Environmental Impact Assessment (EIA) Study for the Proposed Construction of a Telecommunication Tower at Block E (Community Hall Yard) Rehoboth, Hardap Region.

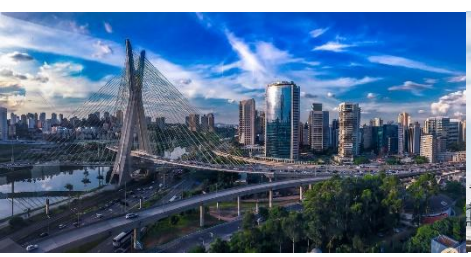
ENVIRONMENTAL SCOPING REPORT

DATE: OCT 2025

REFERENCE NUMBER: 250915006428

D&P
ENGINEERS AND ENVIRONMENTAL CONSULTANTS

PowerCom (PTY) LTD



Proposed Construction of a Telecommunication Tower at Block E (Community Hall Yard) Rehoboth, Hardap Region - Namibia.

Environmental Scoping Report Prepared for

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DEFINITIONS

TERMS	DEFINITION
BID	Background Information Document
EAP	Environmental Assessment Practitioners
ECC	Environmental Clearance Certificate
ECO	Environmental Control Officer
EIA (R)	Environmental Impact Assessment (Report)
ESIA	Environmental and Social Impact Assessment
EMP	Environmental Management Plan
EMPr	Environmental Management Plan Report
GHG	Greenhouse Gasses
ISO	International Organization for Standardization
I&APs	Interested and Affected Parties
MET: DEA	Ministry of Environment and Tourism's Directorate of Environmental Affairs
NHC	National Heritage Council
NEMA	Namibia Environmental Management Act
ToR	Terms of Reference
UNFCCC	United Nations Framework Convention on Climate Change

i. Purpose of This Environmental Impact Assessment Report

This Environmental Scoping Report (ESR) follows the Scope of Work delineated by POWERCOM Pty Ltd. Existing information and input from commenting authorities, Interested and Affected Parties (I&APs) was used to identify and evaluate potential environmental impacts (both social and biophysical) associated with the proposed project.

Environmental flaws associated with the proposed project were identified through the ESR. A conscious decision was made based on the recommendations and guidelines of the Directorate of Environmental Affairs EIA guidelines to assess both significant and less significant environmental impacts proposed by the development. The developed Environmental Management Plan (EMP) for this proposed activity will have to be effectively implemented by the client, to ensure that adverse environmental impacts are avoided or brought to acceptable limits.

A detailed assessment of the anticipated impacts was undertaken by the Environmental Assessment Practitioner (EAP) to highlight any areas of concern regarding the proposed project during its construction, operation and decommissioning phase. In addition, an independent sensitivity mapping analysis was also undertaken to highlight the proposed development site's significant environmental aspects while noting the site's suitable and unsuitable (no-go) development footprint areas. This action guided the final footprint of the telecommunication tower.

This report will also be used to motivate and define the previously identified project alternatives (i.e. site, technology, and layout) based on the findings of the environmental baseline study and the suitability of the site to the type of development. This EIAR has been compiled in accordance with the regulatory requirements stipulated in the EIA Regulations (2012), promulgated in terms of the Namibian environmental legislation (Environmental Management Act (No. 7 of 2007))

The ESR aims to:

- Provide an overall assessment of the social, physical, and biophysical environments of the area affected by the proposed establishment of the tower;
- Undertake a detailed environmental assessment, in terms of environmental criteria and impacts (direct, indirect, and cumulative), and recommend a preferred location for the proposed telecommunication tower (based on environmental sensitivity);
- Identify and recommend appropriate mitigation measures for potentially significant environmental impacts; and
- Undertake a fully inclusive Public Participation Process (PPP)
- GIS sensitivity mapping was conducted to identify potential impacts, propose mitigation and inform the sensitivity analysis.

ii. Assumptions And Limitations

The following assumptions and limitations underpin the approach to this EIA study:

- The information received from the stakeholders, desktop surveys, and baseline assessments are current and valid at the time of the study;
- A precautionary approach was adopted in instances where baseline information was insufficient or unavailable;
- Mandatory timeframes will apply to the review and adjudication of the reports by the competent authority and other government departments; and
- No land claims have been registered for the proposed site at the onset and registration of the study.

NB: The EAP does not accept any responsibility in the event that additional information comes to light at a later stage of the process. All data from unpublished research utilised for the purposed of this project is valid and accurate. The scope of this investigation is limited to assessing the potential biophysical, social and cultural impacts associated with the proposed project.

1. CHAPTER ONE: INTRODUCTION

1.1. Project background

Over the years Namibia has been witnessing a swift growth in mobile communication services, driving increased local demand for the expansion of telecommunications infrastructure. PowerCom (PTY) LTD, hereafter referred to as the proponent, has identified various areas in Namibia requiring enhanced communication solutions due to population growth and increased economic activities. To address this need for improved telecommunication connectivity, PowerCom has been commissioned by its sister company, Telecom Namibia, to establish telecommunication towers across multiple locations nationwide, including one at Block E (Community Hall Yard) Rehoboth. This initiative aims to enhance connectivity, alleviate network congestion, and promote ICT development in rural and peri-urban areas. decongest connectivity and promote ICT in rural and peri-urban environments.

Telecommunication tower and related infrastructure developments are among listed activities that may not be undertaken without an Environmental Clearance Certificate (ECC) under the Environmental Management Act (EMA) (2007) and its 2012 Environmental Impact Assessment (EIA) Regulations. The relevant listed activities as per EIA regulations are:

10.1 (g) The construction of masts of any material or type and of any height, including those used for telecommunication, broadcasting, and radio transmission.

As the construction of telecommunication towers requires prior consent from interested and affected parties, as well as obtaining an Environmental Clearance Certificate, to fulfil these requirements, the Proponent has appointed D&P Engineers and Environmental Consultants cc, an independent team of Environmental Consultants to conduct the required Environmental Scoping Assessment (ESA) and compile this ESA Report and its draft Environmental Management Plan (EMP) in compliance with the Environmental Management Act No. 7 of 2007 and the Namibian Environmental Impact Assessment Regulations of 2012 for the telecommunication infrastructure development.

1.2. Project Location

The proposed site is located in Rehoboth town within the Block E (Community Hall Yard), Hardap Region (23°19'40.81"S 17°05'53.38"E) as shown in **Figure 1**, satellite image.

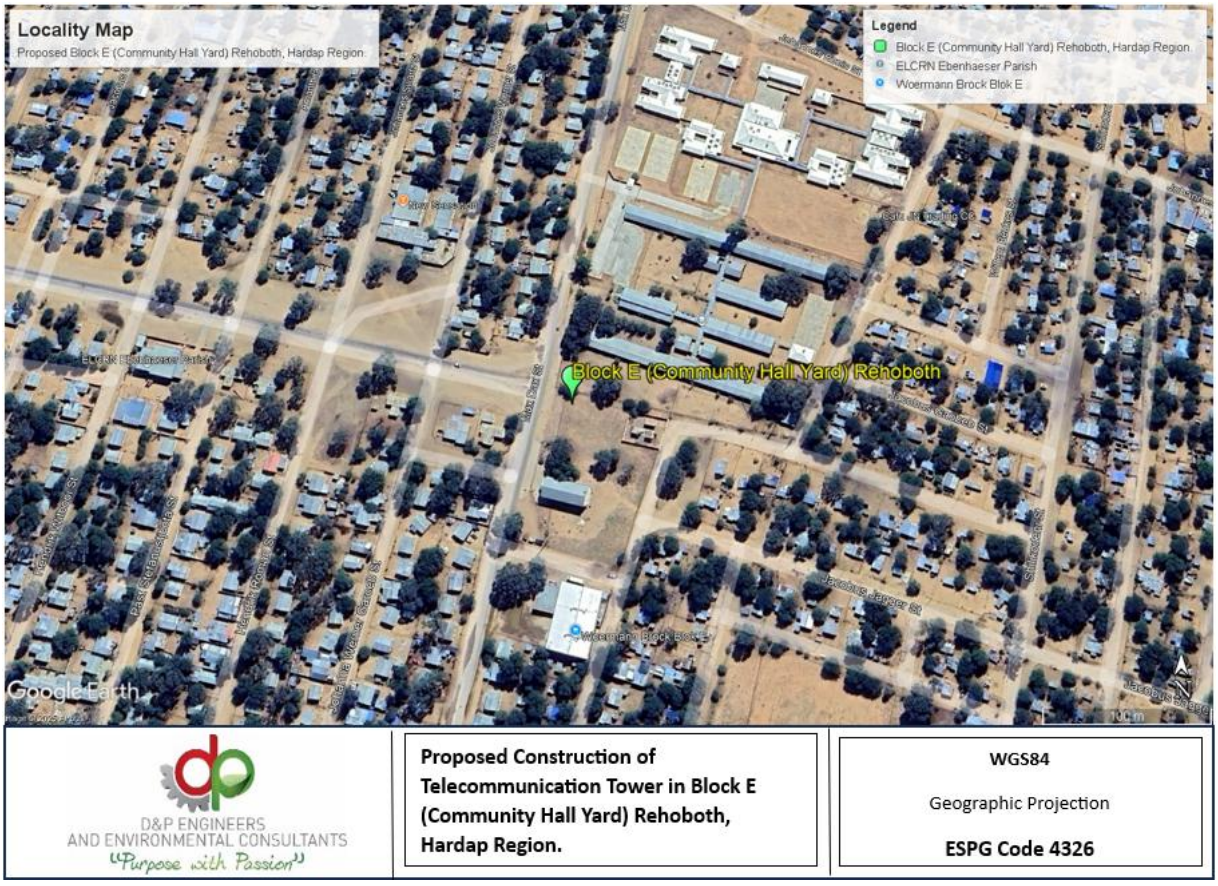

Figure 1: Satellite image of the Proposed telecommunication Tower, Block E (Community Hall Yard) Rehoboth, Hardap Region.

1.3. Development and Site Specification

POWERCOM (Pty) Ltd, a subsidiary of TELECOM Namibia, is spearheading a nationwide initiative to construct telecommunication towers. This effort aims to enhance internet and voice connectivity, expand the company's footprint and asset base, while providing ready-to-use infrastructure for telecommunication service providers. By targeting underserved areas with weak or no network coverage, POWERCOM plans to develop several telecommunication towers across the country, including a proposed site in Block E (Community Hall Yard) Rehoboth, in Hardap Region. Refer to **Appendix A** for locality Map and Layout of the towers).

The telecommunication tower development in Block E (Community Hall Yard) Rehoboth will include the following:

- Construction of a 30m lattice tower with a footprint size of a 80m2 area including network support structures;
- The site is to accommodate TN Mobile service and other service providers.
- The structure will be fenced to limit public access to it, and it will be electrified to prevent vandalism.
- Access to the area will be strictly controlled through a locked gate as illustrated in the image below.

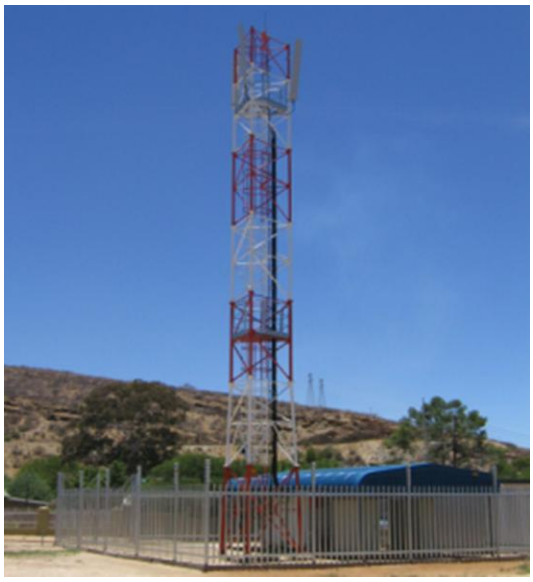

Figure 2: Typical lattice telecommunication tower structure (for visual purposes only)

1.4. Proposed Site Ownership

The site can be easily accessed from the main as it lies about 500m from the B1 road. The selection of this site was driven by anticipated network shortfalls affecting mobile users in this area and its surrounding. Furthermore, several selections criteria's were used to identify the most suitable location for this tower in this settlement. As the site falls under the Rehoboth Town Council Authority, prior engagements have been done with the local authority and the Town council members to request for leasehold agreement, which was later granted to the proponent to use the land within the Block E (Community Hall Yard) for the tower construction. Approval for the tower was formally granted to PowerCom (PTY) Ltd in a letter dated 14 November 2024 **(Appendix C).** Location details are provided in **Table 1** below.

Table 1: Details of the proposed tower's localities

Site Name	Block E (Community Hall Yard) Rehoboth
GPS Coordinates	(23°19'40.81"S 17°05'53.38"E)
Local Authority	Rehoboth Town Council
Regional Administration	Hardap Region

1.5. Terms of Reference (TOR) and Scope of Work

This Environmental Scoping Assessment (ESA) was conducted in accordance with the Environmental Management Act (EMA) (No. 7 of 2007) and its 2012 Environmental Impact Assessment (EIA) Regulations. Guided by the project's Terms of Reference, the scope of work included:

- Assessing the suitability of the proposed site for tower construction and identifying alternative sites if necessary.
- Conducting the required Environmental Scoping Assessment (ESA).

- Consulting all relevant interested and affected parties (I&APs).
- Preparing an ESA report and a draft Environmental Management Plan (EMP).
- Securing an Environmental Clearance Certificate for the proposed tower.

The primary objectives of the ESA are to:

- Identify, analyse, and assess the biophysical and socio-economic impacts of the proposed activity.
- Develop management action plans, detailed in the draft EMP, to help the Proponent and/or their contractors minimize negative impacts where avoidance is not possible and enhance positive outcomes.

1.6. The need for the Proposed Project

The ongoing growth of mobile communication services in Namibia has led to increasing demand and expansion of the communications network. PowerCom has identified the need for a new structure within the Hardap Region, Block E (Community Hall Yard) Rehoboth to address this demand. The planned telecommunication tower will enhance network capacity, alleviate congestion, and improve coverage in the area. This development aims to ensure better service quality for telecommunication users in the region. Further criteria were also considered to validate the desirability and placement of this telecommunication tower, these included:

- Network voids/gaps: the tower site is strategically placed to cater the gaps in the network coverage
- Coverage and proximity to nearby tower: tower is said to cover a large radius 10km providing sufficient connectivity to residents of Rehoboth Block E (Community Hall Yard) and nearby areas
- Land suitability: The site is easily accessible local roads, well placed to serve the local school, church, clinic, other local businesses and residential area, the site is also well located close to an electrical connection (grid) to power the tower components.
- Etc.

Based on the above, the preferred site was selected. Consequently, no additional site location alternatives were considered as part of the Environmental Impact Assessment (EIA) process.

1.7. Appointed environmental Assessment Practitioner

To comply with the requirements of the Environmental Management Act (EMA) and its 2012 Environmental Impact Assessment (EIA) Regulations, the Proponent engaged an independent team of Environmental Consultants from D&P Engineers and Environmental Consultants cc (hereinafter referred to as, the Consultant, or Environmental Assessment Practitioner (EAP) to undertake the required ESA process on their behalf. The findings of the ESA process are documented in this Report. The ESA Report, along with the Draft Environmental Management Plan (EMP) and supporting documents, will be submitted as part of an application for an Environmental Clearance Certificate (ECC) to the Environmental Commissioner at the Department of Environmental Affairs and Forestry (DEAF).

The ESA project is led by Mr. Adiel T. Mudzanapabwe, an Environmental Assessment Practitioner (EAP). The ESA process, this Report, and the Draft EMP were compiled by Mr. Adiel Mudzanapabwe and Mr. Talent Nyungu. The EAP's curriculum vitaes are included in **Appendix E.**

2. CHAPTER TWO: PROJECT DESCRIPTION AND PROPOSED ACTIVITIES

2.1. Planning and Design Phase

All contractors involved in the construction of telecommunication towers in Namibia are required to consider specific planning and design aspects. In this regard, the proponent was guided by the Communications Act No. 8 of 2009, ensuring that all necessary licenses and regulatory requirements were obtained. The proponent secured all relevant permits and approvals from competent authorities such as the Communications Regulatory Authority of Namibia (CRAN), the Ministry of Environment, Forestry and Tourism (MEFT), and the Ministry of Information and Communication Technology (MICT). This process was further supported by the participation and consent of Interested and Affected Parties (I&APs) through an Environmental Impact Assessment (EIA) process.

A comprehensive EIA study was undertaken in accordance with the Environmental Management Act No. 7 of 2007 and its regulations to assess and mitigate potential impacts on biodiversity, soil, water, and air quality. The assessment also evaluated various alternatives to reduce the project's environmental footprint and ensure that adverse impacts are minimized through the implementation of an Environmental Management Plan (EMP).

Site selection and zoning were critical considerations during the planning stage. To ensure the safety and suitability of the tower location, the proponent evaluated land-use and zoning regulations and sought prior consent from local authorities regarding land utilization. The consultation process also involved I&APs, including local communities, government institutions, and other stakeholders, to address possible concerns related to health, aesthetics, property value, and land tenure or access rights.

From a technical perspective, the proponent assessed the key requirements necessary for optimal network coverage and capacity such as tower height, antenna type, and power supply. Although co-location of infrastructure was considered to limit the number of towers, reduce costs, and mitigate visual and environmental impacts, the lack of existing facilities necessitated the development of a tower. The proposed structure will occupy a footprint of approximately 80m², accommodating the tower and its associated components.

2.2. Construction Phase

The construction of the tower is anticipated to take approximately one month, with minimal earthworks required for site preparation. The area will be cleared, leveled, and marked to establish the tower's foundation. During this phase, a security fence will be installed around the construction site to restrict access to authorized personnel only and to safeguard the tower and its related components from vandalism. The foundation will be built using reinforced concrete to ensure structural strength and stability, while proper grounding (earthing) will be incorporated to protect the structure from lightning strikes.

The tower assembly will take place on-site, primarily through manual labor. All technical activities will be executed by a qualified contractor, operating mainly on weekdays between 08h00 and 17h00. The workforce size will depend on the contractor's available human resources and project requirements. Whenever possible, local contractors from the Hardap Region will be prioritized, and unskilled labor opportunities will be reserved for residents from Rehoboth Town community. Workers will not be accommodated on-site; instead, off-site lodging

will be arranged where necessary. For safety compliance, the appointed contractor will be responsible for ensuring that all personnel are equipped with appropriate Personal Protective Equipment (PPE) throughout the construction process.

2.3. Project input and Resource Requirements

2.3.1 Project Personnel and Accommodation

The exact number of workers required for the tower's construction will be determined by the appointed contractor after the Environmental Clearance Certificate (ECC) is issued. The workforce will include skilled, semi-skilled, and unskilled personnel as needed. Priority for unskilled labour will be given to local residents, preferably those living within the vicinity of the project.

2.3.2 Waste Management

Construction waste, such as packaging, scrap metal, and concrete debris, will be properly managed and disposed of according to environmental regulations. All hazardous materials, if any, will be handled with special care. The proponent will enforce the availability of portable toilets for the construction team, during the duration of the construction phase. Chemical toilets with sealed septic tanks will be used as ablution facilities and the sewage waste handled according to the manufacturer's instructions of the facility provided.

2.3.3 Water Supply

A minimal amount of water will be required during construction, primarily for drinking and for use in the in-situ concrete mixture. The water will mainly be utilized during the foundation casting phase. The water will be sourced from the town water supply points (borehole and/or other water infrastructures) subjected to an agreement with the local communities and other relevant local water management committee bodies.

2.3.4 Power Supply

No electricity is required during the construction of the tower. However, it will be required during the operational maintenance phase of the tower. This tower is strategically placed close to a local transformer and to which it will be connected to ensure power will be available for operational maintenance of the tower.

2.3.5 Health and Safety

All project and construction personnel will be provided with adequate and appropriate Personal Protective Equipment (PPE) while working on site. For safety purposes a first aid kit will be readily available at the site for emergency purposes. Basic fire-fighting equipment such as fire extinguisher will be available on site and in all construction vehicles.

2.3.6 Site Access (Roads)

The site is in Rehoboth Block E (Community Hall Yard). The site can be accessed via the towns tared road which is about 2.5km to reach the site from the main B1 road.

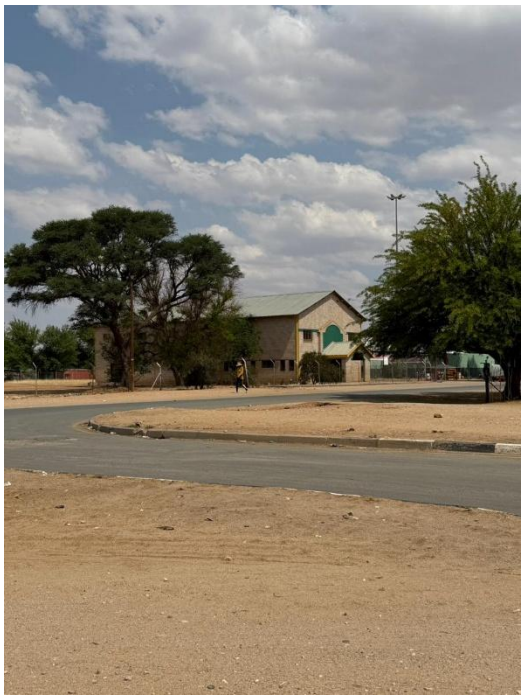

Figure 3: Local access road leading to Block E (Community Hall Yard) telecommunication tower site, Hardap Region

2.3.7 Fencing

For safety and security reasons, the tower site will be fenced off. This will also be done to ensure that access to the tower is limited to authorized personnel (such as maintenance team) only and to prevent vandalism of the tower and their associated accessories/structures.

2.4 Site rehabilitation (post construction) and decommission phase

Upon completion of the construction phase, the associated works will be ceased, and site cleaned up in preparation for the next phase (operations). The Proponent will need to properly decommission the construction works and rehabilitate disturbed site. The aim is to ensure that the project related disturbed site areas are left close to their pre-work state as much as possible.

The activities to be carried out to clean up and rehabilitate the site post-construction are as Follows:

- Dismantling and removal of all temporary infrastructures and structures (erected or set up to support construction) that will no longer be required for the operational and maintenance phases. These will be transported to designated storage facilities offsite.
- Removal of all construction related vehicles, machinery, and equipment from site to designated parking and storage site off site, respectively.
- Carrying away the waste storage containers and disposal of waste to the designated local approved waste management site in Windhoek.
- If any, closure of all onsite access roads that may have been created for the construction phase and no longer required for operational phase.

- Levelling of all stockpiled topsoil and where possible, backfilling of all construction excavated pits and trenches, respectively.

(Detailed information is captured in the EMP)

Decommissioning of the network tower is not anticipated given the demand of mobile communication and other associated services. In the case of decommissioning recommendations will be provided in the impact assessment chapter and EMP.

2.5 Operational and Maintenance Phase

This is the phase during which the tower and its associated infrastructure will be operational and providing telecommunication signal to the residents of Rehoboth Block E (Community Hall Yard) and other nearby settlements. Maintenance of the tower is to be carried out by the Proponent's Maintenance Department, as and when required. No onsite accommodation will be required during this phase, as the maintenance works are not expected to last for more than a day. If maintenance works are lasting more than one day, accommodation arrangements are to be made by the Proponent for their maintenance team. The Proponent is to ensure that all employees carrying out maintenance works on site are provided with appropriate Personal Protective Equipment (PPE).

3. CHAPTER THREE: TOWER INFRASTRUCTURE ALTERNATIVES

The EAP took time to assess the project alternatives for this site. Both technical, economical, and environmental factors including the rationale for choosing the preferred tower were considered. For the site a Guyed Lattice or Lattice tower will be chosen considering both technical, economic and environmental factors. While there may be several other types of telecommunication towers design and forms, either one of the towers will be selected to make sure network connectivity in the Rehoboth Block E (Community Hall Yard) area and its surroundings is good and does not overshoot.

Below were alternatives that were considered for the proposed project in Rehoboth Block E (Community Hall Yard):

3.1 The “No-go Alternative”

The “No-go” alternative is the option of not proceeding with the activity, which typically implies a continuation of the status quo. In this case, this would mean, the status quo of the proposed site remains unchanged with poor to no network/communication signal. Should the proposed project be discontinued, the poor network coverage in Rehoboth will continue and there will be no improvement in local socio-economic development, in terms of communications services in this area.

Taking this into account, and the anticipated benefits that the proposed project will have on the local communities, the no-go option is not a preferred option.

3.2 Tower Location

Prior to the EIA process consultations were made with the Rehoboth Town Council local authority and PowerCom (PTY) Ltd Namibia to engage them on suitable spots and areas for the network placement. Before this, a potential site was already identified by PowerCom (PTY) Ltd Namibia by using radio planning tools which PowerCom then applied for to construct this tower. The site was selected looking at the network coverage and

how the tower would address any network coverage issues in this part of Rehoboth. The town council expressed their approval of the tower through a consent letter directed to PowerCom (PTY) Ltd Namibia **(See Appendix C).** During this EA process, the local community showed they where happy with initiative of erecting the tower.

3.3 Tower sharing

As per the Communications Act No. 8 of 2009 service providers are required to share existing telecommunication infrastructures before new ones can be constructed. This is so that minimal damage to the environment is done, and existing infrastructures are used to their full potential, thus minimizing costs. In Rehoboth there could be possible interferences caused by buildings because of new developments, weakening the network in the town. Therefore, a need for a telecommunication infrastructure in the proposed area is a need. It is for this reason that the proposed tower (new structure) needs to be erected (constructed) so that they can be potentially used (or shared) in future with similar services providers, thus promoting infrastructure sharing as per the Communications Act.

Taking the above factors into consideration, the preceding alternative analysis and options, the project will go ahead and will ensure maximum environmental and safety performance systems are enforced during all phases of the project.

4. CHAPTER FOUR: POLICY, LEGAL AND ADMINISTRATIVE FRAMEWORK

4.1. Overview

An important part of the EIA is identifying and reviewing the administrative, policy, and legislative frameworks concerning the proposed activity, to inform the proponent about the requirements to be fulfilled in undertaking the proposed project. This section looks at the legislative framework within which the proposed development will conform; the focus is on compliance with the legislation during the planning, construction, and operational phases. All relevant legislations, policies, and international statutes applying to the project are highlighted in the table below as specified in the Environmental Management Act, 2007 (Act No.7 of 2007) and the regulations for Environmental Impact Assessment as set out in the Schedule of Government Notice No. 30 (2012).

Table 2: Policy, Legal and Administrative Framework

LEGISLATION/POLICY/GUIDING DOCUMENT	RELEVANT PROVISION	PROJECT IMPLICATION
The Constitution of the Republic of Namibia (1990)	The articles 91(c) and 95(i) commits the state to actively promote and sustain the environmental welfare of the nation by formulating and institutionalizing policies to accomplish the sustainable objectives which include: • Guarding against overutilization of biological natural resources, • Limiting over-exploitation of non-renewable resources, • Ensuring ecosystem functionality, • Maintain biological diversity.	Through the implementation of the environmental management plan, the proposed development will be conformant to the constitution in terms of environmental management and sustainability, by bringing development in an environmentally sensitive way.
Vision 2030 and National Development Plans	Namibia's overall Development ambitions are articulated in the Nations Vision 2030. At the operational level, five-yearly national development plans (NDP's) are prepared in extensive consultations led by the National Planning Commission in the Office of the President. Currently the Government has so far launched a 4th NDP which pursues three overarching goals for the Namibian nation: high and sustained economic growth; increased income equality; and employment creation.	The proposed project is an important element in the propelling and connectivity in the country.
Environmental Assessment Policy of Namibia 1994	The Environmental Assessment Policy of Namibia requires that all projects, policies, Programmes, and plans that have detrimental effect on the environment must	The construction and operation of the tower will only commence after being awarded an environmental clearance certificate, thus by abiding to the requirements of the Environmental Assessment Policy of Namibia. The

	be accompanied by an EIA. The policy provides a definition to the term "Environment" broadly interpreted to include biophysical, social, economic, cultural, historical and political components and provides reference to the inclusion of alternatives in all projects, policies, programmes and plans.	EIA and EMP will cater for the sustainable management of biophysical environment.
Environmental Management Act No. 07 of 2007	The Act aims at • Promoting the sustainable management of the environment and the use of natural resources by establishing principles for decision-making on matters affecting the environment; • To provide for a process of assessment and control of projects which may have significant effects on the environment; • The Act gives legislative effect to the Environmental Impact Assessment Policy. Moreover, the act also provides procedure for adequate public participation during the environmental assessment process.	This document is compiled in a nature that project implementation is in line with the objectives of the EMA. EIA guiding procedures developed by MEFT were also used in the course of this project.
Electricity Act 4 of 2007	• Requires that any generation and or distribution complies with laws relating to health, safety and environmental standards (s 18(4)(b) • In the event that exemption from acquiring a license is granted, the Minister may impose conditions relating to public health safety or the protection of the environment.	Obliges Powercom to comply with all relevant provisions of the EMA and its regulations when installing electrical connections to the tower.
The Atomic Energy and Radiation Protection Act, Act 5 of 2005:	Provides for the adequate protection of the environment and of people against the harmful effects of radiation by controlling and regulating the production, processing, handling, use, holding, storage, transport and disposal of radiation sources and radioactive materials, and controlling and regulating prescribed non-ionising radiation sources according to the standards set out by the ICNIRP.	To determine the "safe distance" around the site. Installation of the network transmitter will be done in accordance with the safety protocols required for non-ionizing radiation protection.
Hazardous Substances Ordinance 14 of 1974 Regulations Made In Terms Of Hazardous Substances	To provide for the control of substances which may cause injury or ill-health to or death of human beings by reason of their toxic, corrosive, irritant, strongly sensitizing or flammable nature or the generation of	Powercom will have to conform to this Act and its regulations through application for relevant licenses with the relevant bodies highlighted thereto.

Ordinance 14 of 1974 sections 3 and 27	pressure thereby in certain circumstances; to provide for the division of such substances into groups in relation to the degree of danger; to provide for the prohibition and control of the importation, manufacture, sale, use, operation, application, modification, disposal or dumping of such substances; and to provide for matters connected therewith.	
Civil Aviation Act No. 74 of 1962	Gives effect to certain International Aviation Conventions and makes provision for the control, regulation, and encouragement of flying within the Republic of Namibia and for other matters incidental thereto.	Provides the regulations for setting up cellular as well as other masts structures in Namibia.
Convention on International Civil Aviation, Annex 14	Annex 14 to the Convention on International Civil Aviation. Chapter 4: Obstacle restrictions and removal Chapter 6: Visual aids and donating of obstacles	The proposed new structures may be obstacles to some aerodromes in Namibia. Those that are close to existing aerodromes need to be assessed in accordance with the document. Visual aids to the new structures to make them visible to aircraft need to be applied in accordance with this Convention.
"Guidelines for Limiting Exposure to Time-Varying Electric, Magnetic, and Electromagnetic Fields (up to 300GHz)" (April 1998 developed by the International Commission on Non-Ionizing Radiation Protection (ICNIRP))	Provides international standards and guidelines for limiting the adverse effects of non-ionising radiation on human health and well-being, and, where appropriate, provides scientifically based advice on non-ionising radiation protection including the provision of guidelines on limiting exposure.	Cell phone towers and other antenna installations are usually located on rooftops, towers, and utility poles. Cell phone towers operate at a higher power than cell phones but the radiofrequency EMF they emit is much further away from your body. This means your exposure from such antennas is usually much lower than the exposure level from using a cell phone.
Soil Conservation Act 76 of 1969	The objectives of this Act are to: • Make provisions for the combating and prevention of soil erosion, • Promote the conservation, protection and improvement of the soil, vegetation, sources and resources of the Republic.	The project will have a rather localized impact on soils and the soil through clearance for the tower platform. Soil protection measures will be employed and preservation of trees as much as possible.
Protected Areas and Wildlife Management Bill	This bill, when it comes into force, will replace the Nature Conservation Ordinance 4 of 1975. The bill recognizes that biological	Environmental recommendations and considerations on this project have ensured that the proposed activities will not fall within the boundaries of any protected area and

	diversity must be maintained, and where necessary, rehabilitated and that essential ecological processes and life support systems be maintained. It protects all indigenous species and control the exploitation of all plants and wildlife.	that the project will not affect heavily endangered vegetation and animals on its site.
Forest Act, 2001 (Act No. 12 of 2001)	The Act gives provision for the protection of various plant species through the Ministry of Agriculture, Water and Forestry (MAWF), Directorate of Forestry).	The site has a few palm trees which will not be removed to pave way for development.
National Rangeland Policy and Strategy, 2012	The policy aims at enabling resource users (farmers and managers) to manage their rangeland resources in a sustainable manner and sustainable in that they are economically viable, socially acceptable, environmentally friendly and politically conducive.	This proposed project will ensure that the local community benefits both economically and socially from the project, this in line with the recently declared Harambee Prosperity Plan and NDP 4&5.
National Biodiversity Strategy and Action Plan (NBSAP2)	The action plan was operationalised in a bid to make aware the critical importance of biodiversity conservation in Namibia putting together management of matters to do with ecosystems protection, biosafety, biosystematics protection on both terrestrial and aquatic systems.	The project proponent has been advised by DPEE and recognises the need for ecosystem protection to manage the changing climatic environment. This project is one of the drivers to reduce the rate of global environmental change given its contribution, to decreased use of burning fossil fuels for energy generation.
Wetland Policy, 2004	The policy provides a platform for the conservation and wise use of wetlands, thus promoting inter-generational equity regarding wetland resource utilization. Furthermore, it facilitates the Nation's efforts to meet its commitments as a signatory to the International Convention on Wetlands (Ramsar) and other Multinational Environmental Agreements (MEA's).	In compliance to this Policy, the development will ensure a standard environmental planning such that it does not affect any wetlands within its locale through recognition of wetlands to promote the conservation and wise utilization of wetlands resources. There is an existing water channel within 500m radius of the proposed project site.
Water Resources Management Act, 2013 (Act No. 11 of 2013)	This Act provides for the management, protection, development, use and conservation of water resources. This also forms the regulation and monitoring of water resources.	The proposed development will get water from the existing water infrastructure.
National Heritage Act 27 of 2004	Heritage resources to be conserved in development.	During the project implementation as soon as objects of cultural and heritage interests are observed such as graves, artefacts and any other object believed to be order than 50 years, all measures will be taken protect these objects until the National Heritage Council of Namibia

		have been informed, and approval to proceed with the operations granted accordingly by the Council.
National Monuments Act of Namibia (No. 28 of 1969) as amended until 1979	"No person shall destroy, damage, excavate, alter, remove from its original site or export from Namibia: (a) any meteorite or fossil; or (b) any drawing or painting on stone or a petroglyph known or commonly believed to have been executed by any people who inhabited or visited Namibia before the year 1900 AD; or (c) any implement, ornament or structure known or commonly believed to have been used as a mace, used or erected by people referred to in paragraph (b); or (d) the anthropological or archaeological contents of graves, caves, rock shelters, middens, shell mounds or other sites used by such people; or (e) any other archaeological or palaeontological finds, material or object; except under the authority of and in accordance with a permit issued under this section.	The proposed site of development is not within any known monument site both movable or immovable as specified in the Act, however in such an instance that any material or sites or archeologic importance are identified, it will be the responsibility of the developer to take the required route and notify the relevant commission.
Pollution Control and Waste Management Bill	This bill has not come into force. Amongst others, the bill aims to "prevent and regulate the discharge of pollutants to the air, water and land" Of particular reference to the Project is: Section 21 "(1) Subject to sub-section (4) and section 22, no person shall cause or permit the discharge of pollutants or waste into any water or watercourse." Section 55 "(1) No person may produce, collect, transport, sort, recover, treat, store, dispose of or otherwise manage waste in a manner that results in or creates a significant risk of harm to human health or the environment."	To control air, water and land pollution as agitated by the Act the project proponent will ensure that the development will prevent pollution in all forms during construction and operation phases.

Regional Council Act (NO. 22 OF 1992)	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. The main objective of this Act is to initiate, supervise, manage, and evaluate development.	The relevant Regional Councils are considered to be Interested & Affected Parties and must be consulted during the Environmental Assessment (EA) process. The project site fall under the Rehoboth Town Council; therefore, they should be consulted.
Public Health Act (No. 36 of 1919)	Section 119 states that "no person shall cause a nuisance or shall suffer to exist on any land or premises owned or occupied by him or of which he is in charge any nuisance or other condition liable to be injurious or dangerous to health."	The Proponent and all its employees or contractors should ensure compliance with the provisions of these legal instruments.
Health and Safety Regulations GN 156/1997 (GG 1617)	Details various requirements regarding health and safety of labourers.	
Public and Environmental Health Act No. 1 of 2015	The Act serves to protect the public from nuisance and states that no person shall cause a nuisance or shall suffer to exist on any land or premises owned or occupied by him or of which he is in	The Proponent and their contractors should ensure that the project infrastructure, vehicles, equipment, and machinery are designed and operated in a way that is safe, or not injurious or dangerous to public health

	charge any nuisance or other condition liable to be injurious or dangerous to health.	and that the noise which could be considered a nuisance remain at acceptable levels. The Proponent should ensure that the public as well as the environmental health is preserved and remain uncompromised.
Communications Act, 2009 (Act No. 8 of 2009)	• (10) The Authority may impose specific obligations and requirements on a licensee regarding to masts, towers or other facilities including requirements relating to the • environmental or aesthetic impact of such facilities;	As a pre requisite, telecommunication towers would require environmental clearance certificates and, in this respect, Powercom authorised this EIA to obtain such.
Communication Bill 2009	• Provide for the regulation of telecommunication activities. The bill provides licencing and enforcement of conditions, and the approval or equipment and technical standards to ensure public health and safety.	As per relevant spectrum, network equipment should be as per licenses.
Convention on Biological Diversity (CBD)	• Namibia is a signatory of the Convention on Biological Diversity and thus is obliged to conserve its biodiversity.	The project will preserve tree species on as part of their plans for greed and sustainable development.
United Nations Convection to combat Desertification	Namibia is bound to prevent excessive land degradation that may threaten livelihoods.	It will be the responsibility of the proponent to conserve vegetation on and around the area, to avoid encroachment of the desert environs in the area.
Local Authorities Act No. 23 of 1992	To provide for the determination, for purposes of local government, of local authority councils; the establishment of such local authority councils; and to define the powers, duties and functions of local authority councils; and to provide for incidental matters.	The Windhoek Municipality is the Local Authority responsible for the project site. Therefore, the Municipality should ensure that the network tower establishment activities are in compliance with the Act and its Regulations, as relevant to the proposed project
Road Traffic and Transport Act, No. 22 of 1999	The Act provides for the establishment of the Transportation Commission of Namibia; for the control of traffic on public roads,	Mitigation measures should be provided for since the project activities will make use of the public roads.

	the licensing of drivers, the registration and licensing of vehicles, the control and regulation of road transport across Namibia's borders; and for matters incidental thereto. Should the Proponent wish to undertake activities involving road transportation or access onto existing roads, the relevant permits will be required.	

5. CHAPTER FIVE: ENVIRONMENTAL BASELINE

In this chapter, the findings of the EIA Team on baseline surveys, public consultation, and desk reviews are undertaken with respect to the ecology, society, economy, and geo-political setup of the proposed project area. The geological makeup and meteorology of the project site will also be discussed in this chapter to give an in-depth understanding of the project area in question.

5.1. Socio-Economic status

Population: According to the **2023 Population & Housing Census**, Hardap Region had **106,680** people (about 52,357 females and 54,323 males) and a regional household average of **3.6 persons**. Urban residency in the region is high (about 74% urban in Hardap). The region's population has been growing and the fertility rate reported was **3.7 children per woman** (2023 census). **Rehoboth town** is one of the region's principal urban centres. 2023 figures place Rehoboth's population in the tens of thousands (population totals for the town and its two constituencies appear in the 2023 census outputs). Rehoboth lies on the national B1 route, which contributes to its role as a service and trade node.

Land uses: Agriculture and irrigation are important land-uses in Hardap. The region contains the Hardap Dam and several irrigation initiatives and green-scheme projects (e.g., Hardap Green Scheme / irrigation projects around Mariental and nearby commercial irrigation proposals). These irrigated areas support fodder, horticulture and other commercial agriculture that provide local employment and sustain agro-processing linkages. Recent project approvals and EMP documents (2024–2025) show active investment in irrigation and green-scheme development. Outside irrigated zones, **extensive grazing/rangeland** and mixed dryland uses dominate typical of central Namibia which means livestock production (cattle, smallstock) and rangeland management remain important livelihoods for rural households. Hardap's low population density across much of the region reflects large agricultural parcels and sparsely settled rural districts. The region is also exploring **new economic opportunities** (references in regional council documents) such as value-chain development for agriculture and, more recently, potential energy developments discussed at the regional level (e.g., green hydrogen interest cited by the Hardap Regional Council).

Service infrastructure: Water: Hardap Dam is a critical water resource for irrigation and town supplies. Water availability can be variable; however, in March 2025 NamWater approved irrigation supply at 100% for the Hardap Scheme following improved inflows a decision that helps sustain agricultural jobs and local livelihoods. Water security remains a core development priority because of periodic droughts. **Transport:** Rehoboth sits on the main **B1 national road**, connecting Windhoek to the south; this gives the town strategic logistical and commercial value. Rural road quality is variable across the region and can constrain market access for farmers in more remote constituencies. **Electricity & communications:** Electrification for lighting is present in many households in the region (the census reports a majority but not universal access), yet service reliability and reach in rural parts can lag behind urban centres. Telecommunications follow a similar pattern adequate in towns but more limited in dispersed rural settlements. **Health and education:** School attendance among children is relatively high (school enrolment for ages 6–15 is above 80% in the regional profile), and the region has established primary and secondary schools and health facilities clustered around urban nodes (Mariental, Rehoboth). However, district and rural clinics can be thinly resourced, and access challenges persist for remote communities.

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5.2. Climate

Rehoboth, located in the northern part of Namibia's Hardap Region, experiences a semi-arid to arid climate typical of the country's interior plateau. The area, sitting at about 1,400 metres above sea level, has hot summers with average daytime temperatures between 30°C and 35°C, occasionally exceeding 38°C, and cool winters with daytime temperatures around 20°C to 25°C and night-time lows sometimes below 5°C. Rainfall is low and erratic, averaging 200–350 mm annually, with most precipitation occurring between November and April through short, intense thunderstorms. Frequent droughts and high evaporation rates (over 2,000 mm per year) make water a scarce and valuable resource, while humidity remains generally low throughout the year.

The region experiences moderate to strong winds, particularly from August to October, which can lead to soil erosion if vegetation cover is poor. Rehoboth enjoys over 300 sunny days per year, offering strong potential for solar energy development. However, the area is highly vulnerable to climate change, with recent years showing rising average temperatures, shorter rainy seasons, and more frequent droughts. These climatic conditions significantly influence agriculture, water availability, and land use, underscoring the importance of sustainable resource management and climate adaptation measures in Rehoboth and the wider Hardap Region.

5.3. Topography

The topography of Rehoboth and the surrounding Hardap Region is characterized by gently undulating plains, broad valleys, and occasional rocky outcrops typical of Namibia's central plateau. The area lies at an elevation of approximately 1,300 to 1,500 metres above sea level, gradually sloping downward toward the south. The landscape is generally open, with scattered hills and low ridges formed from ancient metamorphic and sedimentary rock formations. The terrain's gentle gradient allows for limited agricultural and settlement activities, although shallow, stony soils and low rainfall restrict intensive land use.

To the north and northeast of Rehoboth, the terrain transitions into rolling uplands and isolated hills, while toward the south, it flattens into expansive plains leading to the Hardap Dam and the lower parts of the region around Mariental. Drainage patterns are mainly ephemeral, with seasonal rivers and drainage lines (locally known as omiramba) that flow only during heavy rains. These features contribute to occasional flash flooding during the rainy season but remain dry for most of the year. Overall, the area's topography, combined with its semi-arid climate, plays a significant role in influencing soil formation, vegetation distribution, and land-use potential in the Rehoboth and Hardap Region.

5.4. Fauna

The fauna of the Rehoboth and Hardap Region is typical of Namibia's semi-arid central plateau, where wildlife has adapted to survive in harsh and dry conditions. The area supports a moderate diversity of mammals, particularly small to medium-sized species such as springbok, kudu, oryx, warthog, and steenbok, which are well adapted to the open savanna and bushveld landscapes. Larger predators like leopards, jackals, and caracals may occur in the more remote or rugged areas, while smaller carnivores such as mongooses and

genets are more common. Reptiles, including agamas, skinks, geckos, and snakes, are also well represented and thrive in the warm, dry environment. Livestock farming is widespread and coexists with native wildlife, though human settlement and agricultural expansion have led to localized declines in some species due to habitat loss and fragmentation.

Despite these pressures, wildlife conservation remains an important focus in the broader Hardap Region. Areas around the Hardap Dam and private conservancies serve as refuges for wildlife and support eco-tourism activities. These habitats, though modified, still provide corridors for species movement and help maintain regional biodiversity. Efforts to promote coexistence between wildlife and farming activities continue to play a crucial role in sustaining the region's ecological balance.

5.5. Avifauna

The Hardap Region, particularly around Rehoboth and the Hardap Dam, hosts a rich and varied birdlife (avifauna), with species diversity influenced by the mix of open savanna, shrubland, and aquatic habitats. The Hardap Dam area is one of Namibia's key inland wetlands, attracting both resident and migratory bird species, making it an important birding site. Commonly observed species include Egyptian geese, red-billed teal, African fish eagles, grey herons, and blacksmith lapwings. During the rainy season, large flocks of migratory waders and waterfowl visit the dam and nearby wetlands.

In the drier savanna and woodland areas around Rehoboth, bird species such as lilac-breasted rollers, hornbills, weavers, and raptors like pale chanting goshawks and black-shouldered kites are frequently recorded. These birds contribute significantly to the ecological balance by controlling insects and small vertebrate populations. The diversity and abundance of avifauna in the region highlight the ecological value of maintaining both terrestrial and wetland habitats, not only for conservation but also for eco-tourism and environmental education opportunities.

5.6. Flora

The vegetation of the Rehoboth and Hardap Region is dominated by semi-arid savanna and shrubland, with plant communities adapted to withstand prolonged dry periods and high temperatures. The area lies within the Acacia tree-and-shrub savanna biome, characterized by a mix of grasses, thorny shrubs, and hardy trees. Common woody species include Acacia mellifera (black thorn), Acacia erioloba (camel thorn), and Terminalia sericea (silver terminalia), which provide essential shade and forage for wildlife and livestock. Grasses such as Stipagrostis and Eragrostis species dominate the ground layer, flourishing briefly during the rainy season before withering in the dry months.

In more arid and rocky sections, vegetation becomes sparse and dominated by succulents and drought-tolerant shrubs, while areas near seasonal watercourses support slightly denser growth and riparian species such as Tamarix and Combretum. Overgrazing, wood collection, and invasive alien species (like Prosopis glandulosa) pose challenges to the integrity of the local vegetation. Nonetheless, the region's flora remains an essential component of the ecosystem, supporting soil stability, providing grazing, and sustaining the natural character of the Hardap landscape.

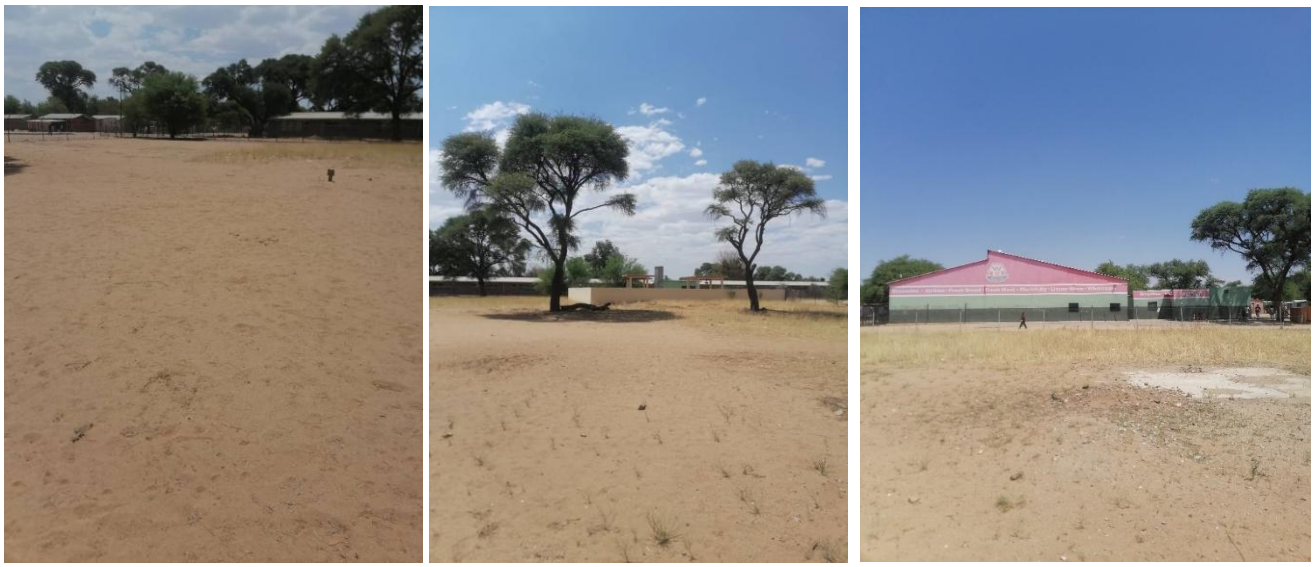

Figure 4: Rehoboth Block E (Community Yard Hall) the proposed telecommunication tower site.

5.7. Hydrology

The hydrology of Rehoboth and the wider Hardap Region is largely defined by ephemeral river systems and groundwater resources, typical of Namibia's semi-arid environment. The area falls within the Fish River Catchment, with drainage patterns dominated by seasonal watercourses (Omiramba) that flow only after significant rainfall events, usually between November and April. These ephemeral rivers, such as the Rehoboth and Oanob Rivers, contribute to temporary surface runoff and shallow groundwater recharge but remain dry for most of the year. Permanent surface water is scarce, making groundwater the main source of domestic, agricultural, and industrial water supply. Boreholes tapping into fractured bedrock aquifers provide most of the water used in Rehoboth and surrounding rural communities.

The Hardap Dam, located further south near Mariental, plays a crucial role in regional water storage, irrigation, and flood control. Although it is outside the immediate Rehoboth area, its catchment and water management influence the broader hydrological system of the region. Due to the area's low and variable rainfall and high evaporation rates, water scarcity remains a key environmental concern. Sustainable groundwater abstraction and effective surface water management are therefore vital to maintaining reliable water supply and supporting both human activities and ecosystem functions.

5.8. Pedology & Geology

The geology of Rehoboth and the Hardap Region is characterized by ancient basement rocks of the Damara Sequence, part of the broader Namaqua-Natal Metamorphic Complex, which dates back more than 1 billion years. These formations consist mainly of gneisses, schists, quartzites, and granites, interspersed with dolerite intrusions and metamorphosed sedimentary layers. The region's geology contributes to its generally rugged and rocky landscape, with shallow soils and scattered outcrops visible across much of the terrain. In some areas, especially along valleys and drainage lines, alluvial and colluvial deposits have accumulated, creating slightly deeper and more fertile soils suitable for limited crop cultivation and grazing.

The soils (pedology) in the area are typically shallow, sandy to loamy, and low in organic matter, reflecting the arid climatic conditions and limited vegetation cover. Dominant soil types include calcareous and ferruginous sandy loams, often underlain by weathered bedrock or calcrete layers. These soils have low water-holding capacity and are prone to erosion when vegetation is removed or overgrazed. Despite their limitations, the soils support hardy grass and shrub species that are well adapted to the dry environment. Understanding the pedological and geological characteristics of the region is essential for sustainable land-use planning, as they directly influence groundwater recharge, vegetation distribution, and agricultural potential.

5.9. Archaeology and Heritage

There are no declared heritage sites by the National Heritage Council of Namibia at the project site at Block E (Community Hall Yard) Rehoboth. However, an accidental find procedure must be implemented during construction, excavation, or development activities to manage the discovery of unexpected items of cultural, historical, archaeological, or paleontological significance. This is to ensure that such finds are handled in compliance with legal and ethical standards while minimizing disruption to the project.

5.10. Alien Plant Assessment

The alien plants were considered during the botanical assessment. It was found that no alien species were found at the site as the position where the tower is to be erected is bare without any plant species needing to be excavated.

6. CHAPTER SIX: PUBLIC CONSULTATION

Public and Stakeholder involvement is a key component of the EA process. The public consultation process, as set out in Section 21 of Regulation No 30 of EMA, has been followed during this assessment, and the details thereof are documented below. The public consultation process assisted the Environmental Assessment Practitioner (EAP) in identifying all potential impacts and to what extent further investigations are needed. Public consultation can also aid in the process of identifying possible mitigation measures.

6.1. Registered Interested and Affected Parties (I&APs)

The Consultant identified relevant and applicable national, regional, and local authorities, local leaders, and other interested members of the public. Pre-identified I&APs were contacted directly, while other parties who contacted the Consultant after project advertisement notices in the newspapers, were registered as I&APs upon their request. Newspaper notices of the proposed tower construction activities were placed in two widely read national newspapers in the region (The Confidente and Windhoek Observer). The project advertisement/announcement ran for two consecutive weeks inviting members of the public to register as IAPs and submit their comments. The summary of pre-identified and registered IAPs is listed in the table below. A full stakeholder list is listed under **Appendix D.**

Table 3: Summary of pre-identified Interested and Affected Parties (I&APs)

National - Ministries and State Owned Enterprises
Ministry of Environment, Forestry and Tourism
Ministry of Information and Communication Technology
Ministry of Urban and Rural Development
Ministry of Works and Transport
Ministry of Health and Social Services
Ministry of Agriculture, Water and Land Reform
National Radiation Protection Authority
Roads Authority
Namibia Civil Aviation Authority
CRAN
Regional & Local
Rehoboth Town Council
General Public
Interested members of the public / communities

6.2. Communication with I&APs

Regulation 21 of the EIA Regulations details the steps to be taken during a public consultation process and these have been used in guiding this process. Communication with I&APs with regards to the proposed development was facilitated through the following means and in this order:

6.2.1. Background Information Document

A Background Information Document (BID) was drafted at the onset of the EA process to act as a useful information handout about the proposed project development. In addition, the BID provided details on the public consultation process with contact details for further information. This document was advertised for availability through various means of newspaper articles, public meetings, and electronic mail; see Appendix B of this document

6.2.2. Newspaper Advertisements & Articles

Newspaper notices about the proposed project and related Environmental Assessment processes were circulated in two newspapers for two weeks. These notices appeared in the “Confidente” and “The Windhoek Observer” newspapers, shown in **Appendix B.**

6.2.3. Public Site Notices

A site notice (A3) was placed at the refuse drum next to the community hall yard which is by the site, to inform members of the public of the EIA process and register as IAPs, as well as submit comments. The notices also provided information about the project and related EIA process while providing contact details of the project team.

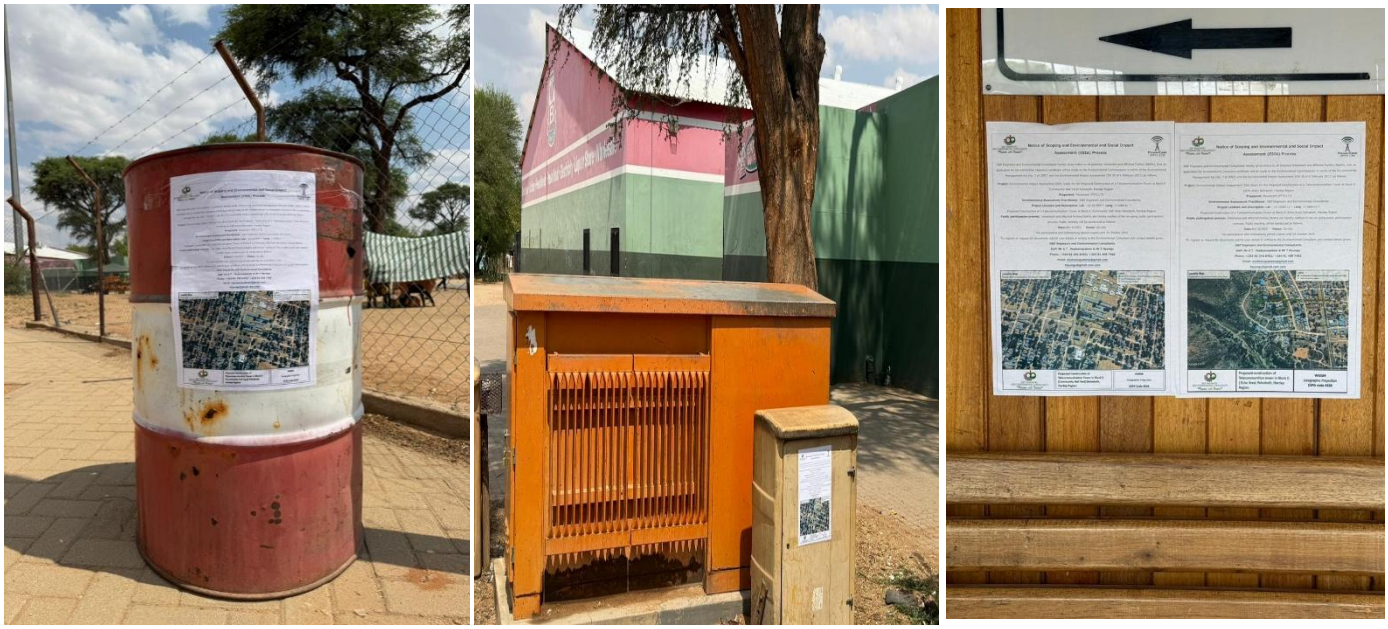

Figure 5: Site Notices at the Community Hall Yard at the project site, at the Woermann Brock Block E transformer and the Rehoboth Town Council.

6.3. Public Consultation Meeting and feedback

6.3.1. Stakeholder Meetings & Key Conversations

A public meeting is one of the most important components of public consultation process as it brings the consultant and affected members of the public (particularly from the affected site area) together. The meeting is usually done in an interactive session form so that the community members or members of the public can public consultation feedback. A public meeting was scheduled on Saturday, 4 October 2025 at Rehoboth Block E (Community Hall Yard) where the local resident was interviewed and visited door to door to consult, especially the those immediately adjacent to the project site. Appendix B has a detailed list of the attendance/consultation register. The consultant administered questionnaires during the meeting to members who participated in the engagement.

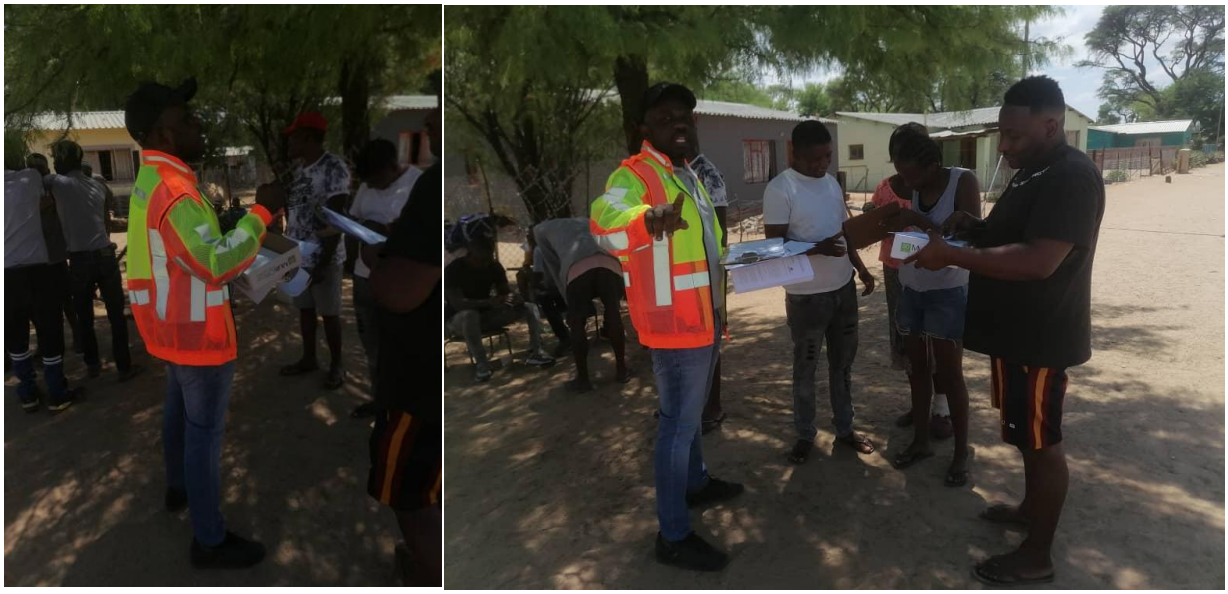

Figure 6: Community engagement and consultation conducted in Rehoboth Town.

6.3.2. Comments and review period

From the onset of the public consultation process and the initial information sharing through the BID, newspaper, and site notices, various stakeholders were given a chance to registered and provide their comments. However, no comments were received from I&APs apart from those noted at the public meeting. During the public meeting all comments were noted and captured in the minutes. All the individuals in attendance gave the project a go ahead noting the need for continued network coverage in the area. Questionnaires and proof of stakeholder engagement are attached in **Appendix B** of this EAR.

7. CHAPTER SEVEN: IMPACT IDENTIFICATION, ASSESSMENT AND MITIGATION

7.1 Identification of Potential Impacts

The proposed project activities are expected to generate both positive and negative environmental impacts. In an environmental assessment, emphasis is primarily placed on identifying and managing the negative impacts to ensure they are effectively mitigated. This approach allows for the implementation of appropriate mitigation measures that minimize the severity and significance of adverse effects, while at the same time enhancing the positive outcomes of the project. The goal is to promote sustainable development and safeguard both the environment and local communities. The key potential positive and negative impacts identified are outlined below:

Positive impacts:

- **Telecommunications convenience:** Residents (mobile users), both present and future, will benefit from better infrastructure and won't have to worry about network coverage issues.
- **Employment creation:** Creation of a few temporary jobs during the construction of the tower.
- **General contribution to local economic development** through reliable communications services.

Negative impacts:

- **Physical land / soil disturbance:** Excavation activities to erect the tower could potentially lead to site soils' disturbance.
- **Noise:** During tower' construction, the presence of the construction team and movement of heavy vehicles and machinery may disturb the immediate neighbours to the site.
- **Visual impact:** The presence of the tower in the neighbourhood may be a nuisance to locals.
- **Impacts to Human Health**: Electromagnetic Radiation emitted from the antennae of cellular structures may affect human health.
- **Potential occupational health and safety risks** associated with mishandling of construction and operations equipment.
- **Civil Aviation concerns:** The proposed site designs and location need to be verified to ensure that it meets the approval of the Directorate of Civil Aviation regarding the height of the masts and the position and stability of transmitters.
- **Environmental pollution** from improper disposal of waste generated during construction and maintenance phases.
- **Vehicular traffic safety** from increased number of vehicles moving around the project site and slow-moving trucks transporting project structures during construction, and
- **Archaeological or cultural heritage impact** through unintentional uncovering of unknown archaeological objects or site by certain project activities such as excavation (the minimal site works).
- **Waste Generation** from improper disposal of waste generated during construction and maintenance.
- **Dust Generation** from construction works and vehicular traffic
- **Loss of Avifaunal Biodiversity**

7.2 Impact Assessment Methodology

The Environmental Assessment is primarily a process used to ensure that potential impacts that may occur from project activity are identified and addressed with environmentally cautious approaches and legal compliance. The impact assessment method used for this project is in accordance with Namibia's Environmental Management Legislation (Environmental Management Act No. 7 of 2007) and its EIA Regulations of 2012.

7.2.1 Impact Assessment Criteria

The identified impacts were assessed in terms of probability (likelihood of occurring), scale/extent (spatial scale), magnitude (severity) and duration (temporal scale) as presented in **Table 4.** The recommended mitigation measures prescribed for each of the potential impacts (as captured in the EMP) contributes towards the attainment of environmentally sustainable operational conditions of the project for various features of the biophysical and social environment. The following criteria were applied in this impact assessment:

Table 4: Impact Assessment Criteria

Duration – What is the length of the negative impact?	
None	No Effect
Short	Less than one year
Moderate	One to ten years
Permanent	Irreversible
Magnitude – What is the effect on the resource within the study area?	
None	No Effect
Small	Affecting less than 1% of the resource
Moderate	Affecting 1-10% of the resource
Great	Affecting greater than 10% of the resource
Spatial Extent – what is the scale of the impact in terms of area, considering cumulative impacts and international importance?	
Local	In the immediate area of the impact
Regional / National	Having large scale impacts
International	Having international importance
Type – What is the impact	
Direct	Caused by the project and occur simultaneously with project activities
Indirect	Associated with the project and may occur later or wider area

Duration – What is the length of the negative impact?	
Cumulative	Combined effects of the project with other existing / planned activities
Probability	
Low	<25%
Medium	25-75%
High	>75%

7.2.2 Impacts Significance

After the impact has been assessed, its significance is then determined. The impact significance is determined through a synthesis of the above impact characteristics. The table below captures the significance rating scale which was used to rate the identified impacts.

Table 5: Impacts Significance

Class	Significance	Descriptions
1	Major Impact	Impacts are expected to be permanent and non- reversible on a national scale and/or have international significance or result in a legislative non- compliance.
2	Moderate Impact	Impacts are long term, but reversible and/or have regional significance.
3	Minor	Impacts are considered short term, reversible and/or localized in extent.
4	Insignificant	No impact is expected.
5	Unknown	There are insufficient data on which to assess significance.
6	Positive	Impacts are beneficial

7.2.3 Assessment of Potential Negative Impacts

Table 6: Environmental Impacts and Aspects Assessment

Environmental Impact	Valued Ecosystem Component	Impact	Project Phase	Duration	Magnitude	Extent	Type	Probability	Significance	Infrastructure/ Activity
TOPOGRAPHY	Landscape Scenery	Visual aesthetic impact	Construction and Operation	Moderate	Moderate	Local	Direct	Medium 25 - 75%	Minor	Tower construction
SOIL DISTURBANCE AND POLLUTION	Soil	Contamination to soil from paints and other potentially hazardous substances	Construction and Operations	Moderate	Small	Local	Direct	Low <25%	Minor	Tower construction
	Soil	Spillages of fuel, oil and lubricants.	Construction	Short	Small	Local	Direct	Low <25%	Minor	Tower and Access Road construction
	Soil	Erosion	Construction	Moderate	Small	Local	Direct	Low <25%	Minor	Tower and Access Road construction
LAND CAPABILITY	Terrestrial ecology	Change in land use	Construction and Operations	Permanent	Great	Local	Direct	Low <25%	Moderate	Tower
	Carrying capacity	Increase in human activities in the environment	Construction and Operations	Moderate	Moderate	Regional	Direct	Low <25%	Minor	Tower
WATER	Surface water quality	Water pollution from potential oils, lubricants and chemicals spillages.	Construction and Operations	Moderate	Small	Local	Direct	Low <25%	Moderate	Construction hydrocarbons
AIR QUALITY	Air Quality	Construction phase dust	Construction	Short	Small	Local	Direct	Low <25%	Minor	Tower and Access Road construction

Environmental Impact	Valued Ecosystem Component	Impact	Project Phase	Duration	Magnitude	Extent	Type	Probability	Significance	Infrastructure/ Activity
WASTE	Groundwater quality	Hazardous waste such as waste lubricants and stored chemicals may be release into the environment.	Construction and Operations	Short	Small	Local	Direct	Low <25%	Minor	Tower and Access Road construction
	Surface water quality	Threatened from chemicals being washed into nearby water bodies	Construction and operations	Moderate	Moderate	Regional	Direct	Low <25%	Moderate	Tower and Access Road construction
	Surface water quality	Construction and Operational solid waste	Construction and operations	Moderate	Moderate	Regional	Direct	Medium 25 - 75%	Moderate	Tower and Access Road construction and maintenance
FAUNA	Terrestrial ecology and biodiversity	Loss of habitat and driving away of local animals	Construction and Operations	Short	Small	Local	Direct	Low <25%	Minor	Tower and Access Road construction
	Terrestrial ecology and biodiversity	Destruction of vertebrate fauna (e.g. road kills; and fence)	Construction and Operations	Short	Small	Local	Direct	Low <25%	Minor	Tower and Access Road
SOCIAL	Noise Pollution	Increased noise levels	Construction	Moderate	Small	Local	Direct	Low <25%	Minor	Tower and Access Road
	Socio Economic Activities	Temporary and permanent employment prospects.	Construction and operations	Long	Moderate	Regional	Direct	Medium 25 – 75%	Positive	Tower and Access Road
	Socio Economic Activities	Climate change impacts	Operations	Long	Moderate	Regional / National	Direct	High >75%	Positive	Tower and Access Road
	Contribution to National Economy	Employment, local procurement, duties and taxes.	Construction and Operations	Short	None	Regional / National	Direct	Low <25%	Positive	Tower and Access Road

Environmental Impact	Valued Ecosystem Component	Impact	Project Phase	Duration	Magnitude	Extent	Type	Probability	Significance	Infrastructure/ Activity
HERITAGE	Artefacts, archaeological high value components	Destruction or affecting paleontological and archaeological artefacts	Construction and Operation	Moderate	Small	Local	Direct	Low <25%	Minor	Tower and Access Road
HEALTH AND SAFETY	Health Sanitation	Poor ablution and waste management facilities may be detrimental to human health.	Construction	Moderate	Moderate	Local	Direct	Medium 25 – 75%	Moderate	Tower and Access Road
	Property and human life	Electrocution, fires resulting in fatalities, damage to properties, veld fires and power surges.	Construction and Operation	Moderate	Great	Local	Direct	Medium 25 – 75%	Major	Tower housing
	Natural Environment	Spillage/ release of chemicals into the environment	Operation	Moderate	Great	Local	Direct	Medium 25 – 75%	Major	Tower and Access Road
	Humans, Vegetation, Animals	Potential impacts from non-ionizing radiation propagated by masts.	Operation	Moderate	Small	Local	Direct	Low <25%	Minor	Tower
AVIAN IMPACTS	Air traffic	Air Traffic disturbances	Operation	Moderate	Great	Local	Direct	Medium 25 – 75%	Major	Tower
	Avifauna	Bird fatalities	Operation	Moderate	Moderate	Local	Direct	Medium 25 – 75%	Moderate	Tower
TRAFFIC	Access roads	Vehicular accidents	Construction and Operation	Moderate	Great	Local	Direct	Medium 25 – 75%	Major	Tower

The potential negative impacts stemming from the proposed activities are describe and assessed. Further mitigation measures in a form of management action plans are provided in the draft Environmental Management Plan (EMP).

8. CONCLUSION AND RECOMMENDATIONS

In summary, this Environmental Impact Assessment (EIA) was undertaken to thoroughly assess the potential environmental, social, and economic impacts of the proposed construction of the Rehoboth Block E (Community Hall Yard) Telecommunication Tower. The study evaluated the existing environmental conditions, proposed project activities, and feedback from key stakeholders to identify significant issues and propose appropriate mitigation strategies.

The results of the assessment reveal that although the project may pose certain environmental and social risks, these can be effectively mitigated through the proper implementation of the measures outlined in the Environmental Management Plan (EMP). Strict adherence to the EMP will ensure compliance with relevant laws and regulations, reduce negative impacts, and strengthen the project's positive contributions to both the environment and local communities.

The EIA further underscores the need for continuous monitoring, stakeholder engagement, and adaptive management throughout the project's lifespan. Such actions will promote accountability, maintain environmental standards, and support sustainable and inclusive development.

Overall, it is recommended that the project be approved to proceed, subject to the full implementation of the proposed mitigation measures and commitments presented in this report and the EMP. This EIA provides a sound basis for informed decision-making by the relevant authorities and supports the responsible advancement of the proposed development.

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