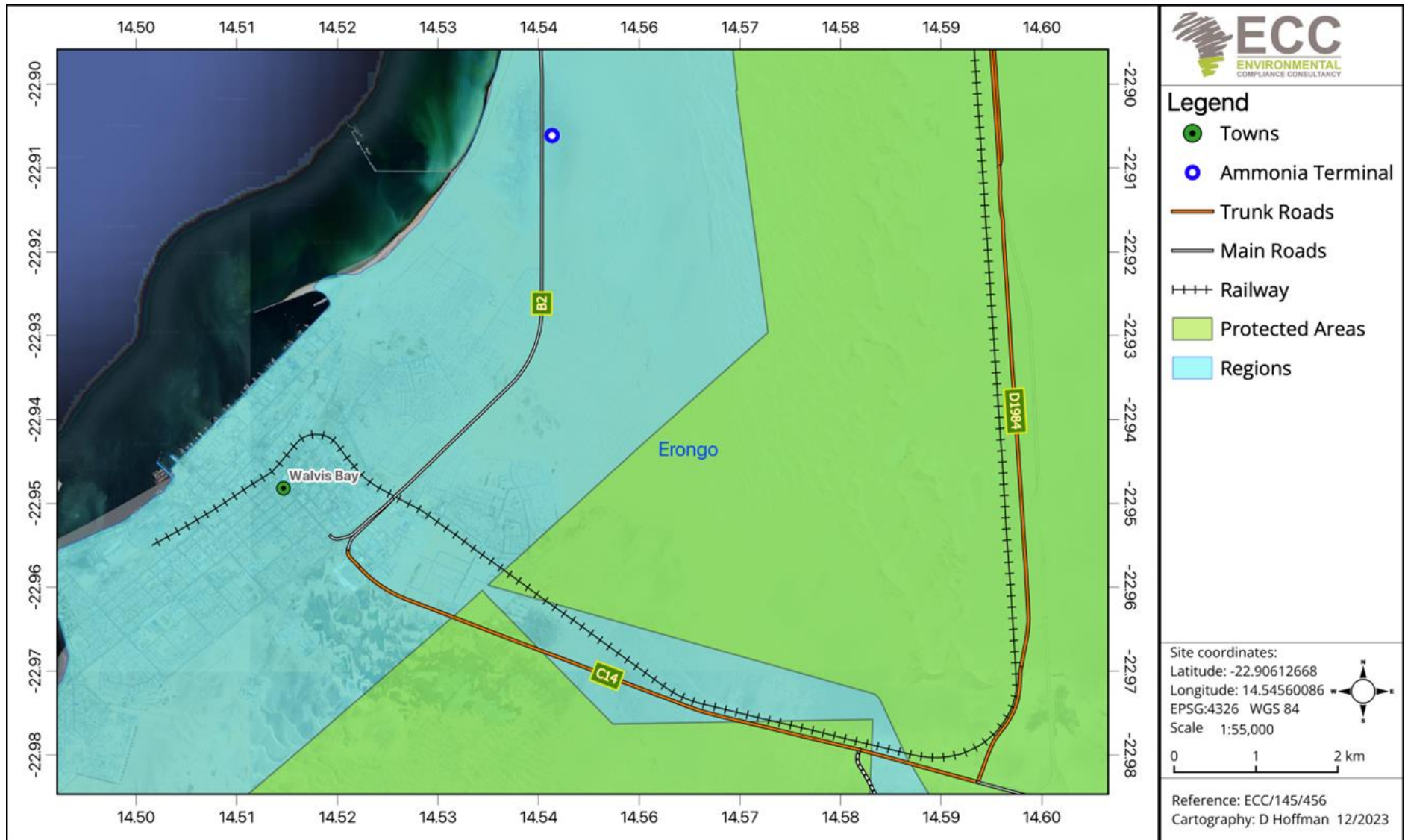


Figure 2 - Locality map of the project

1.2 PURPOSE OF THE SCOPING REPORT

An environmental and social impact assessment (ESIA) has commenced in compliance with the requirements of the Environmental Management Act, No. 7 of 2007, and its regulations. This report presents the findings of the scoping study phase that forms part of the larger ESIA process.

The scoping report summarises the prescribed ESIA process to be followed, provides information on the baseline biophysical and socio-economic environments, project description and details, outlines the terms of reference for the assessment phase, and presents a preliminary environmental management plan (EMP), which is provided as Appendix A.

The scoping report and appendices will be submitted to the public for review and input. The revised scoping report with public input will then be submitted to the Ministry of Mines and Energy (MME) as the competent authority for the Project and Namport after which it will be submitted to the Ministry of Environment, Forestry and Tourism (MEFT) - Directorate of Environmental Affairs (DEA) for a record of decision.

1.3 THE PROPONENT OF THE PROPOSED PROJECT

Cleanergy Solutions Namibia (Pty) Ltd is the Proponent for the proposed Project. The Proponent holds a long-term lease agreement with Namport for the construction and operation of the proposed activities as part of the scope of the project and within the identified and agreed area.

Cleanergy Solutions Namibia (Pty) Ltd it was formed in 2021 and duly registered in Namibia. It is a joint venture between the Olthaver & List Group of Companies and CMB.TECH with the latter holding 49% shares and the former holding 51%. The company is already in the process of constructing a hydrogen demonstration plant on Farm 58 outside Walvis Bay. Apart from the proposed ammonia terminal (the subject of this assessment), the organisation also intends to construct a 12.7 km green ammonia pipeline and 80 km green hydrogen pipeline as part of the overall components of this project. Both projects are subject to separate EIA processes, which have also commenced. The Proponents' details are provided in

Table 1.

Table 1 – Proponent’s details

Company Representative:	Contact Details:
Ms Gloudi De Beer Group Manager: Environment and Sustainability	Ohlthaver & List Group: P O Box 16, Windhoek 7th floor, South Block 23-33 Fidel Castro Street Windhoek, Namibia Gloudi.DeBeer@ol.na +264 (61) 207 5382

1.4 ENVIRONMENTAL AND SOCIAL ASSESSMENT PRACTITIONER

Environmental Compliance Consultancy (Pty) Ltd (ECC) (Reg. No. 2022/0593) has prepared this scoping report and the preliminary EMP on behalf of the Proponent and in line with the relevant national regulations and international best practice.

This report has been authored by employees of ECC, who have no material interest in the outcome of this report, nor do any of the ECC team have any interest that could be reasonably regarded as being capable of affecting their independence in the preparation of this report. ECC is independent from the Proponent and has no vested or financial interest in the project, except for fair remuneration for professional fees rendered based upon agreed commercial rates. Payment of these fees is in no way contingent on the results of this report, the assessment, or a record of decision issued by the Government. No member or employee of ECC is, or is intending to be, a director, officer, or any other direct employee of Cleanergy Solutions Namibia (Pty) Ltd. No member or employee of ECC has, or has had, any shareholding in Cleanergy Solutions Namibia (Pty) Ltd.

All compliance and regulatory requirements regarding this report should be forwarded by email or posted to the address as set out in Table 2.

Table 2 - EAP details

EAP	Contact Details
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1.5 ENVIRONMENTAL REQUIREMENTS

The Environmental Management Act, 2007, and its regulations, stipulates that an environmental clearance certificate is required before undertaking any of the listed activities that are identified in the Act and its regulations. Potential listed activities triggered by the Project are provided in Table 3.

Table 3 - Activities potentially triggered by the Project

Source: Environmental Management Act, 2007, and its 2012 regulations.

Listed activity	As defined by the regulations of Act	Relevance to the project
Energy generation, transmission, and storage activities	(1.a) The construction of facilities for the generation of electricity; (1.b) The construction of facilities for the transmission and supply of electricity.	<ul style="list-style-type: none"> - An emergency diesel generator is included to provide enough power to one boiled off gas (BOG) compressor and at least one fire water pump in case of power shortage.
Water Resource Developments	(8.6) Construction of industrial and domestic wastewater treatment plants and related pipeline systems.	<ul style="list-style-type: none"> - All the effluents generated by the ammonia terminal facilities will be handled by the wastewater system/unit. - Wastewater permit will be obtained.
Hazardous substance treatment, handling and storage	<p>(9.1) The manufacturing, storage handling, or processing of a hazardous substance defined in the Hazardous Substances Ordinance, 1974.</p> <p>(9.2) Any process of activity which requires a permit, licence or other form of authorisation, or the modification of or changes to existing facilities for any process or activity which requires an amendment of an existing permit, licence or authorisation or which requires a new permit, licence or authorisation in terms of a law governing the generation or release of emissions, pollution, effluent or waste.</p> <p>(9.4) The storage and handling of dangerous goods, including petrol, diesel, liquid petroleum gas or paraffin, in containers with a combined capacity of more than 30 cubic meters at any one location.</p> <p>(9.5) Construction of filling stations or any other facility for the underground and aboveground storage of dangerous goods, including petrol, diesel, liquid, petroleum, gas or paraffin.</p>	<ul style="list-style-type: none"> - Liquid ammonia will be stored in an ammonia storage tank with a size of 40000 tonne capacity.

2 APPROACH TO THE ASSESSMENT

2.1 PURPOSE AND SCOPE OF THE ASSESSMENT

The aim of this assessment is to determine which impacts are likely to be significant; to scope the available data and identify any gaps that need to be filled; to determine the spatial and temporal scope; and to identify the assessment methodology.

The scope of the assessment was determined by undertaking a preliminary assessment of the proposed Project against the receiving environment, obtained through a desktop review and available site-specific literature.




2.2 THE ASSESSMENT PROCESS

The ESIA methodology applied to this assessment is compliant with Namibia's EMA 2007 which is applicable to all projects including marine areas located within Namibia's Territorial Waters and Exclusive Economic Zone (EEZ) (Territorial Sea and Exclusive Economic Zone of Namibia Act 3 of 1990). The EISA methodology has been developed using the International Finance Corporation (IFC) standards and models performance Standard 1: 'Assessment and management of environmental and social risks and impacts' (International Finance Corporation, 2012 and 2017) as a guideline, as well as Namibian Draft Procedures and Guidance for EIA and EMP (Republic of Namibia 2008); international and national best practice guidelines and combined relevant ESIA experience from the core project team.

This assessment is a formal process whereby the potential positive and negative effects that the Project may have on the biophysical, social and economic environments are identified, assessed and reported, so that the significance of potential impacts can be taken into account when considering a record of decision for the proposed Project. Final mitigation measures and recommendations are based on the cumulative experience of the consulting team and the client, taking into consideration the potential environmental and social impacts. The process followed, through the assessment, is illustrated in 3 and is detailed further in the following sections.

2.3 SCREENING OF THE PROJECT

The first step in the ESIA process is to register the Project with the DEA/MEFT (completed) and followed by undertake a screening exercise to determine whether it is considered a listed activity under the Environmental Management Act, No. 7 of 2007 and associated regulations, and if significant impacts may arise from the Project. The location, scale, and duration of Project activities will be considered against the receiving environment. The assessment process is shown in Figure 3.

1. Project screening	2. Establishing the assessment scope	3. Baseline studies
Complete	Complete	Complete
<p>The first stages in the ESIA process are to undertake a screening exercise to determine whether the Project triggers listed activities under the Environmental Management Act, 2007, and its regulations. The screening phase of the Project is a preliminary analysis, in order to determine ways in which the Project might interact with the biophysical, social, and economic environments.</p> <p>Stakeholder engagement:</p> <ul style="list-style-type: none"> • Registration of the project • Preparation of the BID 	<p>Where an ESIA is required, the second stage is to scope the assessment. The main aim of this stage is to determine which impacts are likely to be significant; to scope the available data and any gaps that need to be filled; to determine the spatial and temporal scope; and to identify the assessment methodology.</p> <p>The scope of this assessment was determined through undertaking a preliminary assessment of the proposed Project against the receiving environment. Feedback from consultation with the public and the Proponent informs this process. The following environmental and social topics were scoped into the assessment, as there was the potential for significant impacts to occur. Impacts that are identified as potentially significant during the screening and scoping phase are taken forward for further assessment in the ESIA process. These are:</p> <p>SOCIOECONOMIC ENVIRONMENT</p> <ul style="list-style-type: none"> • Employment • Positive socioeconomic impact – green energy • Visual impacts on sense of place • Technical feasibility and safety <p>BIOPHYSICAL ENVIRONMENT</p> <ul style="list-style-type: none"> • Noise and air quality, including dust emissions • Road traffic • Biodiversity • Heritage • Groundwater and surface water 	<p>A robust baseline is required, to provide a reference point against which any future changes associated with a Project can be assessed, and to allow suitable mitigation and monitoring to be identified.</p> <p>The region and general area have been studied for various projects and assessments. This literature was available to be referenced. The Project site-specific area has been studied as part of the ESIA process, and the following has been conducted as part of this assessment:</p> <ul style="list-style-type: none"> • Field surveys • Desktop studies • Consultation with stakeholders <p>The environmental and social baselines are provided in the scoping study.</p> 

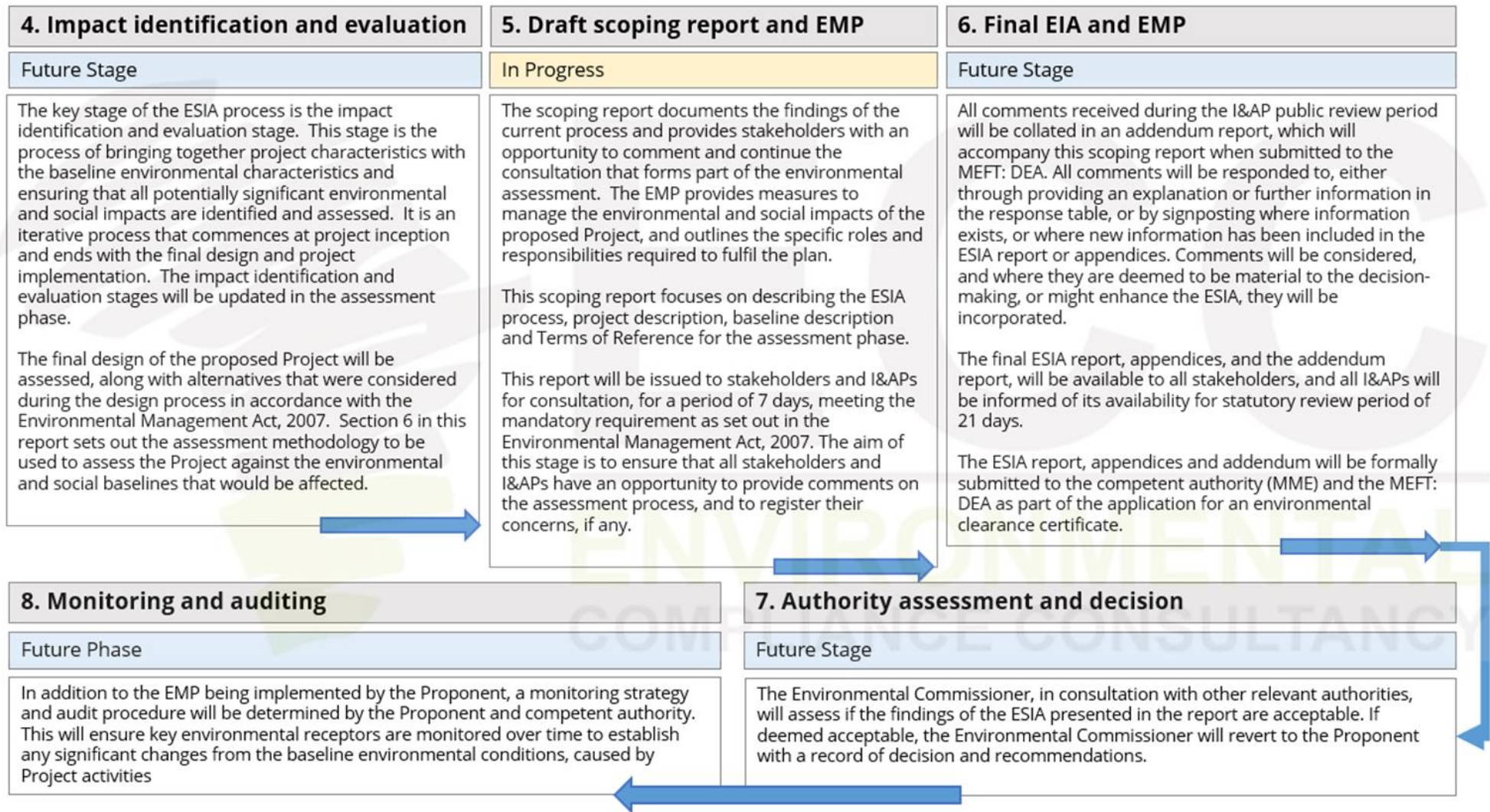


Figure 3 – ESIA process and stages complete

2.4 STUDY AREA

This ESIA study area has been defined according to the geographic scope of the receiving environment and potential impacts that could arise because of the Project. The receiving environment is a summary term for the biophysical and socioeconomic environment that is described in the baseline chapter. The study area is presented in Figure 4.

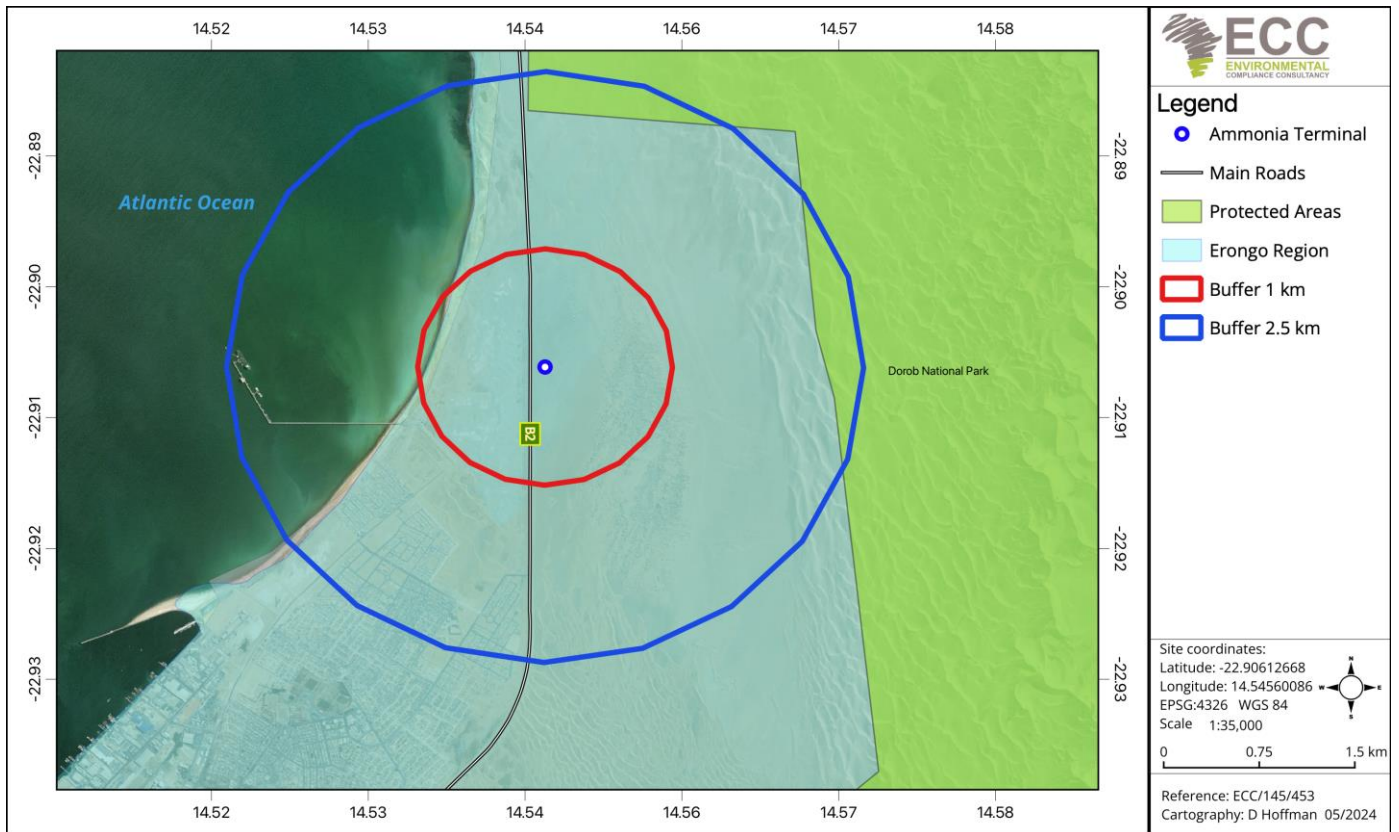


Figure 4 - Project study area

2.5 PUBLIC CONSULTATION

Public participation and consultation are a requirement as stipulated in the Environmental Impact Assessment Regulations (Regulations 21 and 23) of the EMA, No.7 of 2007 for a project undertaking a listed activity that requires an environmental clearance certificate.

Consultation is a compulsory and critical component of the assessment process for achieving transparent decision-making and can provide many benefits. Consultation is ongoing during the ESIA process. The objectives of the public participation and consultation process are to:

- Determine the relevant government, regional, and local regulating authorities.

- Provide information on the Project to the public and competent authorities, introducing the overall project concept and planning in the form of a background information document (BID).
- Listen to and understand community issues, record concerns and questions.
- Explain the process of the ESIA and the timeframes involved and establish a platform for ongoing consultation.

Public consultation for the Project commenced on 04 March 2024 when stakeholder letters were distributed to focus groups and identified key stakeholders and interested and affected parties (I&APs). In terms of Section 22 of the Environmental Management Act, No. 7 of 2007 and its regulations, to register I&APs, a public meeting is not a requirement during the public consultation process for all projects. However, the EAP, along with the proponent, considered it pertinent to arrange public meetings at the Walvis Bay Town Hall on the 12th of March 2024, Swakopmund Tamariskia Town Hall on the 13th of March 2024 and Arandis Town Hall on the 14th of March 2024. The towns for the meetings were chosen based on not only the current scope of influence of the project, but also took possible further expansions into consideration. Ongoing consultation will continue, and more public and stakeholder engagements may be scheduled during the assessment.

Adverts for public meetings held in Walvis Bay, Swakopmund and Arandis were placed in local newspapers and the notification of the assessment in terms Regulation 21 of the Act was placed in the following newspapers on the 29 of February and 07 March 2024 (appendix to Appendix B) in the following newspapers:

- The Republikein;
- The Namibian Sun; and
- Allgemeine Zeitung.

2.5.1 IDENTIFICATION OF KEY STAKEHOLDERS AND INTERESTED AND AFFECTED PARTIES

A stakeholder mapping exercise was undertaken to identify individuals or groups of stakeholders and the method by which they will be engaged during the ESIA process.

Stakeholders were approached through direct communication (letters and phone calls), the national press, or directly by email. A summarised list of stakeholders for this project is given below:

- Neighboring businesses;
- Affected and surrounding conservancies;
- The general public with an interest in the Project;
- Ministry of Environment, Forestry, and Tourism (MEFT);
- Ministry of Mines and Energy (MME);
- Ministry of Agriculture, Water and Land Reform;
- Ministry of Industrialisation and Trade;
- Ministry of Defense and Veteran Affairs;

- NAMCOR;
- Namport;
- NACSO;
- Erongo Regional Council;
- Walvis Bay Town Council; and
- Walvis Bay Municipality.

The records of the public consultation process in the form of a summary report are provided in Appendix B and includes a list of interested and affected parties (I&APs'), evidence of consultation, including notes of public meetings, advertisements in national newspapers, and a summary of the comments or questions raised by the public.

2.6 SUMMARY OF ISSUES RAISED

Matters raised by registered I&APs in relevant stakeholder consultations and the public meetings in Walvis Bay, Swakopmund and Arandis are considered typical for the nature, location and scale of project, and these are summarised as follows:

- Potential safety hazards, safety measures and emergency preparedness plans
- Possible risks of ammonia in relation to the ocean, biotic and abiotic environments
- Potential impacts of water usage on the water availability for locals
- Potential visual impacts on surrounding residents and tourism
- Impacts on National Protected Areas
- Potential risks associated with pipeline material, design and proximity to other pipelines
- Lack of national standards and local regulations
- Potential regional and national economic benefits.

3 REVIEW OF THE LEGAL ENVIRONMENT

This chapter outlines the regulatory framework applicable to the proposed Project. As stated in Section 1, an environmental clearance certificate is required for any listed activity in the Government Notice No. 29 of 2012 of the EMA. The proposed Project is within Namibia's maritime zones and bounded by environmental protected areas (i.e. Dorob National Park and Namib-Naukluft Park). Therefore, a comprehensive scoping and impact assessment is undertaken to assess the significance of potential impacts that may be triggered by the project and recommend feasible and practical mitigation, management and monitoring systems for adoption during the different phases of the project.

International best practises, engineering codes and standards will be adopted into the various architectural designs and structural elements of the project to ensure the safety, reliability and performance of engineered systems.

A thorough review of relevant legislation has been conducted for the Project. Table 4 identifies relevant legal requirements specific to the Project. Table 5 provides the national policies and plan. Table 6 specifies permits relevant for the Project. Table 7 identifies the international policies and plans relevant to the Project.

3.1 NATIONAL REGULATORY FRAMEWORK

Table 4 - Details of the regulatory framework as it applies to the proposed project

National regulatory regime	Summary	Applicability to the Project
<p>Constitution of the Republic of Namibia (1990)</p>	<p>The constitution defines the country’s position in relation to sustainable development and environmental management.</p> <p>The constitution refers that the state shall actively promote and maintain the welfare of the people by adopting policies aimed at the following: “Maintenance of ecosystems, essential ecological processes and biological diversity of Namibia, and the utilisation of living, natural resources on a sustainable basis for the benefit of all Namibians, both present, and future.”</p> <p>Article 100 stipulates that “Land, water and natural resources below and above the surface of the land and in the continental shelf and within the territorial waters and the exclusive economic zone of Namibia shall belong to the State if they are not otherwise lawfully owned”. This defines the Government position in requiring licences for activities within these operational areas and facilitate control over them.</p>	<p>The proposed project will ensure the sustainable use of the environment, and has aligned its corporate mission, vision, and objectives with the Constitution of the Republic of Namibia (1990).</p> <p>The Proponent is also obligated to ensure its activities do not in any way interfere with any basic human rights as described under the constitution.</p> <p>The government is the ultimate accountable institution for ensuring that policies are put in place to protect natural resources for the benefit of all. This is achieved through the three branches: executive, judiciary and legislative.</p>

National regulatory regime	Summary	Applicability to the Project
Territorial Sea and Exclusive Economic Zone Act No.3 of 1990	<p>To determine and define the territorial sea, internal waters, exclusive economic zone and continental shelf of Namibia and activities associated herewith.</p> <p>The continental shelf is defined as State land and the Exclusive Economic Zone (EEZ) extends to 200 nautical miles (~370.4 km offshore).</p>	<p>The Project falls within the Namibian Exclusive Economic Zone (EEZ).</p> <p>The Namibian coast is governed as a national asset for the benefit of current and future generations.</p> <p>The Proponent is committed to conduct its operations to standards that complement long-term national policies on the conservation and management of coastal environments. The Project will commit to boost coastal economics, social development opportunities, coastal ecosystems and processes that maintain them.</p>
Environmental Management Act, 2007 (Act No. 7 of 2007) and its regulations (2012), including the Environmental Impact Assessment Regulation, 2007 (No. 30 of 2011)	<p>The Act aims to promote sustainable management of the environment and the use of natural resources. The Act requires certain activities to obtain an environmental clearance certificate prior to Project development.</p> <p>The Act states that an EIA should be undertaken and submitted as part of the environmental clearance certificate application process.</p> <p>The MEFT is responsible for the protection and management of Namibia’s natural environment. The Department of Environmental Affairs (DEA), under the</p>	<p>This environmental scoping report documents the findings of the scoping phase of the environmental assessment to be undertaken for the proposed Project.</p> <p>The process has been undertaken in line with the requirements under the Act, its regulations, and international standards such as IFC.</p>

National regulatory regime	Summary	Applicability to the Project
	MEFT, is responsible for the administration of the ESIA process.	
The Regional Councils Act (No. 22 of 1992)	<p>This Act sets out the conditions under which Regional Councils must be elected and administer each delineated region. From a land use and project planning point of view, their duties include, as described in section 28 “to undertake the planning of the development of the region for which it has been established with a view to physical, social, and economic characteristics, urbanisation patterns, natural resources, economic development potential, infrastructure, land utilisation pattern and sensitivity of the natural environment.</p> <p>The main objective of this Act is to initiate, supervise, manage, and evaluate development.</p>	The proposed project area falls under the mandate and municipal development plans of the Erongo Regional Council. Therefore, the Erongo Regional Council along with other governing bodies in the region will be consulted throughout the ESIA process.
The Namibian Ports Authority Act, 1994 (Act 2 of 1994)	The Act provides for the establishment of the Namibian Ports Authority to undertake the management and control of ports and lighthouses in Namibia, and the provisions of facilities and services related thereto. The Act gives provisions for licence to undertake activities in any port (including entry to a port).	During Project construction and mobilisation, any delivery ship or vessel(s) entering Namport waters will comply with all nautical safety requirements and will obtain relevant permission or licences, where required.
Soil Conservation Act, No. 76 of 1969	This Act makes provision for the prevention and control of soil erosion, and for the protection, improvement, and conservation of soil and vegetation.	The construction phase of the project will entail minimal disturbances to soils structure, soil horizons of the desert environment.

National regulatory regime	Summary	Applicability to the Project
Hazardous Substances Ordinance, No. 14 of 1974	<p>This Ordinance provides for the control of toxic substances and can be applied in conjunction with the Atmospheric Pollution Prevention Ordinance, No. 11 of 1976.</p> <p>This applies to the manufacture, sale, use, disposal, and dumping of hazardous substances, as well as their import and export.</p>	<p>The planned Project will involve an emergency diesel generator consisting of a diesel storage tank. In addition, ammonia is a combustible fuel.</p> <p>The Proponent shall guarantee safe handling, transfer, storage, and disposal protocols are developed, implemented and audited throughout the construction and operation phase of the ammonia terminal. Leakage detection systems will be in place and inspections will be conducted to timely address any leakages. Monitoring frequencies are outlined in the ESMP.</p> <p>The Proponent is obliged to ensure a licence to operate as a Group I hazardous substance supplier is in place prior to the project commencement.</p>
National Heritage Act 27 of 2004	The act provides for the protection and conservation of places and objects of heritage significance and the registration of such places and objects. It also makes provision for archaeological "impact assessments".	A heritage impact assessment will be conducted during the full ESIA process. The heritage impact assessments will include mitigation measures should archaeological artifacts be encountered during Project construction or operation.
Labour Act (No. 6 of 1992)	The Ministry of Labour, Industrial Relations and Employment is aimed at ensuring harmonious labour relations through promoting social justice, occupational health and safety and enhanced labour market services for the benefit of all Namibians. This ministry insures	The proponent should ensure the safety and welfare of employees throughout the project development framework.

National regulatory regime	Summary	Applicability to the Project
	effective implementation of the Labour Act No. 6 of 1992.	
Water Resources Management Act No.11 of 2013	The Act provide for the regulation and monitoring of water services and provide for incidental matters.	<p>The Proponent is to acquire water required for the Project through a local water service provider (i.e. Walvis Bay Municipality).</p> <p>Walvis Bay Municipality is the custodian for water supply to end consumers in the region.</p>

3.2 NATIONAL POLICIES AND PLANS

Table 5 - National policies and plans applicable to the Ammonia Terminal Project

Policy or plan	Description	Relevance to the Ammonia Terminal Project
Vision 2030	<p>Vision 2030 sets out the nation’s development targets and strategies to achieve its long-term national objectives.</p> <p>Vision 2030 states that the overall goal is to improve the quality of life of the Namibian people aligned with the developed world.</p>	<p>The proposed Ammonia Terminal Project supports Namibia’s long-term development goals. The national development goals are aimed at achieving a statutory prosperous and industrialised nation, developed by Namibia’s own natural and human resources.</p> <p>The project will further build on the achieving the goals through continued employment creation and ongoing contributions to gross domestic product (GDP).</p>
Fifth National Development Plan (NDP5)	The NDP5 is the fifth in a series of seven five-year national development plans that outline the objectives and aspirations of Namibia’s long-term vision.	The planned Ammonia Terminal Project will complement efforts towards achieving the set

Policy or plan	Description	Relevance to the Ammonia Terminal Project
	The NDP5 pillars are economic progression, social transformation, environmental sustainability, and good governance.	targets through creating of employment opportunities, where and when required.
The Harambee Prosperity Plan ii (2021 – 2025)	Second Pillar: Economic advancement – ensuring increasing productivity of priority key sectors and the development of additional engines of growth, such as new employment opportunities.	The proposed Project meet government efforts in addressing high unemployment rate through the generation of employment within the regional and national landscape.
Namibia’s Green Plan, 1992	Namibian has developed a 12-point plan for integrated sustainable environmental management to ensure a safe and healthy environment and to maintain a viable economy. Clause 2 (f) makes specific mention to guidelines related to sustainable development.	The Proponent is in full cognisance of the clauses under the Green Plan to ensure that best industrial practises are implemented to sustain the country’s renewable resources, secure a safe and healthy environment and a prosperous economy for present and future generations.
Draft Gas Bill, 2001	The draft gas bill aims to promote the establishment of a gas transportation and distribution network in Namibia for the purpose of domestic supply and for export; to establish a framework of licensing of the gas industry and a national gas regulator to monitor the performance of licence conditions and promote reliability of services; to ensure safety, efficiency and environmental responsibility in the transportation and distribution of natural gas; to facilitate investment in pipeline infrastructure by private, public, municipal and mixed owned enterprises. The draft bill also aims to	Although not enacted, the Proponent will take note of the draft bill requirements regarding the safe handling and storage of ammonia gas.

Policy or plan	Description	Relevance to the Ammonia Terminal Project
	promote a competitive market in gas in the long term, and to stimulate cross-border trade in gas between Namibia and its neighbours.	
Pollution Control and Waste Management Bill (draft), 1999	This draft Act aims to promote sustainable development by regulating the discharge of pollutants into the air, land and sea. Additionally, to ensure Namibia has an integrated waste management approach and complies with international legislation.	The Proponent to take note of the draft bill requirements and ensure conditions are adhered to with regards to containment of pollutants.
The Green Paper for the Coastal Policy of Namibia	The Green Paper provides an outline of the key findings of a long-term study on the conservation and management of the Namibian coast. It sets out the coastal policy and the vision for the coast, as well as principals, goals and objectives for coastal governance. It also presents the options for institutional and legal arrangements towards implementing the emerging Namibia Coastal Policy options for coastal governance in Namibia.	The principles of Integrated Coastal Zone Management will be used as guideline during the ESIA and will have to be considered and included where applicable in the ESMP.
The National Policy on Coastal Management for Namibia	The National Policy on Coastal Management for Namibia aims to provide a framework to strengthen governance of Namibia's coastal areas to realise long-term national goals defined in Vision 2030 and specific targets of the National Development Plans, namely: sustainable economic growth, employment creation and reduced inequalities in income. Overall, the policy aims to ensure that our coastal resources are protected, used and	The Proponent shall be guided by the strategic recruitment plan to ensure fair recruitment of local people for various tasks as the Project evolves.

Policy or plan	Description	Relevance to the Ammonia Terminal Project
	developed for increases livelihood security and sustainable economic development for all Namibians.	

3.3 RELEVANT PERMITS AND LICENCES

Table 6 - Relevant permits and licences required for the project

Permit/Licence	Act/Regulation	Related activities requiring permits	Relevant Authority
Environmental clearance certificate	Environmental Management Act, No. 7 of 2007	Required for all listed activities as stipulated in the EMA Regulations of 2012.	Ministry of Environment, Forestry and Tourism
Written approval for the development of private property on municipal land	The Standard Building Regulations and amendment, 1995	Required for the development of bulk infrastructure within Walvis Bay municipal land.	Municipality of Walvis Bay
A licence required to operate as a supplier of Group I hazardous substances	Hazardous Substances Ordinance No.14 of 1974	Required for the Proponent to supply of Group I hazardous substances.	The National Radiation Protection Authority under the Ministry of Health and Social Services.

3.4 INTERNATIONAL CONVENTIONS

Table 7 - International policies and plans applicable to the Ammonia Terminal Project

Policy or plan	Description	Relevance to the Ammonia Terminal Project
United Nations Law of the Sea Convention (UNCLOS), 1982	The UNCLOS provides an international legal framework to govern the seas and oceans of the world. Namibia as the designated State is required to administer exploitation, protection and preservation of the marine environment	This is achieved though the EMA Act. The manufacturing, storage, handling or processing of hazardous substances is a listed activity under the EMA Act and requires an

Policy or plan	Description	Relevance to the Ammonia Terminal Project
	and natural resources on the Namibian Continental Shelf and Exclusive Economic Zone.	<p>environmental clearance certificate. An environmental impact assessment study is conducted in this regard, and mitigation management measures will be provided in the ESMP.</p> <p>It is not envisaged that any hazardous waste will be generated or will be required to be disposed of or moved across Namibian border.</p>
The International Finance Corporation Standards (IFC), 2012	<p>Through eight (8) Performance Standards, the standards draw a framework and strategic commitments for Proponents to promote sustainable development through integrated environmental and social risks assessments, and setting standards and management techniques to avoid, minimise and where residual impacts remain, to compensate/offset for risks and impacts to workers and affected communities.</p> <p>Performance Standard 3 recognises that consumption of finite resources, threats to air, water, land and projected atmospheric concentrations of greenhouse gases (GHG) threatens the public health and welfare of current and future generations at the local, regional and global level.</p>	<p>The potential impacts to be triggered by the proposed project are assessed thoroughly as part of the ESIA and management mitigation measures to guide standards of operation are provided in the ESMP.</p> <p>The Proponent is committed to engage in international best practises to ensure seamless operations within the Namibian environment.</p>
Paris Agreement, 2015	The Paris Agreement's central aim is to strengthen the global response to the threat of climate change by maintaining a global temperature rise well below 2°C	Namibia's approach to climate change regulation is closely aligned with commitments of the sustainable development goals (SDGs).

Policy or plan	Description	Relevance to the Ammonia Terminal Project
	<p>above pre-industrial levels and to pursue efforts to limit the temperature increase further by 1.5°C above pre-industrial levels.</p> <p>Namibia is a non-Annex 1 Party to the Paris Agreement, ratified in 2016. The government is actively engaged in addressing climate change and works in collaboration with international organisations and partners to boost the nation's capacity to meet its climate-related objectives.</p>	
<p>The United Nation Convention for the Protection of the Ozone Layer, 1985</p>	<p>The overarching objective of the convention is to protect human health and the environment against adverse effects resulting from modification of the ozone layer. Parties commit to cooperate in research concerning substances and processes that modify the ozone layer on human health and environmental effects of such modifications, and on alternative substances and technologies and systematic observations.</p> <p>Currently Namibia isn't signatory to the convention, however best practises are key parameters towards the country's effort in meeting its climate-related objectives.</p>	<p>Namibia is a net carbon sink. However, commitments are drawn to achieve national climate change objectives through sustainable development goals (SDGs) programs.</p>
<p>United Nations Framework Convention on Climate Change (UNFCCC), 1992</p>	<p>The objective of the convention is to reduce and stabilize greenhouse gases at an atmosphere level to reduce impacts on climate systems, to allow ecosystems time to</p>	<p>Namibia developed the National Policy Climate Change Strategy and Action Plan (NCCSAP) to facilitate and enhance energy efficiency and promote sustainable low carbon development</p>

Policy or plan	Description	Relevance to the Ammonia Terminal Project
	<p>adapt to these changes, reduce food shortages and promote economies to develop in sustainable manners.</p> <p>Namibia ratified the UNFCCC in 1995 and thus is obligated to prepare and submit national communications, biennial update reports and NDCs (a climate action plan to cut emissions and adapt to climate impacts).</p>	<p>and sustainable energy through technology and innovations. This is relevant to the project as the innovative scope of work proposed builds on an emerging green hydrogen industry in the country.</p>
<p>The Stockholm Declaration on the Human Environment, Stockholm 1972</p>	<p>Namibia has adopted the declaration in 1996 with the following Principle 3 and 21 most relevant to the proposed Ammonia Terminal Project. Principle 3 states that the earth has capacity to produce, maintain, restore and improve vital renewable resources, wherever practicable. Principle 21 states Namibia has the right to explore her own resources but to ensure that there is effective policies and controls in place to regulate these activities as to not cause detrimental harm to the environment.</p>	<p>Namibia has adopted various measures in place in support of other emerging green hydrogen pilot and large-scale projects. Across southern Africa, Namibia is one of the countries with abundance renewable energy resources and has potential to be a leading force for transition towards a green economy.</p>

4 PROJECT DESCRIPTION

4.1 NEED FOR THE PROJECT

Global economies are still largely reliant on carbon-based fossil fuels, but with the ever-present risk of climate change looming on the horizon, industries and governments are fully embracing a drive for economic decarbonisation. Within the Namibian context, Namibia can still be considered a net-carbon sink, but all aspects of life in the country are vulnerable to the short, medium and long-term impacts of climate change. According to WWF (2023) climate change are experienced through intensifying droughts and floods and presents a threat to the already arid Namibian conditions. It is expected that climate change will affect the annual rainfall patterns, change seasonality which is likely to add to water scarcity and threaten food security.

Namibia offers favourable solar and wind energy for the production of sustainable energy. Eco-friendly and/or sustainable energy provides an opportunity for new career paths, creating new jobs through green energy production plants and contributing to the economy whilst reducing reliance on other fuel sources that are not renewable, e.g., coal (Constellation, 2024). Green hydrogen is achieved by splitting water through electrolysis with the use of renewable energy, without the carbon dioxide by-product. Green hydrogen can be converted to green ammonia, as ammonia has a higher energy density, will be less costly to transport and have less technical obstacles (Amelang, 2023). Green ammonia is viewed as a key energy vector to accomplish global decarbonisation and potentially reach Namibia's 2030 goal to reduce greenhouse gas emissions by 91% (Acciona, 2020).

Additionally, the project will provide indicators to the relevant stakeholders on what is required from a governance perspective and guide the formulation of national policies, guidelines, standards and legislation geared toward sustainable practices.

The Proponent proposes that initially the project as a whole, will be a pilot project to scope the development, skills, competence, and standards of the Namibian market as there is an opportunity for growth and development within the country. In due course, green ammonia will be exported.

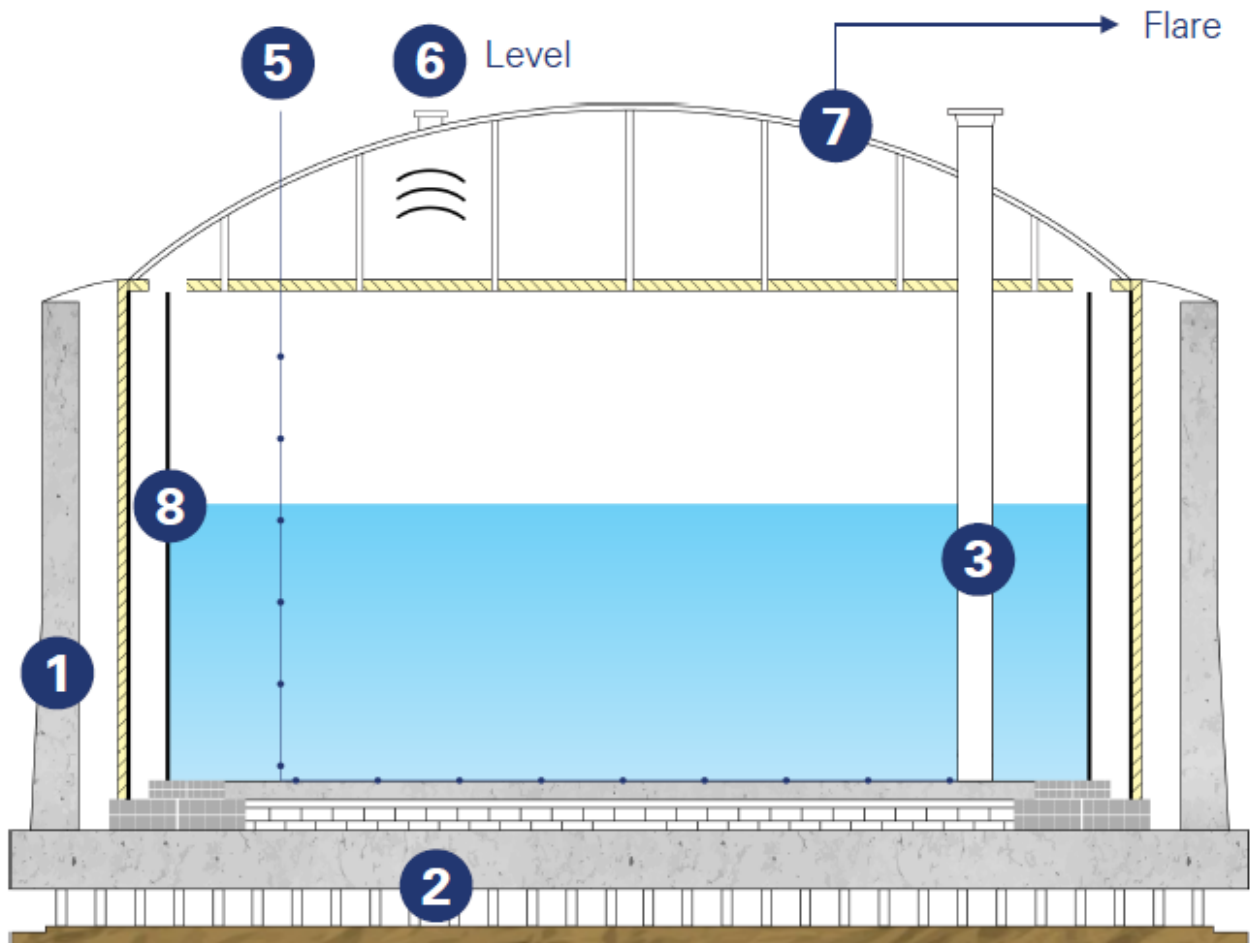
During the ammonia terminal project, it is proposed that the liquid ammonia be transported from an ammonia production plant via the ammonia pipeline to the terminal for storage and future exporting purposes. The ammonia terminal is therefore an important component in the development of the green ammonia industry within Namibia.

4.2 PROJECT PHASES – CONSTRUCTION PHASE

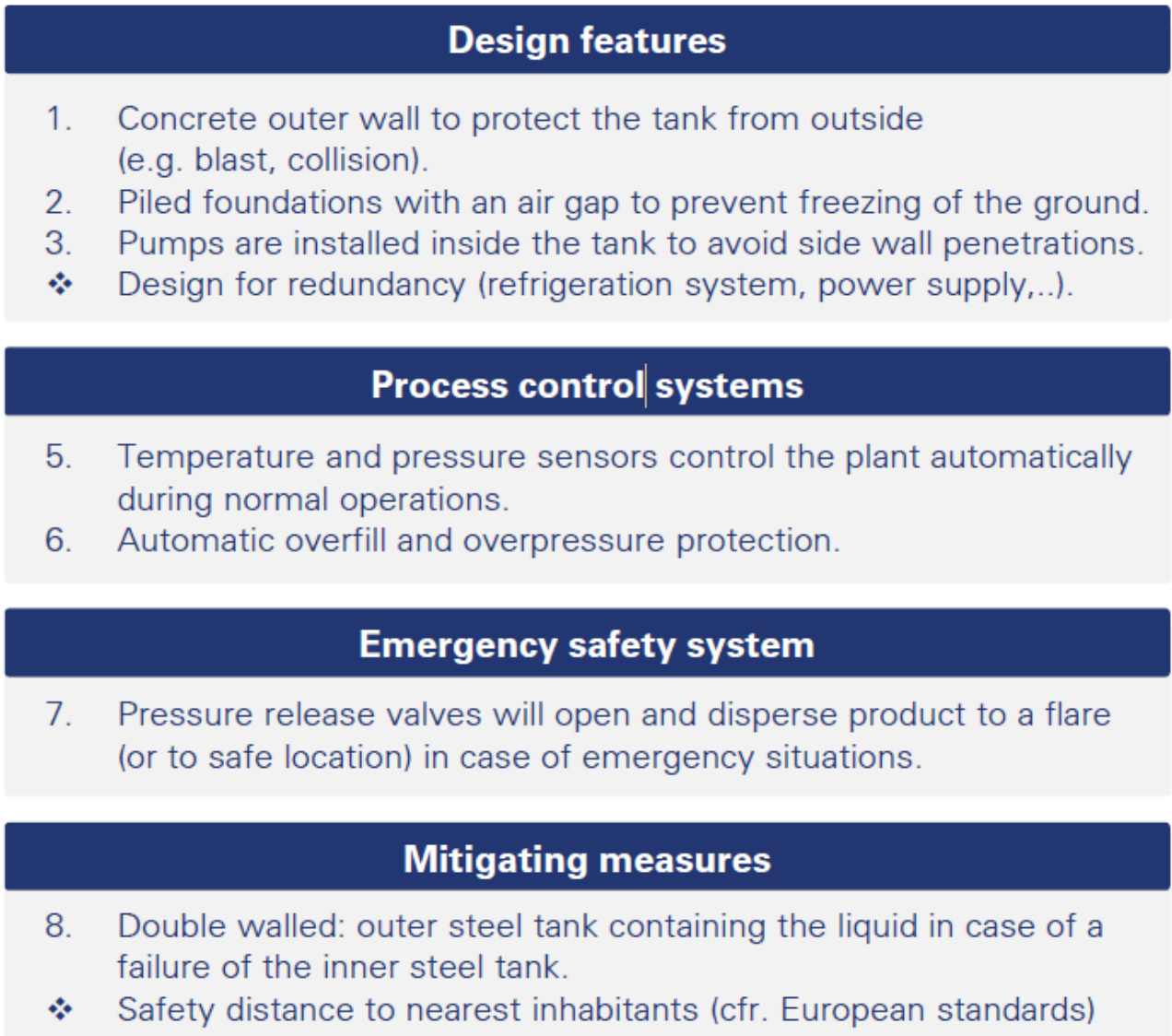
The proposed construction phase will include low-impact and non-intrusive activities. During the construction the following sections will be incorporated in the ammonia terminal:

- The installation of a double wall full containment ammonia storage tank of 40 000 metric tonnes (MT) capacity and the export facilities associated.
- A Nitrogen Generation Unit (NGU) to produce the nitrogen required for the utilities.
- An instrument Air Unit to produce air required for the Nitrogen Generation Unit.
- Fire/Demin water tanks and pumps.
- An emergency diesel generator.
- A wastewater system.
- BOG Compression unit.
- Flare unit.
- Scrubber & Aqueous Ammonia (AA) storage.

The ammonia storage is a full containment double wall steel/concrete tank fixed roof of 40000 MT where ammonia is stored in its liquid form at atmospheric pressure at -32°C. Figure 5 shows the terminal design with numbered labels and descriptions.



(a)



(b)

Figure 5 - Ammonia terminal design (a); Descriptions to the labelled components of the ammonia terminal structure (b), (Source: Cleanergy Solutions)

4.2.1 OPERATIONAL PHASE

During the operational phase, liquid ammonia will be transported from the ammonia plant to the ammonia terminal for storage. Ammonia will be loaded on a vessel for export. Figure 6 shows a representation of the overall block flow diagram of the ammonia terminal.

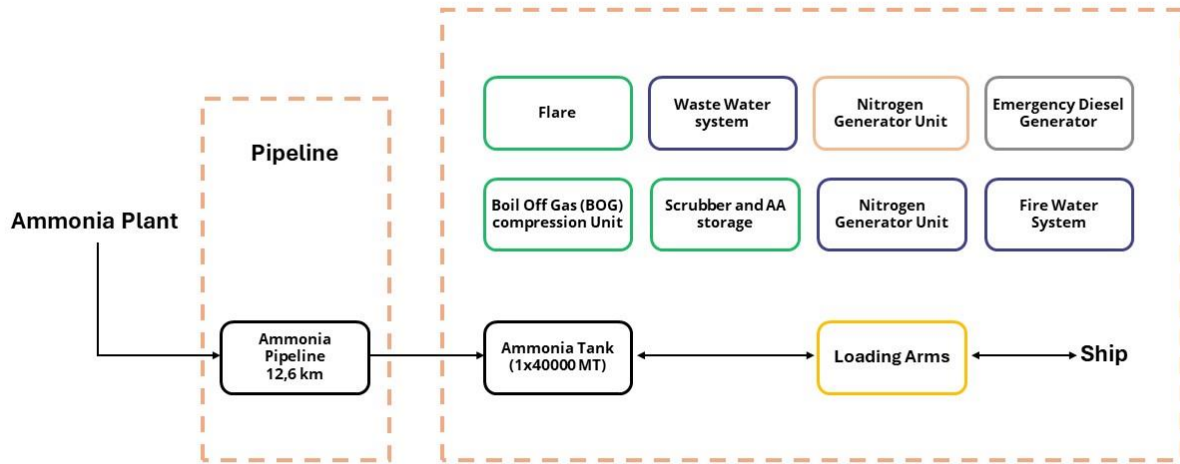


Figure 6 - Block Flow diagram of the ammonia terminal

4.2.2 EQUIPMENT AND MATERIAL

An instrument air package is provided for the ammonia terminal to provide plant air to the Nitrogen Generation Unit (NGU) and instrument air to the other users. Instrument air (IA) will be mainly used for analysers, actuators of control valves, emergency valves. This package includes air compressors with filters, compressors and interstage aftercoolers, compressed and instrument air receivers, and air dryer package.

4.2.3 POWER SUPPLY

During the construction phase and normal operation, power supply will be provided to all electrical consumers from the grid. Only during emergencies when the power supply from the grid is not possible, the power supply will be provided via an emergency diesel generator.

In the event of power loss, the terminal will undergo immediate emergency shut down (ESD). The refrigeration system power supply will be switched from the grid to the installed emergency diesel generator to continue cooling the storage tank but at a lesser capacity since the main vapor generation input lines will be shutdown. The emergency diesel generator consists of a Diesel Storage Tank, Diesel pumps and the emergency diesel generator.

4.2.4 WATER SUPPLY

During construction and operations of the ammonia terminal, approximately 20 m³/day potable water will be required and sourced from the Walvis Bay Municipality.

4.2.5 WORKERS AND ACCOMODATION

During the project, job opportunities may be available for unskilled and semi-skilled local workers. Employees are likely to reside in Walvis Bay and Swakopmund and therefore would not require accommodation on-site.

4.2.6 WASTE MANAGEMENT

The varying waste categories expected to be produced by the project are general household waste, plastics and hazardous waste. All household or non-hazardous waste if applicable will be disposed of at the local landfill site and the hazardous waste will be disposed at the disposal site in Walvis Bay.

4.2.7 WASTEWATER EFFLUENT

All the effluents generated by the ammonia terminal facilities will be handled by the Wastewater System to comply with Namibian regulations and standards.

Rain/Storm water will be collected in the First Flush Pit where oil leakages are controlled. If any oil leakage happens, then the Oily Water Pumps transfer the oily contaminated water to the De-oiling Package for oily content removal. The treated water will then be sent to the Observation Basin along with the rain/storm water from the rest of the site.

If there is ammonia contamination in the rain/storm water, then water will be sent by truck to a facility where it can be treated.

Storm water collected in the Observation Basin will then be analysed and transferred by the Observation Basin Pumps to the sea if the water quality is in line with local regulations. In case water in the observation basin is off spec, it should be handled outside of Ammonia Terminal facilities.

4.2.8 DECOMMISSIONING AND REHABILITATION STAGE

The EMP developed for the proposed Project sets out auditable management and rehabilitation actions for the Proponent to ensure careful and sustainable management measures are implemented. The proponent will have to implement rehabilitation measures at the Project decommissioning stage as outlined in the EMP.

4.3 ALTERNATIVES CONSIDERED

In terms of the Environmental Management Act, No. 7 of 2007 and its regulations, alternatives considered should be analysed and presented in the EIA reports. This requirement ensures that during the design evolution and decision-making process, potential environmental impacts, costs, and technical feasibility have been considered, which leads to the best option(s) being identified.

Potential alternatives range from alternative methodologies to technologies of construction. These will be considered throughout the duration of the impact assessment as more information becomes available and options are weighed. After the specialist studies are conducted all options and methods will be identified and considered based on the environmental and social impacts.

4.3.1 NO-GO ALTERNATIVES

Should the project not occur, the socio-economic and environmental benefits associated with the green hydrogen initiative in Namibia will be lost. Namibia has the opportunity to be a leader in the emerging green energy markets and be an international exporter of green ammonia, which may be a vital source of foreign investment. The green hydrogen vision leads to the creation of career paths, employment, contribution to the economy in terms of reducing energy reliance and income generation and provides a solution to present environmental concerns. According to the Nationally Determined Contribution (NDC) registry, Namibia has set bold goals to reduce greenhouse gas emissions by 2030 and pursuing green energy projects will strategically allow Namibia to reach milestones.

5 ENVIRONMENTAL AND SOCIAL BASELINE

5.1 BASELINE DATA COLLECTION

Initial environmental baseline and specialist studies relevant to the Project will commence to form part of this environmental and social impact assessment.

This section sets out the findings from the desktop study on the biophysical and socio-economic environments of the receiving environment in which the Project is situated. It is an important part of the scoping component of the assessment, as it determines if there are any knowledge gaps that require additional information prior to the assessment phase being completed.

5.2 LAND USE

The proposed ammonia terminal will be situated at the Walvis Bay Port area. The Port of Walvis Bay is located along the central western coast of Namibia with access to principal shipping route. The Walvis Bay port is the largest commercial port and backbone mode of transportation for many industries, packed with different facilities such as container terminal, privately operated bulk cargo terminal and tugboats. The Walvis Bay port is a highly urbanised, disturbed and continuously expanding area. Figure 7 shows area surrounding stakeholders of the proposed location of the ammonia terminal.

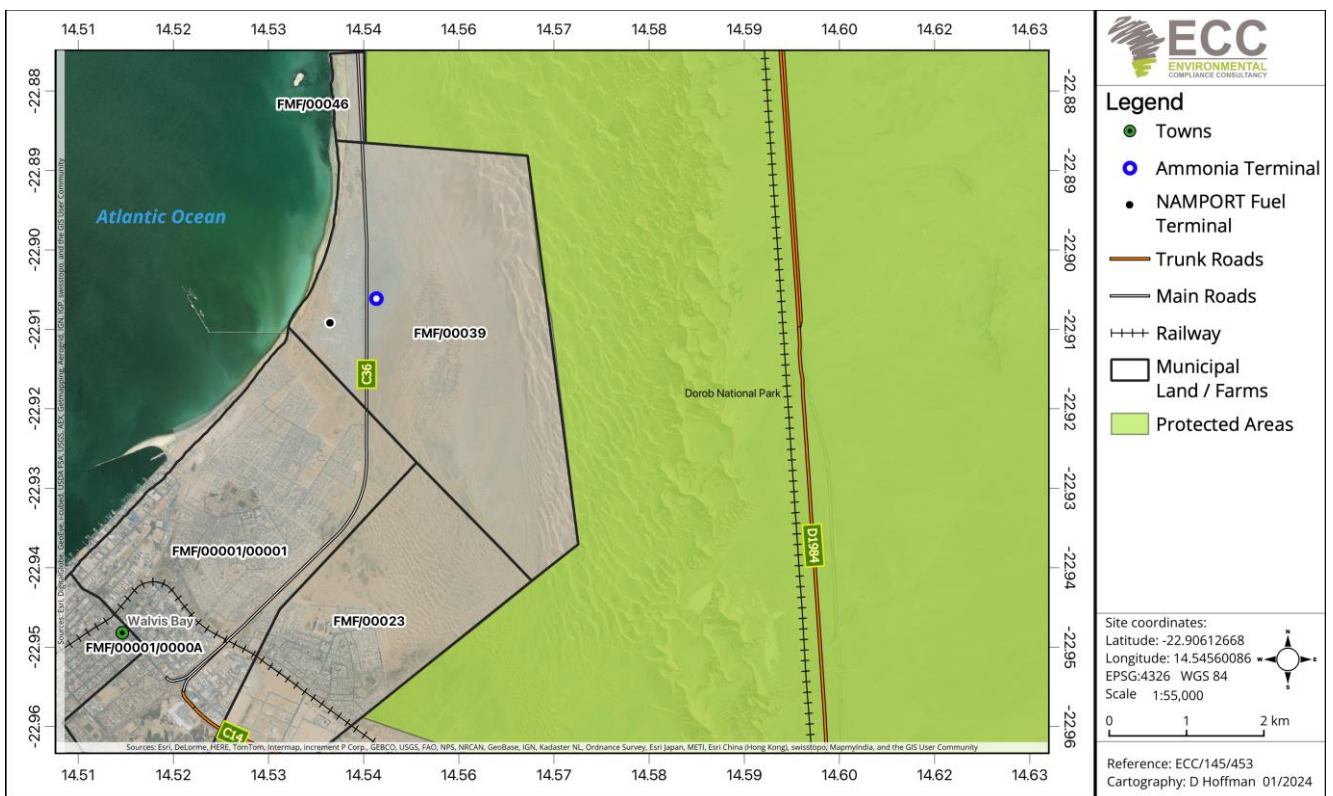


Figure 7 - Stakeholder map

5.3 CLIMATE

Climate and weather data from meteoblue (2024) along with desktop QGIS data for the site has been used to provide the climate data for the project area. Summer months are characterised by warm temperatures with an average maximum temperature of 29°C and average minimum temperature of 15°C

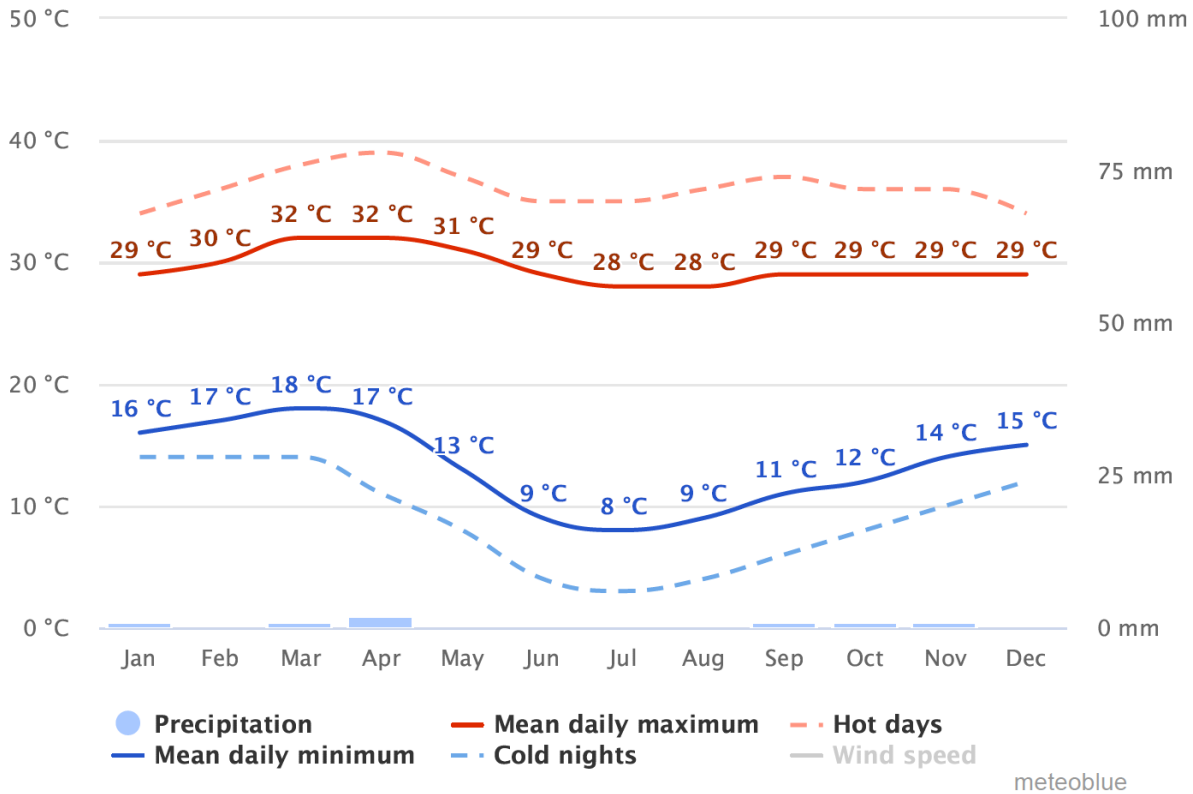


Figure 8). The months in which the warmest temperatures are generally recorded are between November and May. Winter months are cool with maximum temperatures reaching 29°C and minimum temperatures reaching 8°C. The months with the coldest temperatures are between June and September. The overall annual temperatures are stable and steady. During the winter months, the towns along the coast experience fiery blasts of strong, hot air that are referred to as East Winds. These strong winds from the eastern direction descend over the escarpment, pick up and carry large quantities of sand over and into the Atlantic Ocean (Atlas of Namibia Team, 2022).

The average solar radiation annual is between 5.4 to 5.6 which is low due to the frequent cloud and fog cover experienced along the coast. Fog defines much of the Namib Desert’s climate (Atlas of Namibia Team, 2022). The approximate number of days that this area receives fog are more than 125 days which is the most compared to the inland and eastern areas of Namibia (Mendelsohn, Jarvis, Roberts, & Robertson, 2002). Majority of the summer days are partly cloudy whereas in winter, there are more sunny days as shown in Figure 9. The months with the highest humidity, have humidity of approximately more than 90% relative humidity (RH) and the driest months have a humidity between 40 and 50% RH. The area is located within the Desert biome with dry conditions, receiving 0 to 50 mm average annual rainfall.

Potential evaporation is between 1680 and 1820 mm per year (Mendelsohn, Jarvis, Roberts, & Robertson, 2002). The proposed site receives wind speeds up to 38 km/h, with predominant wind direction being Southwest (SW) and East-Northeast (ENE) depicted in Figure 10.

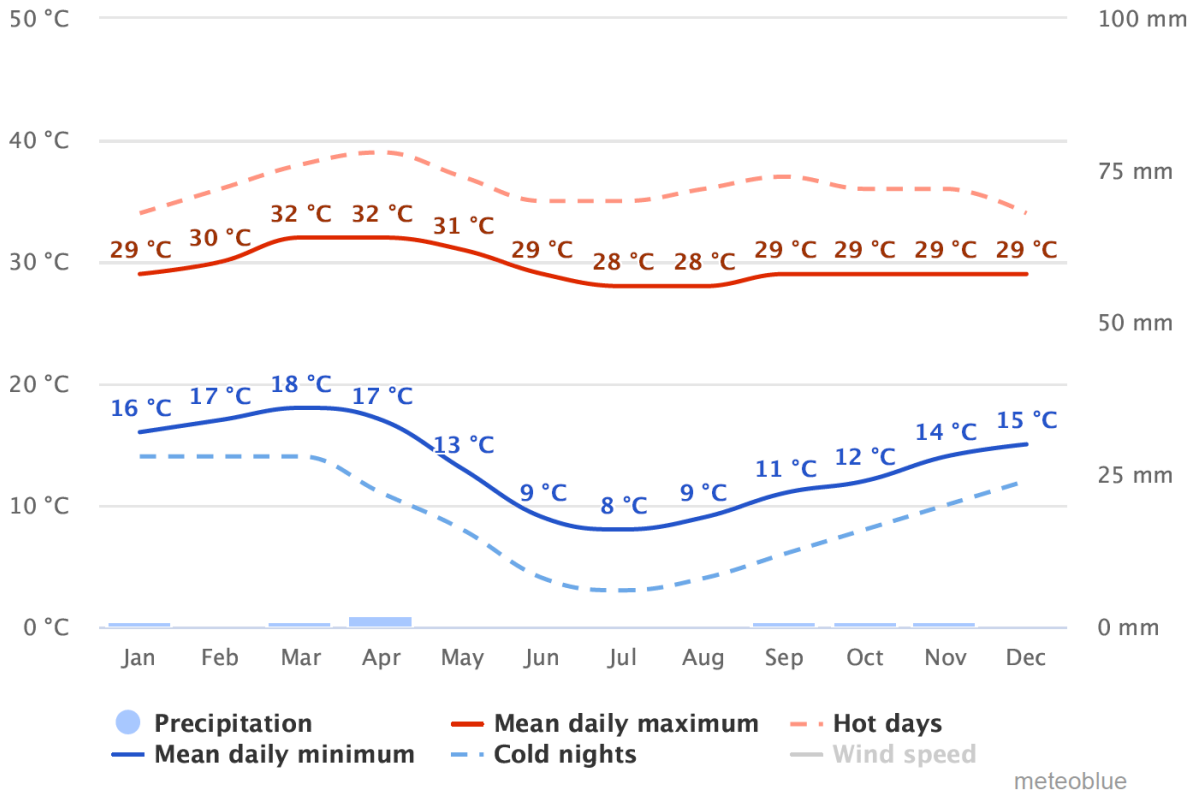


Figure 8 - Average temperature and precipitation (meteoblue, 2024)

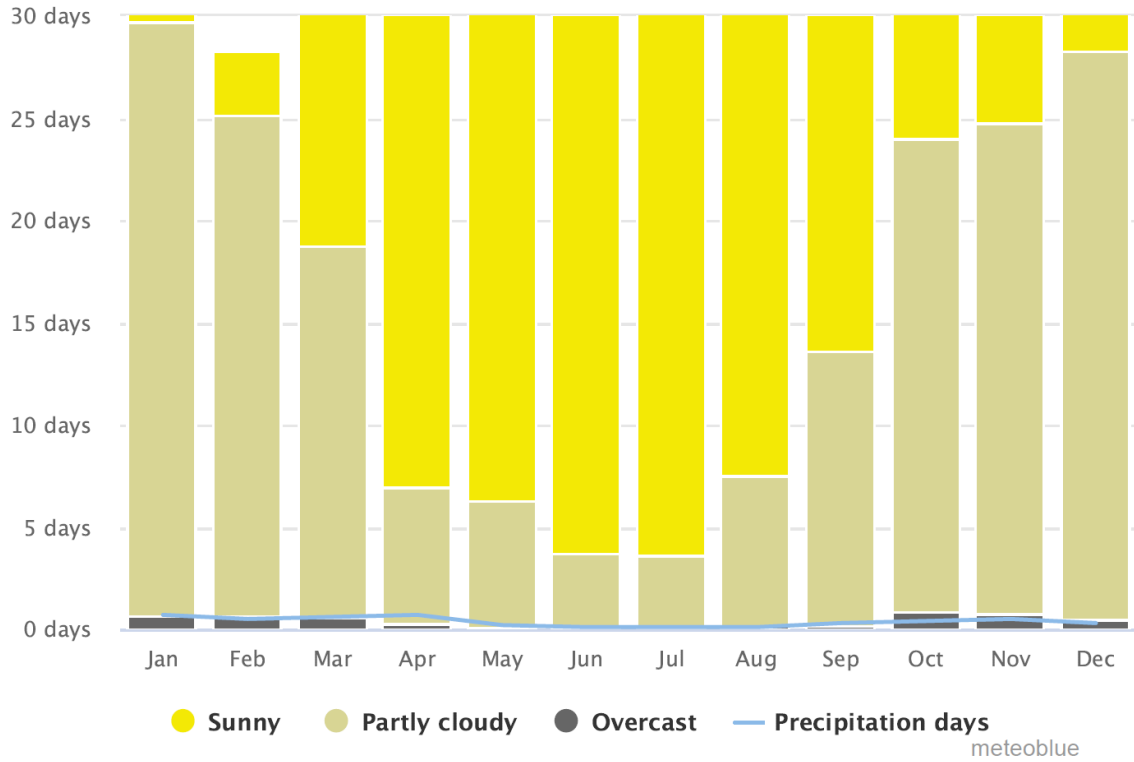


Figure 9 - Annual cloud cover (meteoblue, 2024)

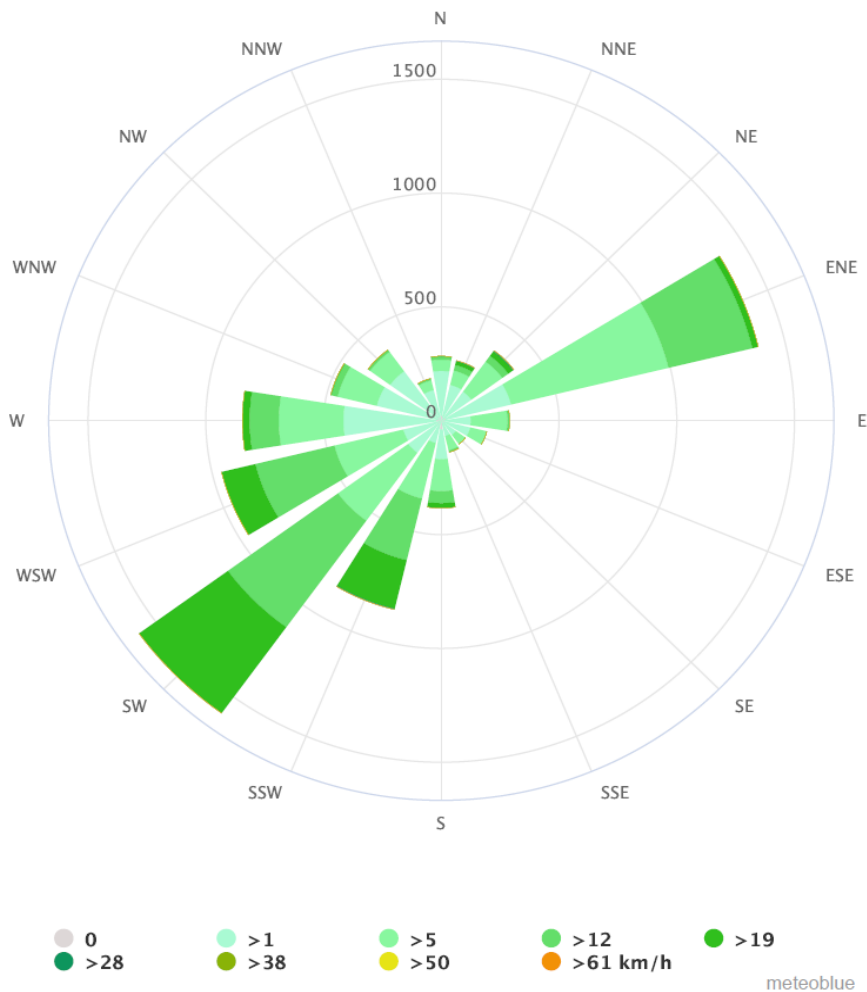


Figure 10 - Average wind speed and direction in this area (meteoblue, 2024)

5.4 SOILS, GEOLOGY AND TOPOGRAPHY

The regional geology of this area consists mainly of the Kalahari Group with the rock type characterised as Kalahari and Namib Sands (Figure 11). The Kalahari Group covers an extensive section along the southern part of Africa and form a low-relief landscape dominated by considerable unconsolidated sand (Matomon, et al., 2014). The proposed site is located on the Dune Belt that extends between Walvis Bay and Swakopmund and lies between the B2 and D1984 roads. The main rock types for this area are dune sand and calcrete. Calcrete is commonly found in arid to semiarid regions and are described as a calcium-rich duricrust, a hardened layer in or on a soil (Britannica, 2008).

The soil type in this area is dominated and characterised by Sodic Gleyic Petrosalic Solonchak as shown in Figure 12. Sodic soils refer to a high concentration of sodium ions absorbed at cation exchange and are often characterised as poor soil-water and soil-air association which generally impacts root growth, plant production and would result in an increase in soil erosion (Levy &

Shainberg, 2005). Solonchak soils have a high concentration of soluble salts at some time in the year and this type of soil is largely restricted to the arid to semi-arid climatic zones and coastal regions. The salts in the soil are strongly saline which is attributed to the Atlantic Ocean, however saline concentrations in soils may occur through various reasons such as geological strata and man-induced activities such as irrigation. Many saline soils in waterlogged backswamps are Gleyic Solonchak (International Soil Reference and Information Centre, n.d.). Petrosalic Solonchak refers to soil structure influenced by the soluble salts in the soil. The soil is cemented – closely packed and is known as a root-restricting layer commonly seen in arid to semi-arid regions.

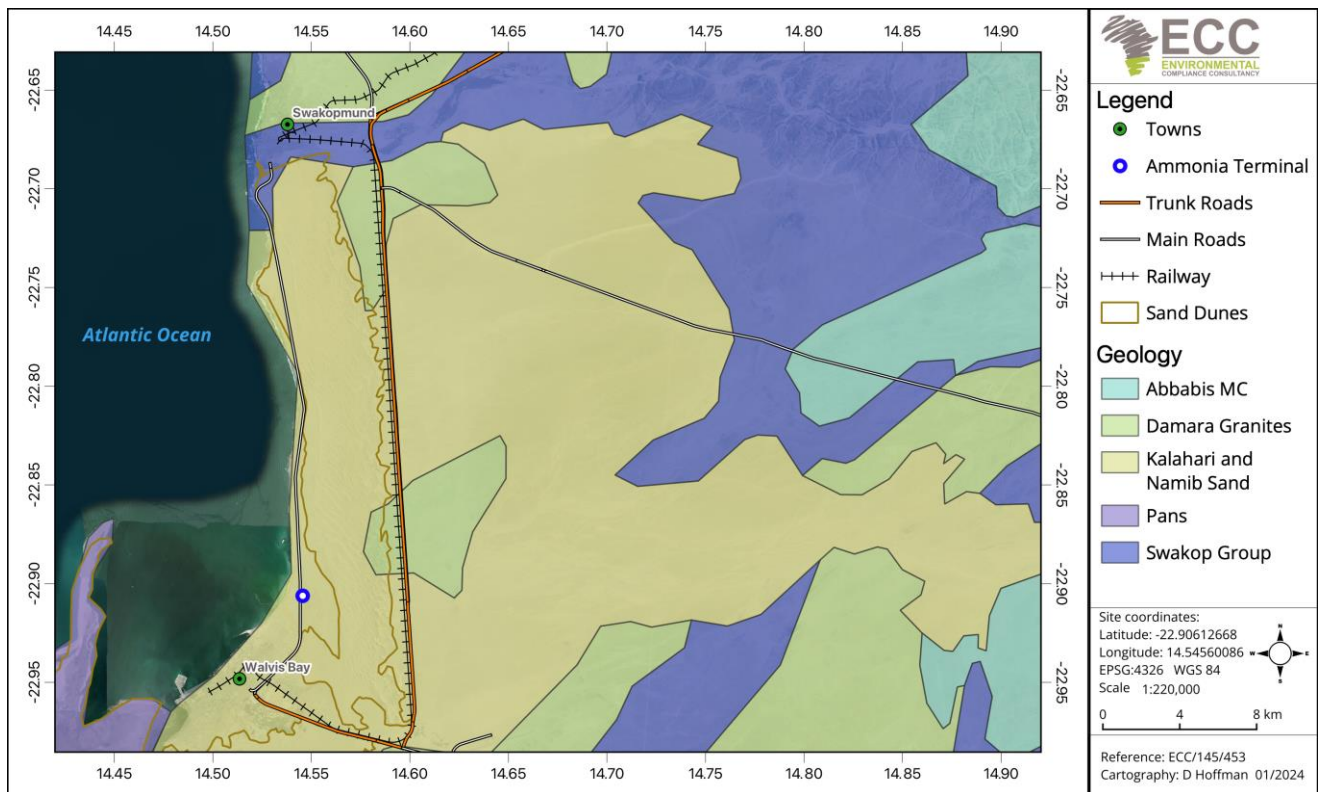


Figure 11 - Geology of the area

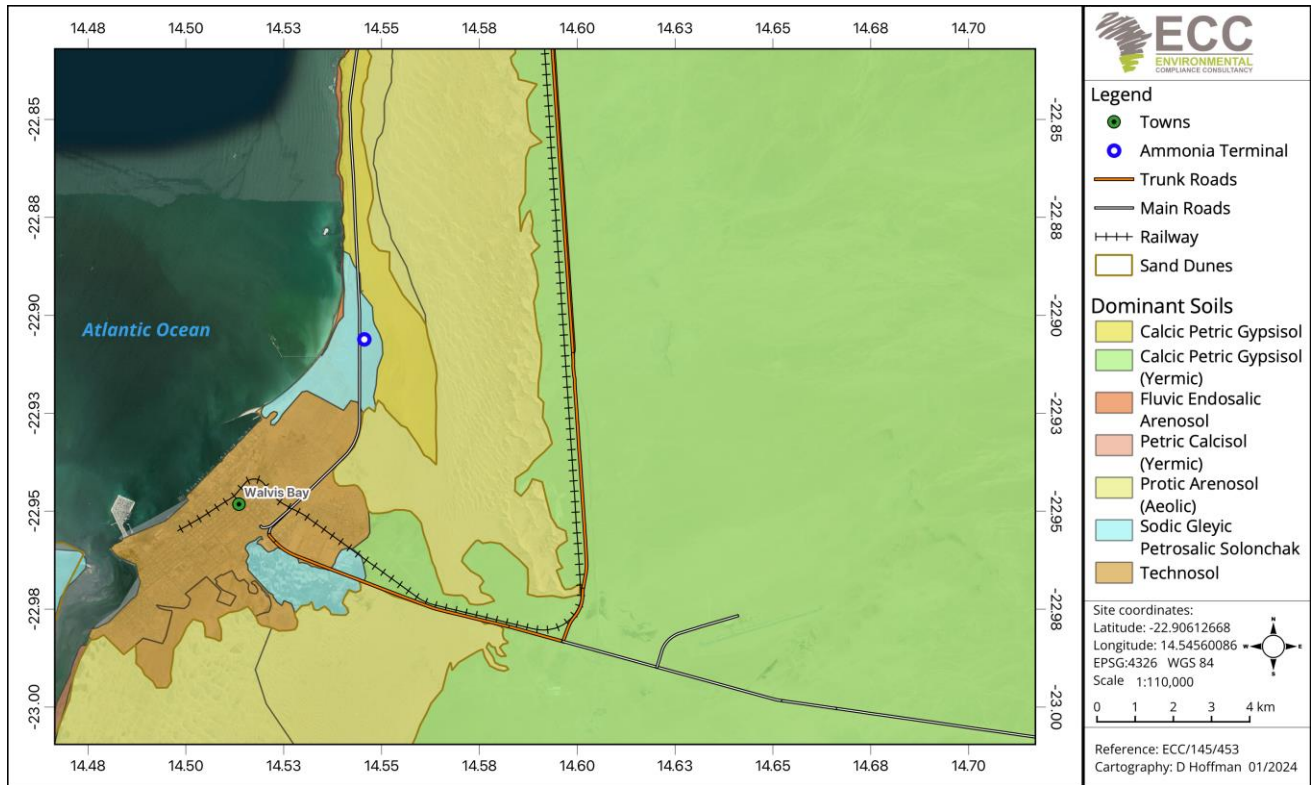


Figure 12 - Soil composition of the area

The topography of the Project site is relatively flat. The elevation increases toward the eastern direction of Namibia. The overall elevation of the proposed site varies between 0 and 100 m (Figure 13).

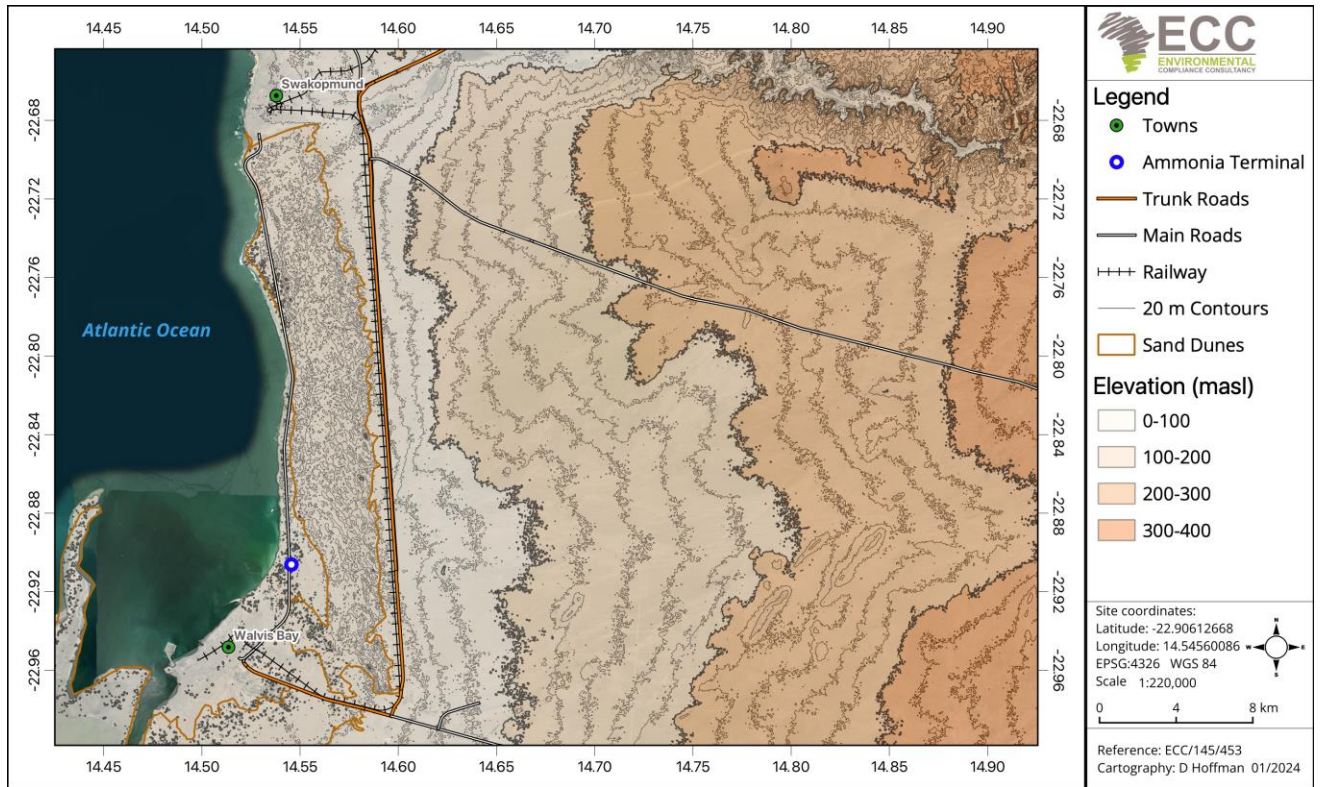


Figure 13 - Elevation of this area

5.5 HYDROLOGY AND HYDROGEOLOGY

The proposed project site covers the Erongo groundwater basin (Figure 14). The rock body over which the site falls contains very limited groundwater potential, yielding less than 0.5 m³ of water per hour. This water may be explored as an emergency water supply, however it is highly unlikely that water will be found in this area. The groundwater quality along this area is unknown or limited information may be available (Atlas of Namibia Team, 2022).

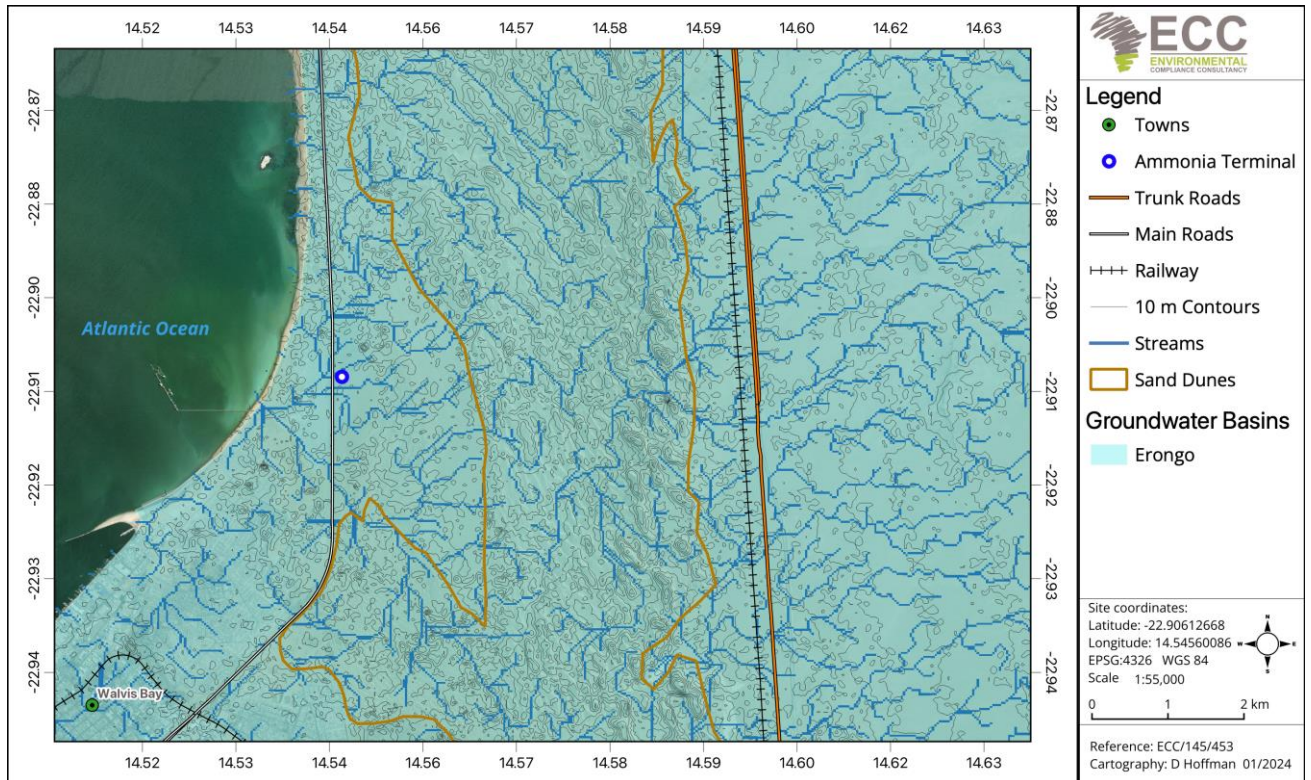


Figure 14 - Hydrology and hydrogeology of the area

5.6 BIODIVERSITY BASELINE

5.6.1 GENERAL BIOME CHARACTERISTICS AND FLORA

The proposed project area is located within the Southern Desert area (Figure 15) in the Namib Desert. Despite the extreme and unfavourable climatic conditions, the Namib Desert's biotic communities are extraordinarily appealing and unique (Wassenaar, et al., 2013). The dominant structure is grassland and dwarf shrublands. The plant diversity is characterised as extremely low with less than 50 species. The plant endemism rate is low with approximately 2 to 9 species. Tree cover is extremely low, and the dominant vegetation are *Brownanthus arenosus* and *Othonna cylindrica*. *Brownanthus arenosus* is characterised as a succulent subshrub adapted to the dry conditions of the desert and the drier sections of the shrubland biome in Namibia and South Africa. *Othonna cylindrica*, similarly to *Brownanthus arenosus*, is a succulent subshrub with bright yellow flowers and near-endemic to Namibia.

The floristic group refers to the geographical distribution of seemingly unrelated vegetation species overlap in such a way that suggests that they have an origin in common – similar evolutionary history (Atlas of Namibia Team, 2022). The floristic group of the proposed area is the Welwitschia Desert where up to 200 species are co-inhabitants.

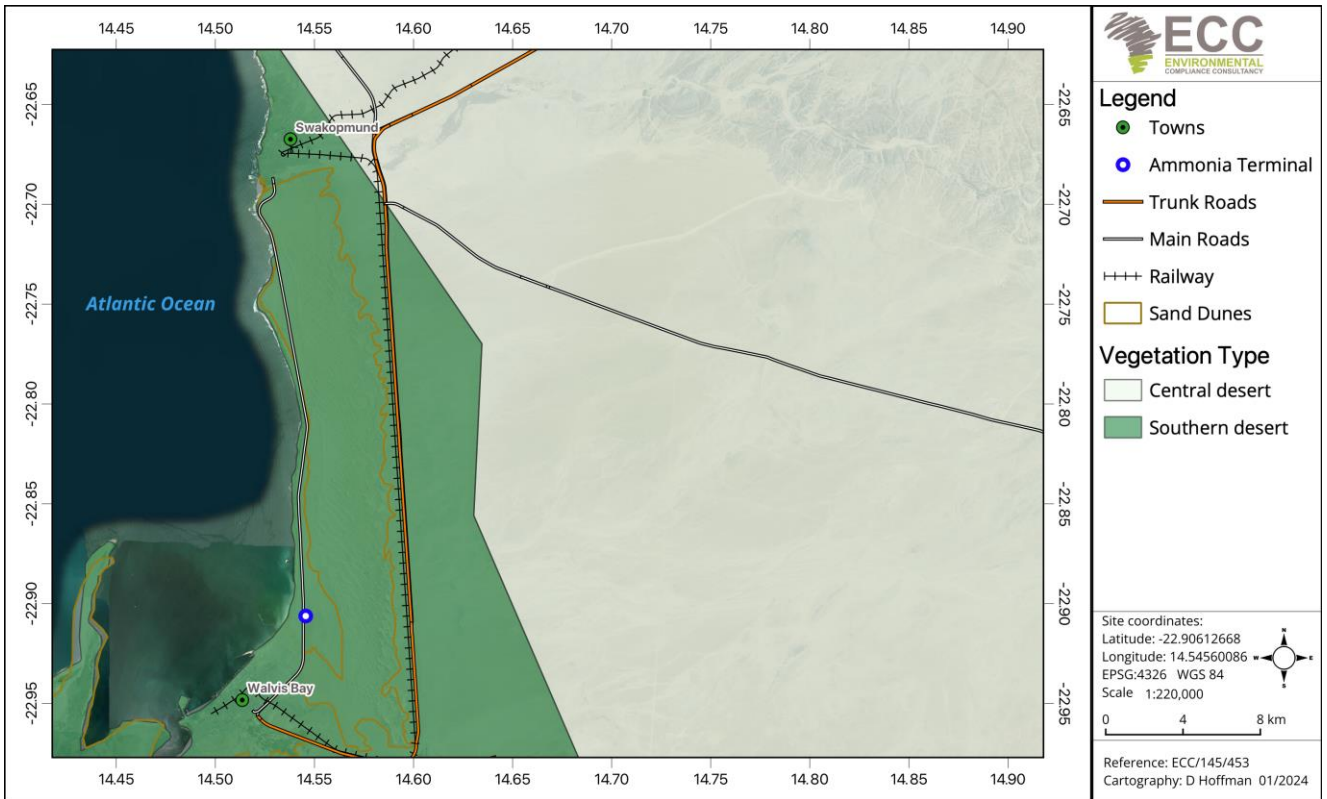


Figure 15 - Vegetation of the area

5.6.2 FAUNA

The overall terrestrial diversity of the proposed area is low in comparison to the central and northeastern parts of the country. The overall bird diversity is moderate with approximately 141 to 170 species. The Walvis Bay area tends to be a hotspot for bird life, as birds are attracted to the species richness and abundance because of the nutrients brought by the highly productive upwelling system of the Benguela Current (BirdLife International, 2024). The diverse and unique bird life presents a huge attraction for tourists with approximately 100 000 birds, e.g., flamingos and pelicans. The reptile diversity is described as low (41-50 species), with lizards making up majority of the reptile species with approximately 24 to 27 species and local snakes – 10 to 14.

Amphibian patterns are closely related to average rainfall due to the breeding habits in water and the reliance on moist habitats during the frog lifecycle. Due to the low average rainfall in this area, amphibians are quite scarce with 1-3 species. The overall mammal diversity is low with 16 to 30 species of which half is endemic.

5.7 SOCIAL AND SOCIO-ECONOMIC BASELINE

5.7.1 INTRODUCTION

The proposed project is located outside of Walvis Bay in the Erongo Region. The Erongo Region is found on the central western area of Namibia covering approximately 63586 km² and comprises

7.7% of Namibia's total area. The Walvis Bay Rural Constituency has an area of 9134 km². A total of 81% of the population is economically active in the Walvis Bay Urban Constituency, the highest of all Erongo Region's constituencies (Erongo Regional Council, 2022).

Walvis Bay, being a port city, fits in as an integral part of Namibia's vision to become a logistics hub for the SADC region. Namport is amongst the largest employers in Walvis Bay Urban Constituency and therefore a main driver for growth and development (Erongo Regional Council, 2022). Namibian waters are highly productive with a rich and unique diversity of marine and coastal species. Namibia's fishing industry is among the top export earners of foreign currency (Erongo Regional Council, 2015). The tourism industry also plays a vital role in the economy of the Walvis Bay-Swakopmund area. Along the central coast, Swakopmund, a resort town, and Walvis Bay, offer an oasis where the sea meets the desert (Namibia Tourism Board, 2024).

Walvis Bay has the potential for future sustainable development and growth. Industries such as manufacturing, mining and agriculture are expected to shift to more sustainable practices and reduce the carbon footprint on a global scale (Shiwayu & Hartmann, 2023).

5.7.2 POPULATION AND GROWTH RATE

In 1991, the Namibian population stood at 1.4 million people and the Erongo Region had a population of 55 470 (Iipumbu, 2024). The preliminary population and housing census reported that Namibia's population after 32 years has doubled to 3 022 401 with Erongo Region making up 240 206 (Namibia Statistic Agency, 2023). The first main population increase in 1994 was noted due to the inclusion of Walvis Bay into Namibia from South Africa. The increase between 2001 and 2011 can be attributed to the increase in industrialisation in the coastal towns and mining activities. Currently Erongo Region is the fifth most populated region in the country with a population density of 3.8 persons per km² and the average household size of 3.1 persons per household which is below average of 3.8 (Namibia Statistic Agency, 2023).

The growth rate in the Erongo increased greatly in the past decades, with more males residing in the Erongo than females, with a difference of approximately 4 400. This is mainly attributed to job availability in the industrialised market at the coast, whereby traditionally certain skill sets were not associated to be 'female jobs'. Moreover, a high rate of urbanisation is experienced in the Erongo Region and is directed towards the Walvis Bay-Swakopmund area.

5.7.3 POVERTY AND UNEMPLOYMENT

The three industries in which most Namibian citizens are employed are Agriculture, forestry and fishing; Accommodation and food services activities; and Wholesale and retail trade. In 2018 it was reported that 53.4% of employed Namibians work in the private sector and 21.5% by the state (Namibia Statistics Agency, 2019). State-owned enterprises provide jobs for 7.6% of Namibians and private individuals - 16.6%. Wages and salaries were reported as the main income source of 47.4% of households in Namibia.

It has been reported that the overall unemployment rate is approximately 35%, with youth unemployment rate estimated at 50% (Shikololo, 2023). The highest education obtained by most of the country (approximately 32%) is Junior secondary level of secondary school (Namibia Statistics Agency, 2019).

The labour force survey stated that Erongo region has the lowest unemployment rate (approximately 21.9%) in the country (Namibia Statistics Agency, 2019). Approximately 80% of Walvis Bay Urban constituency residents' main source of income is salaries and wages followed by non-farming businesses at 9% and cash remittance at 5%.

5.7.4 ECONOMIC ENVIRONMENT

5.7.4.1 *Infrastructure - Namport*

The Namibian Ports Authority (also referred to as 'Namport' or the 'Authority') was established by the Namibian Ports Authority Act, No. 2 of 1994 (Namport, 2023). Namport manages Namibia's ports in Walvis Bay and Lüderitz. The Port Walvis Bay is Namibia's largest commercial port, receiving approximately 3,000 vessel calls each year and handling about 5 million tonnes of cargo. The Port of Walvis Bay handles container imports, exports and transshipments, as well as bulk and break-bulk of various commodities and serve a wide range of industries such as the petroleum, salt, mining and fishing industries (Namport, 2023). Both bulk and bagged salt are exported from the Port of Walvis Bay.

According to Namport's integrated annual report for the financial period from 1 April 2022 to 31 March 2023, Namport has recorded a revenue increase of approximately N\$1.5 billion or 22% compared to the N\$1.2 billion increase recorded in 2022 (Endjala, 2024). The profit was set against a target of N\$1.2 billion while the ports authority announced an operating profit of N\$411 million compared to the 2022 financial year which recorded N\$375 million (Endjala, 2024).

5.7.4.2 *Fisheries*

The central Namibian coast is characterised by its nutrient-rich cold Benguela Current and upwelling system in the Atlantic Ocean, which supports a highly productive fishing industry. More than 20 species of fish, lobsters and crabs are commercially harvested in these waters (Erongo Regional Council, 2015).

The fishing industry is the third largest economic sector contributing approximately 3.5% of GDP since 2007. It is administered by the Ministry of Fisheries and Marine Resources (MFMR) and is regarded as an important sector because (i) it is the fourth-largest foreign currency earner (as of 2012); (ii) it is a big employer, especially in the Erongo region, employing 25,000 people in 2012; and (iii) it has potential to contribute to the country's food security and livelihood diversification (Chiripanhura & Teweldemedhin, 2016). The value of fishing, onshore and offshore processing accounted for N\$3,410 million in 2008 (Erongo Regional Council, 2015). The industry at Walvis Bay,

and Lüderitz in the Karas Region, employs about 14,000 workers, of which about 43% work on vessels at sea while 57% are involved in onshore processing (Erongo Regional Council, 2015).

5.7.4.3 *Tourism*

The hospitality and tourism industry in Namibia contributed N\$5.2 billion directly to the GDP, which is equivalent to 3.5% of the total GDP and is responsible for 44,700 of direct employment in the sector, including over 2,900 tourism-based jobs created in community conservation areas in 2018. (GIZ, 2022).

The Erongo region recorded an occupancy rate of 59.36%, in the fourth quarter of 2022, compared to 50.01% in 2019, showing growth after the effects of the COVID pandemic (Nangolo, 2023). There are a wide range of tourist hot spots in the Erongo region, with Swakopmund and Walvis Bay being key attractions on a national and international scale. A variety of tourist attractions include Dune 7, Sandwich Harbour, Welwitschia Plains, Atlantic coastline and the Namib Desert, Cape Cross Seal Reserve, Dead sea and the wider skeleton coastline (Nangolo, 2023). Furthermore, Walvis Bay's lagoon and wetlands are regarded as one of the most important coastal Wetlands in southern Africa due to its birdlife (Erongo Regional Council, 2022).

5.7.4.4 *Energy and sustainable practices*

Energy demand is continuously increasing and plays a vital role in all developed and developing countries. In Namibia there is heavy reliance on fossil fuels which accounts for ~63% of the total energy consumption (WWF Namibia, 2023).

Currently, Namibia is not an oil-producing country and at present does not possess the capacity to refine crude oil for petrol and fuel production (Institute for Public Policy Research, 2023). Fuels are transported internationally, and lubricants are imported from South African refineries via the Walvis Bay harbour. However, Namibia is continuously encouraging efforts to find gas and oil reserves in an attempt to increase economic growth and lessen the reliance on imports (WWF Namibia, 2023). Exploration for oil and gas is underway under the control of the National Oil Company, NAMCOR. It has been reported that recent discoveries of large reserves of crude oil off the Namibian coast could potentially double the gross domestic product (GDP) by 2040 (Mathekga, 2022).

Green hydrogen is a potential fuel now introduced in Namibia by Cleanergy Solutions Namibia (Pty) Ltd, in which hydrogen molecules are separated from water with electrolysis powered by renewable energy. Green hydrogen has the potential to reduce the use of fossil fuels especially in the transport sector while mitigating climate change; reduce reliance on imported fuel and secure economic growth in Namibia (WWF Namibia, 2023).

Cleanergy Solutions Namibia launched the construction of Africa's first green hydrogen plant, refueling station and hydrogen academy in Walvis Bay in 2023. The main goal of the Hydrogen Academy is to provide the skill and training related to the production and usage of hydrogen as fuel

for heavy duty and mining equipment. This produces a whole new exciting field that explores new initiatives and provides new career and employment opportunities (Cleanergy Solutions Namibia (Pty) Ltd, 2023).

5.7.5 COMMUNITY HEALTH

Namibia's health services are twofold: private (serving approximately 18% of the population with medical aid) and public (serving the remaining 82%) (Christians, 2020). Public health falls under the Ministry of Health and Social Services (MoHSS), which operates a four-tiered health system, consisting of primary healthcare (PHC) sites, district hospitals, intermediate hospitals and a referral hospital (Christians, 2020). Overcrowding is common at hospitals due to higher quality of care compared to rural clinics. (Namibia Ministry of Health and Social Services , 2017).

Walvis Bay currently has the highest rate of tuberculosis (TB) infections in Namibia. This was also the first town during the COVID-19 pandemic where cluster infections were occurring. This may be due to the international harbour, various trucking companies and overcrowding in townships, whereby airborne diseases travel faster. In 2015 it was reported that in the Erongo Region the HIV prevalence in women between ages of 15 and 49 was 14.6% and men between the same ages 10.4% (Namibia Ministry of Health and Social Services, 2015). The 2016 Ministry of Health Centennial Surveillance Survey confirmed Walvis Bay had a HIV/AIDS prevalence rate estimated at 17.6% and Swakopmund of 18.6%. The national prevalence rate average stands at 17.2%. Both Swakopmund and Walvis Bay are above the national average; however, Walvis Bay has shown a noted decrease from previous surveys (29% in 2009) and Swakopmund has shown a significant increase from the 2015 survey (10.5%). Nationally, for urban areas, the age group 45-49 group had the highest prevalence rate, whereby in rural areas the age group 35-39 had the highest prevalence rate.

5.8 CULTURAL HERITAGE

Information from the Namibian GIS data, Atlas of Namibia and other sources, suggests that although the Walvis Bay town is rich in history, the project area itself shows no evidence of heritage sites. A chance finds plan will be incorporated into the EMP, should discoveries of heritage remains be found/ unearthed during the project activities.

6 IMPACT IDENTIFICATION AND EVALUATION METHODOLOGY

6.1 INTRODUCTION

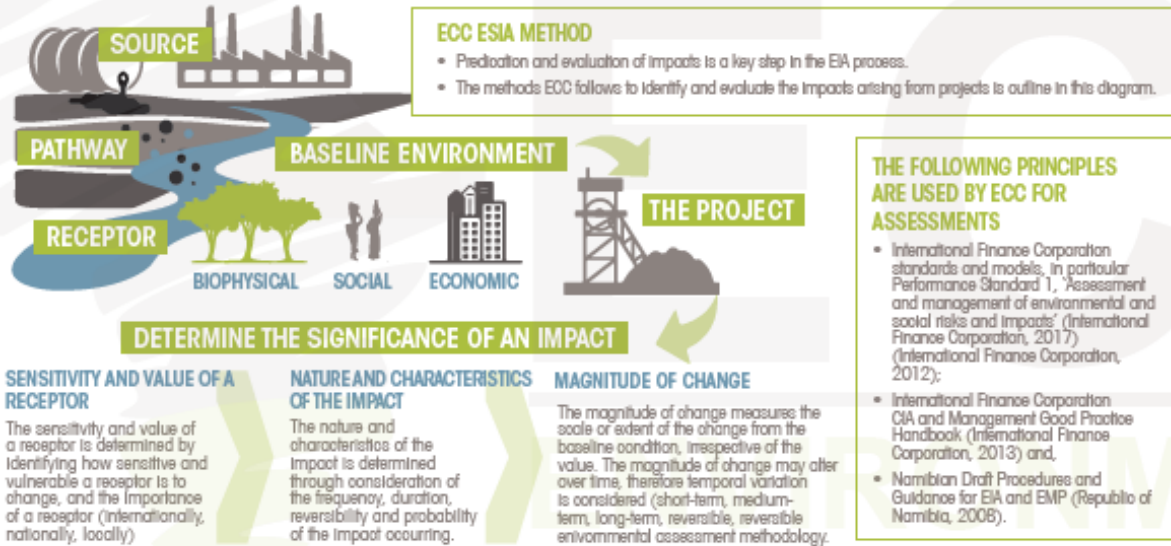
The impact assessment method described in this chapter by ECC is designed to systematically identify and evaluate potential environmental and social impacts that may arise from a proposed project. The method takes into consideration the baseline characteristics of the project area and assesses the significance of impacts based on various factors, including the sensitivity and value of environmental and social receptors, the nature and characteristics of the potential impact, and the magnitude of potential change.

The method shown in Figure 16 provides assessment guidance that is used to evaluate impacts, and it also acknowledges any limitations, uncertainties, and assumptions associated with the assessment methodology. It outlines how impacts are identified and evaluated, and how the level of significance is derived. The method also addresses the application of mitigation measures in the assessment, and how additional mitigations are identified.

This chapter provides a structured approach for evaluating the potential impacts of a proposed project on the environment and social aspects. It considers various factors to determine the significance of impacts and provides guidance on how to identify and evaluate potential impacts. It also recognises the limitations and uncertainties associated with impact assessment methodologies, which adds transparency and credibility to the assessment process.

Overall, this chapter provides a comprehensive and systematic approach for conducting impact assessments, which can help ensure that potential environmental and social impacts are thoroughly evaluated and addressed in the decision-making process for the proposed project. However, it is important to note that the effectiveness of this method would ultimately depend on its implementation and the accuracy of the baseline data and assumptions used in the assessment. Therefore, regular reviews and updates of the methodology based on new information and feedback from stakeholders would be recommended to improve its accuracy and relevance.

ECC IMPACT PREDICATION AND EVALUATION METHODOLOGY



ECC – NATURE OF IMPACT

+ BENEFICIAL (POSITIVE) | **- ADVERSE (NEGATIVE)**

An impact that is considered to represent an improvement on the baseline or introduces a positive change.

An impact that is considered to represent an adverse change from the baseline or introduces a new undesirable factor.

REVERSIBILITY

REVERSIBLE | **PARTLY REVERSIBLE** | **IRREVERSIBLE**

Impacts are reversible and recoverable in the future

Some parts of the impact can be reversed while others remain

Impacts which are not reversible and are permanent

DURATION

TEMPORARY | **SHORT TERM** | **MEDIUM TERM** | **LONG TERM** | **PERMANENT**

Transient; a period of less than 1 year

Impacts that are likely to last for the duration of the activity causing the impact and are recoverable (1-5 years)

Impacts that are likely to continue after the activity causing the impact and are recoverable (5-15 years)

Impacts that are likely to last far beyond the end of the activity causing the damage (greater than 15 years with impact ceasing after decommissioning of the project)

SCALE OF CHANGE - EXTENT / GEOGRAPHIC SCALE

ON-SITE | **LOCAL** | **REGIONAL** | **NATIONAL** | **INTERNATIONAL**

Impacts that are limited to the boundaries of the proposed project site

Impacts that occur in the local area of influence, including around the proposed site and within the wider community

Impacts that affect a receptor that is regionally important by virtue of scale, designation, quality or rarity.

Impacts that affect a receptor that is nationally important by virtue of scale, designation, quality or rarity.

Impacts that affect a receptor that is nationally important by virtue of scale, designation, quality or rarity.

ECC – TYPE OF IMPACT

DIRECT | **INDIRECT** | **CUMULATIVE**

Impacts causing an impact through direct interaction between a planned project activity and the receiving environment/receptors.

Impacts that result from other activities that are encouraged to happen as a result / consequence of the Project. Associated with the project and may occur at a later time or wider area

Impacts that arise as a result of an impact and effect from the project interacting with those from another activity to create an additional impact and effect

MAGNITUDE OF CHANGE

VERY HIGH / UNKNOWN | **HIGH / MAJOR** | **MODERATE** | **LOW / MINOR** | **NONE / NEGLIGIBLE**

Loss of resource, significantly affecting the long term quality and integrity of a resource; irreparable damage or loss of key characteristics, features or elements; or the magnitude is too great to quantify as it is unknown.

Loss of resource, and quality and integrity of resource; severe damage to key characteristics, features or elements; or Large scale or major improvement of resource quality; extensive restoration or enhancement; major improvement of attribute quality.

Loss of resource, but not adversely affecting its integrity; partial loss of/damage to key characteristics, features or elements; or Benefit to, or addition of, key characteristics, features or elements; Improvements of attribute quality.

Some measurable change in attributes, quality or vulnerability; minor loss of, or alteration to, one (or maybe more) key characteristic, feature or element; or

Minor benefit to, or addition of, one (or maybe more) key characteristic, feature or element; some beneficial effect on attribute quality or a reduced risk of a negative effect occurring.

Very minor loss or detrimental alteration to one (or maybe more) characteristic, feature or element; or

Very minor benefit to, or positive addition of, one (or maybe more) characteristic, feature or element.

PROBABILITY

IMPROBABLE (RARE) | **LOW PROBABILITY (UNLIKELY)** | **MEDIUM PROBABILITY (POSSIBLE)** | **HIGH PROBABILITY (LIKELY)** | **DEFINITE (ALMOST CERTAIN)**

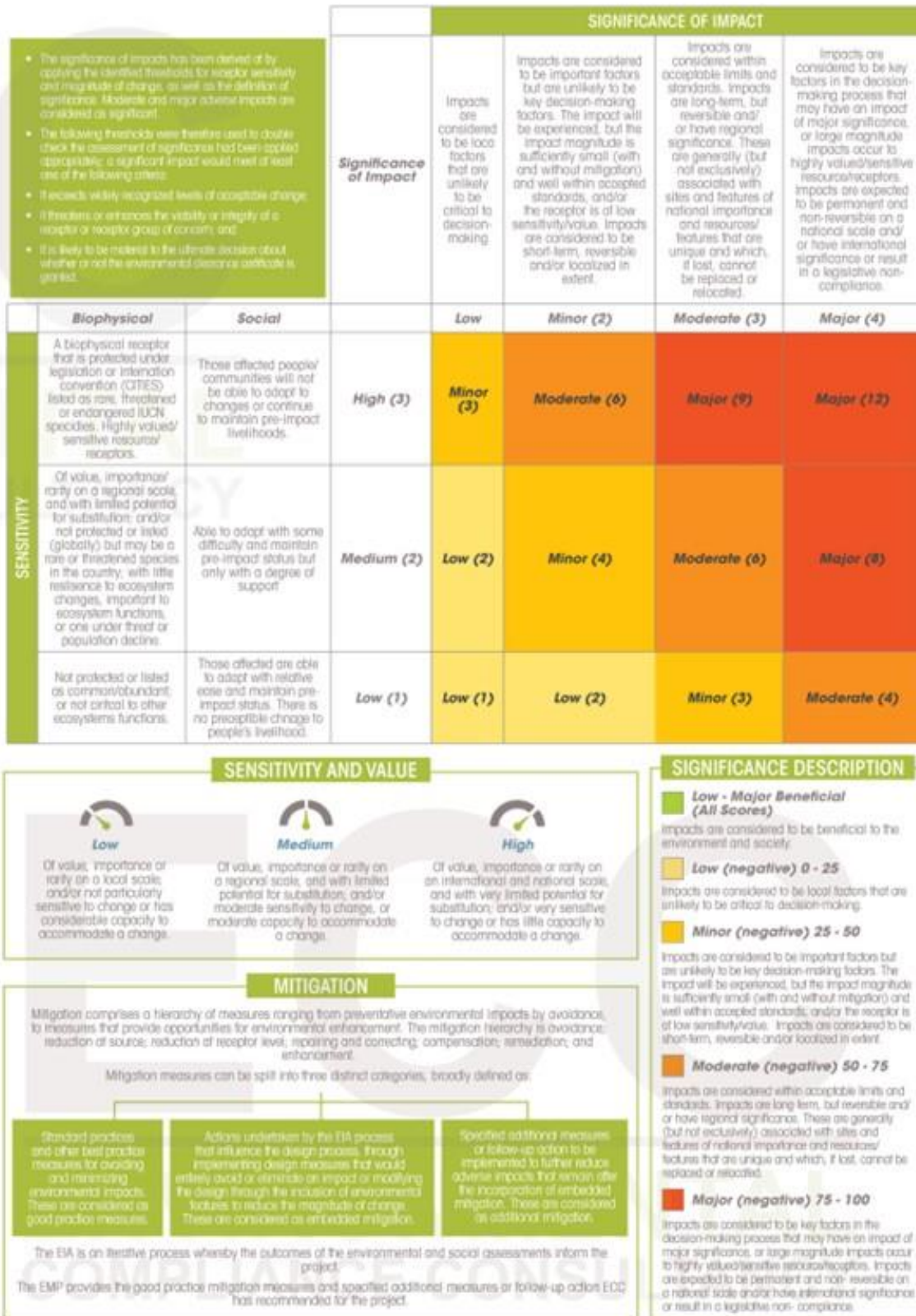
The event may occur in exceptional circumstances; yet, rarely occurs in the industry. The event could occur once every 100 years

The event has happened elsewhere yet, is unlikely to occur. The event could occur once every 10 years

The event could occur under some circumstances. The event could occur once every 5 years.

The event is expected to occur. The event could occur twice per year

The event will occur. The event could occur once per month



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Figure 16 - ECC ESIA methodology based on IFC standards

6.2 LIMITATIONS, UNCERTAINTIES AND ASSUMPTIONS

Table 8 below shows the potential limitations, uncertainties and assumptions associated with the ammonia terminal project.

Table 8 - Limitations, uncertainties and assumptions

LIMITATION/UNCERTAINTY	ASSUMPTION
The absence of Namibian legislation, policies and regulations to guide the green hydrogen/ammonia ventures.	The Proponent will be applying international best practices, standards and guidelines in all aspect of the project.
There are many unknowns related to the green hydrogen industry, as several green hydrogen/ammonia projects in Namibia are still in the development phase.	The Proponent ensures that all precautions will be taken. A full assessment will be undertaken to assess all potential impacts and alternatives will be considered and assessed throughout the process.

7 TERMS OF REFERENCE AND SCOPE OF WORK

7.1 TERMS OF REFERENCE FOR THE APPOINTED ENVIRONMENTAL ASSESSMENT PRACTITIONER (EAP)

The EAP has been appointed to submit an application for an environmental clearance certificate as per the Environmental Management Act, Act 7 of 2007, to prepare the Environmental and Social Impact Assessment (ESIA) and Environmental and Social Management Plan (EMP) for the proposed Project to reflect the current state of the biophysical and social environmental baselines, in compliance with the provisions of the Environmental Management Act 2007, associated regulations and where applicable international best practices.

7.2 TERMS OF REFERENCE FOR THE SCOPING REPORT

These are:

1. To provide the public and authorities with the background information document (BID) on the Project.
2. To consult with I&AP's and the relevant stakeholders and authorities about the proposed Project.
3. To conduct public and stakeholder meetings with relevant authorities by invitation and through notices placed in national public newspapers.
4. To register their interest in the Project and to record their concerns and issues.
5. To ensure the transparency of this process.
6. To allow adequate opportunity for comments to be received from I&APs and the authorities in this participation process.
7. To ensure that appropriate specialist studies are included in the scope of the impact assessment report to address the key concerns and issues raised during the consultation phase.
8. To ensure that the application and scoping report are completed and submitted to the Competent Authority in the prescribed manner.

A full environmental and social impact assessment (ESIA) will be completed with input from stakeholders during the public participation phase. The objectives of the ESIA:

- To address the issues and concerns raised by authorities, the public (both interested and affected parties) and the specialist consultants through the public consultation and scoping process.
- To identify and evaluate actual and potential impacts resulting from the Project at the Walvis Bay port that potentially may influence the receiving environment.
- To recommend management, mitigation and monitoring programmes to be implemented before and during construction, operations and decommissioning.

- To define an appropriate environmental and social management plan for the proposed construction of the green ammonia terminal.

The scope of the ESIA report that will be developed will comprise an updated impact assessment in two primary components based on both existing and new data from related specialist studies as noted below. The terms of reference (ToR) for the various studies are described within this chapter.

7.3 SOCIOECONOMIC ASSESSMENT

A socio-economic study will be conducted in-house to assess the impact of the project on the current socio-economic state of the locals and impacts on a regional and national scale.

Scope of work:

The assessment will look at the impact of the project associated with the potential increase in foreign investment that comes with exportation of green energy, potential emerging green career opportunities and increase in revenue.

The deliverables include:

- Receptor identification
- Baseline socio-economic assessment
- Mitigation recommendations
- Alternative options

7.4 VISUAL ASSESSMENT

The assessment will be conducted in-house and should include a study of the visual impact and its effects on the local tourist businesses and residential areas. The assessment will also take into consideration the landscape impacts.

Scope of work:

The following should be assessed during the visual study:

- Visual receptors
- Existing visual landscapes
- Potential impacts on the local residents and businesses
- Mitigation and recommendations

7.5 HEALTH AND SAFETY ASSESSMENT

The objective is to assess potential health and safety impacts associated with the construction and operation of the ammonia terminal project. The assessment will identify hazards, evaluate risks, and recommend measures to mitigate and manage health and safety concerns. This study will be conducted by ECC.

Scope of Work:

The assessment will include:

- Identification of potential health and safety hazards related to construction and operation activities.
- Evaluation of risks to workers, nearby communities, and the environment.
- Review of relevant health and safety regulations and guidelines.
- Assessment of emergency response plans and procedures.
- Consultation with stakeholders, including workers and local communities.
- Cumulative risk associated with neighbouring activities

7.6 CLIMATE CHANGE ASSESSMENT

A climate change assessment will be commissioned to assess the emission baseline of the biophysical environment and formulate recommendations for the management or mitigation of any potential impacts that the Project may contribute to climate change. Additionally, contribute to the potential benefits of the project to set climate change goals.

Scope of work:

- Study of the impacts the project may have on the receiving biophysical and socio-economic environment due to current and project climate scenarios.
- The impacts on international markets, national and international policies and carbon pricing policies
- The use of a standard scenario to assess the resilience of their strategies to climate change and make recommendations for improvement.
- Recommendation of a process for identifying, assessing and managing climate-related risks and integrating such risks into existing processes.
- Recommendations of ways in which the Project can best mitigate and adapt to climate-related risks.

7.7 AIR QUALITY ASSESSMENT

The assessment should include a study of the legal requirements pertaining to air quality applicable to international legal guidelines, limits and dust control regulations.

Scope of work:

To prepare a comprehensive air impact assessment report that will include:

- A review of available technical project information or any existing information related to air quality in the Project area.
- A review of the air quality legislative and regulatory context, including ambient air quality guidelines.
- A study of the baseline environment which includes determining the potential air quality receptors, existing sources of dust emissions at and around the site.

- Air quality impacts will be reported, and suitable mitigation measures and monitoring requirements will form part of the recommendations.
- Likely pollution pathways in the event of leak?

7.8 NOISE ASSESSMENT

The objective is to assess the potential noise impacts of the proposed project on surrounding sensitive receptors, including residents, businesses, and the tourism sector.

Scope of work:

To prepare a comprehensive noise impact assessment report that will include:

- Study of current baseline noise levels and impacts in the project area.
- Identification of affected receptors and their exposure levels.
- Assistance with monitoring site selection and baseline data analysis.
- Analysis of topography and emissions inventory.
- Attenuation modelling to predict noise propagation.
- Assessment of impacts using ECC's methodology.
- Provision of mitigation recommendations and alternatives.

7.9 TRAFFIC ASSESSMENT

A traffic assessment will be commissioned to assess the implications relevant to the project with regard to additional vehicles on the current D1984 and B2 road.

Scope of Work:

The increase in traffic volume from the proposed project also to be evaluated, to see whether the route would be able to manage an increase in traffic volume from the proposed Project and existing surrounding receptors. The deliverables include:

- Receptor identification
- Baseline traffic assessment
- Mitigation and control recommendations
- Alternative options

7.10 BIODIVERSITY ASSESSMENT

The objective of the biodiversity assessment will be to assess the bio-physical (vertebrate fauna & flora) issues relevant to the project and assess the significance of development and environmental impact that the project may have on the vertebrate fauna and flora at the proposed site including general comment. A visit to the proposed project area (applicable portions only) will be conducted to assess the development site. Sensitive areas and species will be identified within the Walvis Bay port area.

Scope of work:

The necessary verification fieldwork for the project site will include the following:

- Small mammal transects to determine small mammal diversity in the area;
- Larger mammal presence will be determined in the area;
- Reptile & amphibian transects (diurnal & nocturnal) to determine reptile & amphibian diversity in the area;
- Bird transects to determine avian diversity in the area; and
- Flora transects to determine plant diversity in the area.
- Surveying the proposed Project footprint considering alternative layouts
- Propose mitigation measures which will be included in the drafted reports.

7.11 HERITAGE ASSESSMENT

A heritage assessment will be required to comply with the Namibian national legislature, including the National Heritage Act, 2004 (Act No 27 of 2004) and the National Heritage Regulations (if applicable), Government Notice (GN) 3490 of 2005.

Additionally, the proposed assessment process will comply with the requirements of IFC PS 8.

Scope of work:

- Receptor identification, nearby infrastructure and users, residents, tourist hot spots, other receptors susceptible to impacts from the project raised in the study.
- Baseline assessment (including a minimum site visit and physical data collection if the consultant proposes additional monitoring/data collection locations
- The study must assess the impacts on project receptors,
- The assessment must provide suggested mitigation and control recommendations or inclusion in the EIA.
- Provide alternatives and options if the proposed project options are not viable to reduce impacts
- Applicable mitigation and management measures should be recommended subject to the significance of the impact,
- A site survey may need to be conducted if baseline data is not available.

7.12 GROUNDWATER AND SURFACE WATER ASSESSMENT

To assess the potential hydrology and hydrogeological issues relevant to the Project and assess the significance of the operational and environmental impacts that the Project may have on the hydrological and hydrogeological environments at and beyond the proposed site.

Scope of Work:

To prepare a detailed groundwater updated assessment report that will entail:

- A review of the existing information on the revised site layout and associated surface and groundwater documents, including a review of design recommendations for ground and surface water control measures.
- To prepare detailed surface water and groundwater impact assessment along with recommended mitigation (where required), to be incorporated into the ESMP.
- To include potential alternatives and recommendations in the final report that may reduce potential impacts on the environment and local communities.

8 CONCLUSION

This scoping report provides the baseline data, project description, impact assessment methodology and scope of studies on key impacts for investigation in the assessment phase of the ESIA and an outline of the proposed provisions for the EMP.

ECC will carry out an in-depth environmental and social impact assessment to identify potential significant impacts. These potential impacts will then be further analysed to establish mitigation measures that protect the environment and maximise social benefits. The mitigation will form the foundation of the detailed Project ESMP.

This scoping report will only be updated if required after the public review of the report. All written concerns and comments will be considered and where appropriate, the necessary changes to the ToR and additional aspects of the baseline will be incorporated accordingly.

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APPENDIX A – PRELIMINARY ENVIRONMENTAL MANAGEMENT PLAN

APPENDIX B – PUBLIC CONSULTATION DOCUMENT

APPENDIX C – EAPS CVS