PowerCom (PTY) LTD

ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT

MEFT APPLICATION NUMBER: APP 250915006431

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CONSULTANT: **D&P ENGINEERING AND ENVIRONMENTAL CONSULTANT**

D&P
ENGINEERS AND ENVIRONMENTAL CONSULTANTS

ENVIRONMENTAL ASSESMENT FOR THE FOR THE PROPOSED TELECOMMUNICATION TOWER AT ONHELEIWA VILLAGE-OHANGWENA REGION

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1. Contents

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**
ESMP	**Environmental and Social Management Plan**
EMPr	**Environmental Management Plan Report**
ISO	**International Organization for Standardization**
I&APs	**Interested and Affected Parties**
MET: DEA	**Ministry of Environment and Tourism's Directorate of Environmental Affairs**
NEMA	**Namibia Environmental Management Act**
OV	**Onheleiwa Village**
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.

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 Onheleiwa village. 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 near Okongo at Onheleiwa village, Ohangwena Region (17°36'57.7"S 17°16'02.0"E) as shown in Figure 1, satellite image. The site is located in Okongo Constituency, accessed via Okongo-Mpungu road (B10) approximately 6km from Okongo. The site is about 2.4 km from the B10 road. Table 1 and Figure 1 overleaf is the project site coordinates and Locality Map respectively.

Table 1: Proposed project site coordinates

Site Name	Region	Geo Reference
Onheleiwa village	**Ohangwena**	17°36'57.7"S 17°16'02.0"E

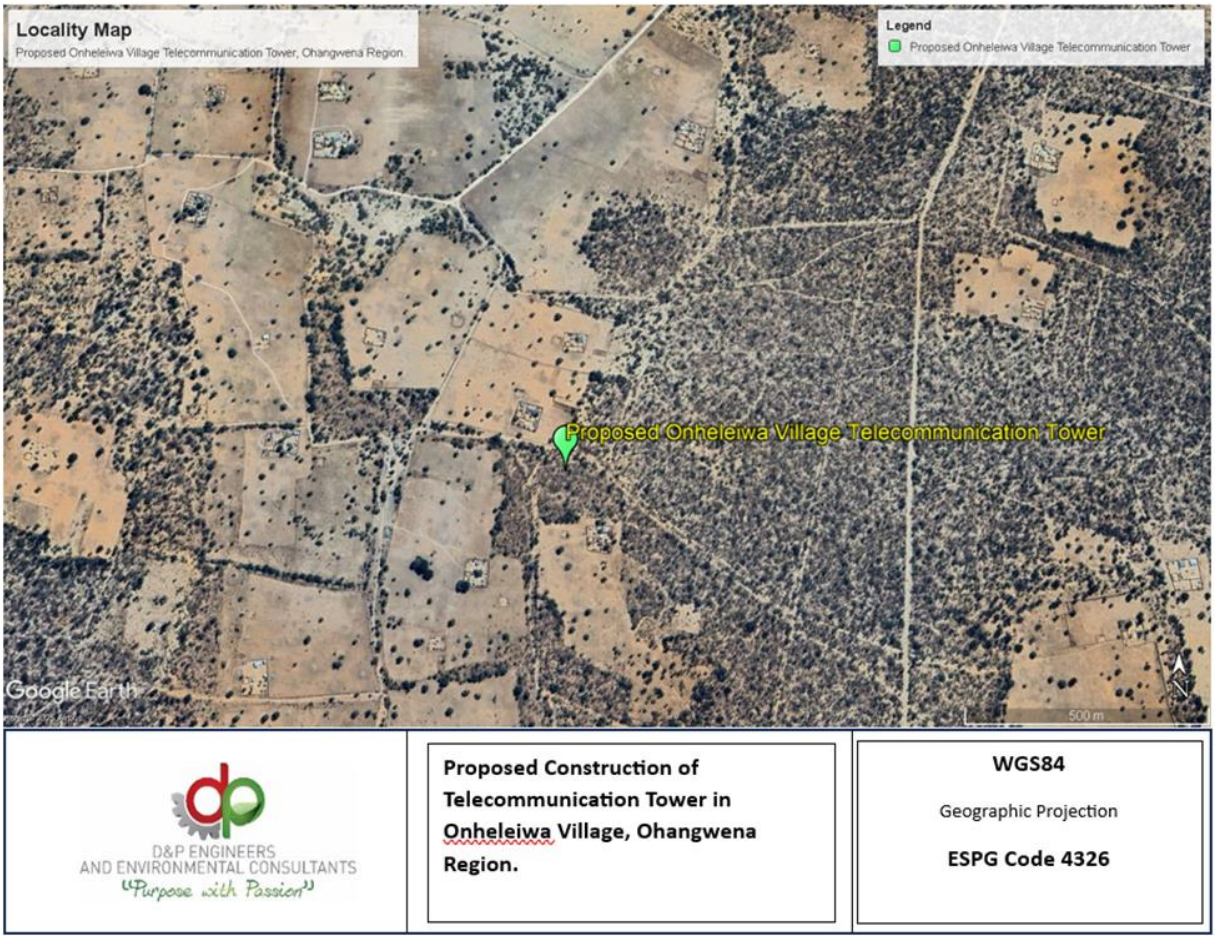

Figure 1: Locality Map

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 Onheleiwa village in Ohangwena region.

The telecommunication tower development in Onheleiwa village will include the following:

- Construction of a 30m lattice tower with a footprint size of a 14m x 14m 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 tower (for visual purposes only)

1.4. Proposed Site Ownership

The site is easily accessible from the B10 road Okongo Mpungu road, 6km from the village town. From the B10 main road, the site can be accessed through the village access road to the Onheleiwa village about 2.4km. The actual site falls under the Oukwanyama traditional Authority and communal ownership to Mr Erasmus Ndaitwa. The selection of this site was driven by anticipated network shortfalls affecting mobile users in this area and its surrounding. Furthermore, several selections criteria were used to identify the most suitable location for this tower in this village. Approval for the tower was formally granted to Powercom in a letter dated 08 July 2024 (Please refer to Appendix C). Location details are provided in Table 1 overleaf.

Table 2: Details of the proposed tower's localities

Site Name	Onheleiwa
GPS Coordinates	17°36'57.7"S 17°16'02.0"E
Local Authority	Linyanti Constituency
Regional Administration	ZAMBEZI 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 and Social Management Plan (ESMP).
- Application for 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 telecommunication tower

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 telecommunication tower in Onheleiwa village to address this demand. The planned telecommunication lattice 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 30KM radius providing sufficient connectivity to residents of Okongo, Onheleiwa village and beyond
- Land suitability: The site is easily accessible by road, well placed to serve locals.

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 and Social Management Plan (ESMP) 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 Mudzanapabwe, a qualified and experienced Environmental Assessment Practitioner (EAP). The EAP's curriculum vitae are included in Appendix D.

2. CHAPTER TWO: PROJECT DESCRIPTION AND PROPOSED ACTIVITIES

2.1. Planning and Design Phase

All contractors venturing in the development of telecommunication towers in Namibia are required to take into account some planning and design factors. Proponent was guided by the Communications Act No. 8 of 2009 to seek all necessary licencing and regulatory compliances. All necessary permits and approvals from all relevant authorities such as the Communication Regulatory Authority of Namibia (CRAN), Ministry of Environment, Forestry and Tourism and the Ministry of Information and Communication Technology (MICT) supported by consents from interested and affected parties (I&APs) through an EIA process were sought. A comprehensive EIA study was also conducted as per the Environmental Act. No. 7 of 2007 and its regulations to ensure that potential impacts on biodiversity, soil, water, and air quality are assessed and mitigated. The assessment also provided an opportunity to ascertain that all alternatives to minimizing environmental footprint are considered and negative impacts are controlled by following the developed Environmental Management Plan (EMP).

Site selection and zoning was another important factor that the proponent considered during this phase. To ensure tower security, a suitable location for this tower was selected taking into account land-use and zoning regulations. Prior consultations with the local authority offices were also done to obtain consent over the use of the land. This process also includes the consultation of I&APs, which includes local communities, government authorities and other relevant stakeholders. This process was key in addressing potential concerns (health, anaesthetics, property value etc) related to the proposed development, security of land access and use including lease and ownership rights.

In terms of the technical aspects, the proponent took into account the technical requirements for optimal coverage and capacity, including tower height, antennae type, and power supply. To minimize infrastructure overload, co-location of equipment was considered to minimize the number of towers, reduce costs, and mitigate visual and environmental impacts, however due to lack of available infrastructures a new tower was proposed for development. The proposed tower is 30 meters high, with a footprint of $14m^2$ which will cater for the tower and its associated accessories.

2.2. Construction Phase

Typically, the construction of the tower is expected to take about one month, and minimal earthworks will be required to prepare the site. The site will be cleared, levelled, and marked for the tower's foundation. During this time a fence will be demarcated around the construction area to secure the area and to ensure that access to the tower is only limited to

authorised personnel. Fencing will also prevent vandalism of the tower and it associated accessories. The tower's foundation will be constructed using reinforced concrete to ensure structural stability and proper grounding (earthing) will be integrated into the foundation to protect it against lightning strikes.

The tower structure will be assembled on-site, often using manual labour. All technical work will be carried out by an appointed contractor, who will work during weekdays, preferably between the hours of 08h00 and 17h00. The number of workers expected for this work will depend on the local contractors appointed and their standard human capacity for development of the project. Preference for the construction works will be given to locals, i.e., contractors from Ohangwena Region whenever possible. All non-skilled labour will also be given to local residents (Onheleiwa village). No workers will be housed on site, necessary accommodation (where needed) will be arranged for all workers. For safety reasons, the appointed contractor will be responsible for providing appropriate Personal Protective Equipment (PPE) to all workers during construction.

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 near the tower site in Onheleiwa village.

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 rural 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 located in Onheleiwa village, 6km East of Okongo. The site can be reached through the B10 Okongo – Mpungu Road. The existing roads are key in providing necessary basic services to the people of Okongo and nearby villages.

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

Once construction phase has been completed, 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 ESMP)

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 ESMP.

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 Onheleiwa and other neighbour villages. 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. In the event that 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 this very site a 30m lattice tower was chosen considering both technical, economic and environmental factors. While there may be several other types of telecommunication towers design and forms, this particular tower was selected to make sure network connectivity in the Onheleiwa area and its surroundings is good and does not overshoot.

Alternatives that were considered for the proposed project in Onheleiwa village: "**NO GO ALTERNATIVE".**

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 to no network coverage in Linyanti 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.

2. 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 3: 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.

LEGISLATION/POLICY/GUIDING DOCUMENT	RELEVANT PROVISION	PROJECT IMPLICATION
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 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.	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 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 Act and its regulations when installing electrical connections to the tower.

LEGISLATION/POLICY/GUIDING DOCUMENT	RELEVANT PROVISION	PROJECT IMPLICATION
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 Ordinance 14 of 1974 sections 3 and 27	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 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.	PowerCom will have to conform to this Act and its regulations through application for relevant licenses with the relevant bodies highlighted thereto.
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.

LEGISLATION/POLICY/GUIDING DOCUMENT	RELEVANT PROVISION	PROJECT IMPLICATION
"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 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.	Environmental recommendations and considerations on this project have ensured that the proposed activities will not fall within the boundaries of any protected area and 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 4 matured trees which will be removed to pave way for development. Where possible the contractor will be advised to avoid removal of such trees. There are sparsely distributed shrubs.
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.

LEGISLATION/POLICY/GUIDING DOCUMENT	RELEVANT PROVISION	PROJECT IMPLICATION
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.
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 are no wetland around the project area.
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 during the construction phase.
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.

LEGISLATION/POLICY/GUIDING DOCUMENT	RELEVANT PROVISION	PROJECT IMPLICATION
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	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.
	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.	
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.

LEGISLATION/POLICY/GUIDING DOCUMENT	RELEVANT PROVISION	PROJECT IMPLICATION
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 charge any nuisance or other condition liable to be injurious or dangerous to health.	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 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.

LEGISLATION/POLICY/GUIDING DOCUMENT	RELEVANT PROVISION	PROJECT IMPLICATION
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.	NTC council is the Local Authority responsible for the project site. Therefore, the council will 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, 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.	Mitigation measures should be provided for since the project activities will make use of the public roads during construction phase.

3. CHAPTER FIVE: RECEIVING ENVIRONMENT

5.1. Introduction

The conclusion in this chapter is grounded on baseline surveys, public consultation and desk reviews undertaken by the EIA team. The findings relate mainly to aspects of ecology, ambient air, soil, water and noise levels for the entire operation. Correspondingly, the economic and social environment was considered for this study. This Chapter outlines relevant environmental and social setup which was instrumental to compile this report from desktop researches, local authorities' consultations and own observations.

5.2 Socio-Economic Status

Okongo is a village town in the Ohangwena Region of northern Namibia. It had a population of 3,564 people in 2023. It is the district capital of Okongo Constituency. Okongo is situated 6 km northwest of Onheleiwa

- **Economy:** The region is actively involved in socio-economic development initiatives, including those focused on food security and disability inclusion.
- **Infrastructure:** Eenhana, the regional capital has a well-developed infrastructure and is connected to the road network.
- **Healthcare:** The region has a total of 3 hospitals, 2 health centers, and 31 primary health care clinics.

The Ohangwena Region is situated in the northern parts of Namibia. It has a total population of approximately 250 000 residents. It is one of the most densely populated areas in the country considering its size and the reason for this is because agricultural and cattle farming are the main activities contributing to its economy. This province borders on Angola and four other provinces of the country – Kavango, Oshikoto, Oshana and Omusati.

The capital town of Eenhana once served as the military centre for the South African Defence Force. This town is located in a picturesque tropical forest area and the main activity with which the residents keep themselves occupied is cattle farming. Tourists can experience the Kwanyama culture by visiting the town of Helao Nafidi which also hosts an annual trade show, thus according to *Namibia-info.com*.

5.3. Climate

Ohangwena, Namibia, experiences a semi-arid climate classified as BSh under the Köppen-Geiger system. The region showcases a remarkable temperature range, with minimum values dipping to 5°C (41°F) in May, while average temperatures hover around a comfortable 24°C (76°F) throughout the year. Notably, the hottest month occurs in October, where temperatures can escalate to an impressive 40°C (105°F). This temperature variability significantly impacts the local environment and agricultural practices, highlighting the importance of understanding climate dynamics in this region.

According to Mouton et al, the climate is similar across the four north-central regions of Namibia, of which Ohangwena is one, with very hot summers and cool-to warm winters. The climate is suitable for dry-land cropping and livestock grazing.

5.3.1. Temperature

In Ohangwena, Namibia, temperature patterns exhibit distinct seasonal variations throughout the year. The warmest months are from **October to December**, where maximum temperatures consistently reach up to **40°C (104°F)**, alongside high averages around **28°C (83°F)**. As the year progresses into the cooler months, **May to August** witnesses a notable drop in temperatures, with minimums plummeting to **5°C (41°F)** in May and averages declining to **19°C (66°F)** during June and July. Transitional months like **September and November** bring a gradual increase in warmth again, with temperatures rebounding to averages of **27°C (81°F)** and maxima around **38°C (101°F)**. This cyclical nature of temperature marks Ohangwena as a region defined by its **intense heat variations**, facilitating a unique climate experience.

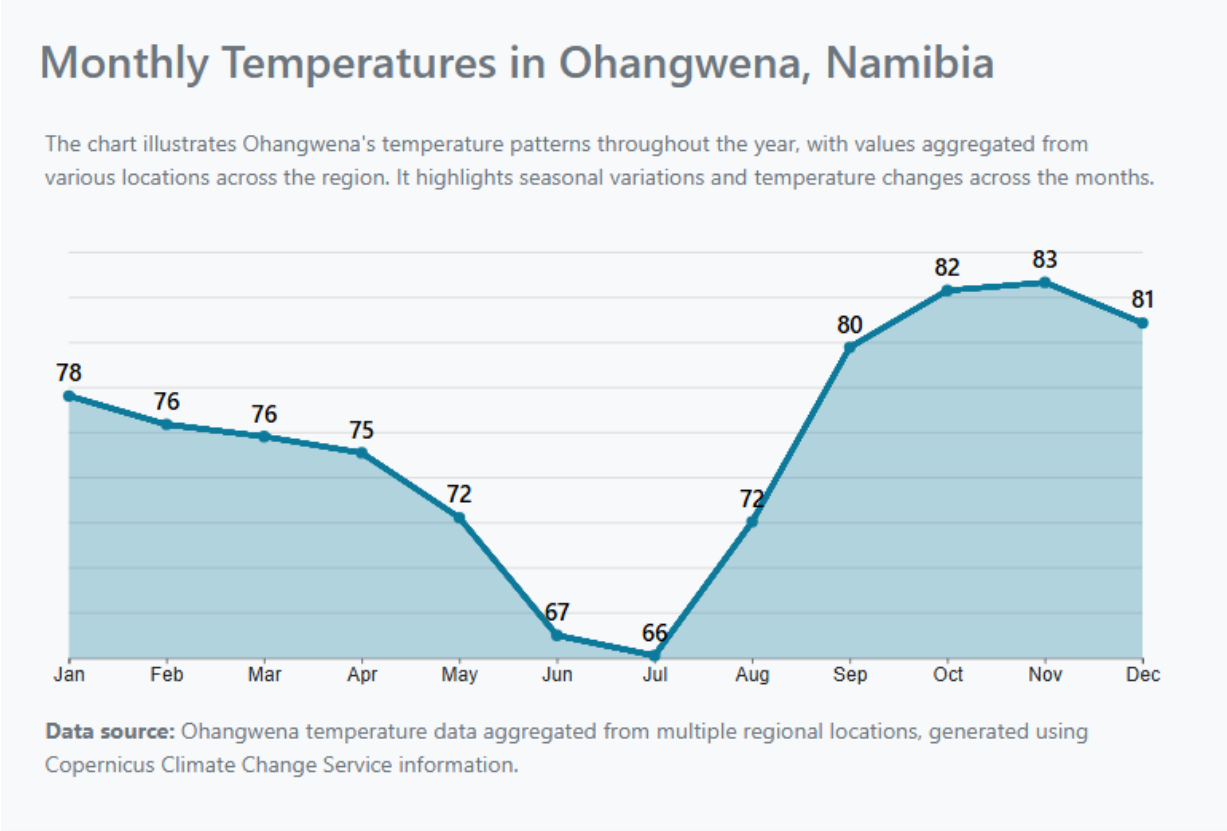

Figure 3: Average Monthly temperatures in Ohangwena

5.3.2. Precipitation Patterns in Ohangwena

Ohangwena, Namibia, showcases a marked seasonal pattern in precipitation, with the majority of rainfall occurring during the peak summer months from January to March. January stands out as the wettest month, receiving approximately **130 mm (5.1 in)** of rain over an average of **14 days**, followed closely by February and March, which each receive **135 mm (5.3 in)** of rainfall

across **14** and **16 days**, respectively. This significant rainfall is crucial for the region's agriculture and ecosystem, facilitating growth and sustenance during the hotter months.

Conversely, the **dry season** stretches from May through September, during which the area experiences virtually no rainfall, with each month recording **0 mm** of precipitation. The gradual reintroduction of rain begins in October with a mere **14 mm (0.5 in)**, followed by an increase in November's **31 mm (1.2 in)**. December brings a resurgence of precipitation at **99 mm (3.9 in)**, marking the return of the wet season. This distinct seasonal variability in rainfall underlines the climatic challenges faced by the region, influencing both natural habitats and human activities.

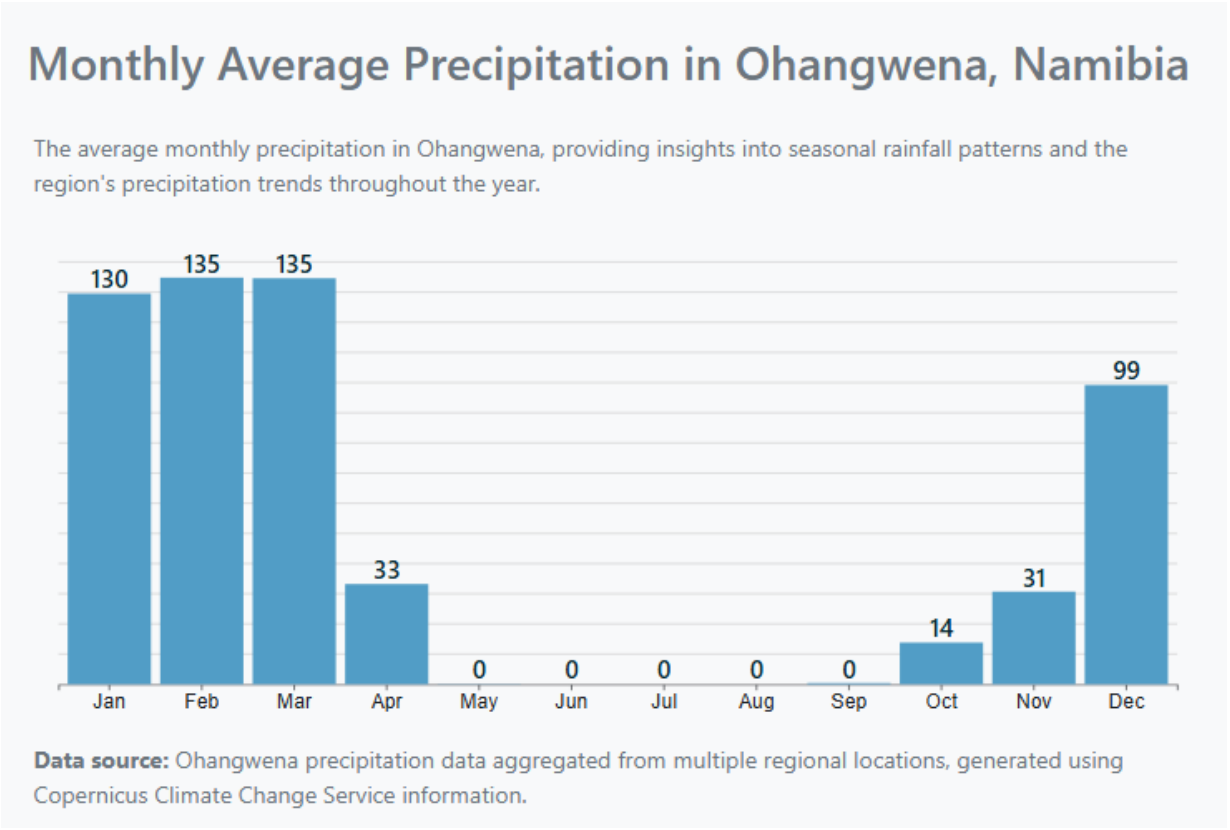

Figure 4: Monthly Average precipitation in Ohangwena

5.3.3. Conclusion

In conclusion, Ohangwena, Namibia, exemplifies a unique climate characterized by distinct seasonal patterns in temperature, precipitation, sunshine duration, UV Index, and daylight hours. The region experiences intense heat during the summer months, coupled with significant rainfall that supports agricultural productivity. High sunshine duration and elevated UV Index throughout the year highlight the importance of sun protection for residents and visitors alike. Furthermore, the consistent daylight hours create a rhythm that fosters community activities and agricultural development. Understanding these climatic nuances is essential for effective planning and adaptation strategies, ensuring that the vibrant life and natural beauty of Ohangwena continue to thrive in the face of climate variability, thus according to https://nomadseason.com.

5.4 Biological Environment

5.4.1 Flora

The Ohangwena region's vegetation is characterized by Kalahari woodlands, shrubs, and the Cuvelai network of Oshanas, and is part of the savanna biome. Common plants include pearl millet and Makalani palms, alongside various trees such as the baobab, bottle tree, and Camelthorn tree.

Figure 5; Existing vegetation on proposed site

5.4.2. Fauna

The fauna of the Ohangwena region includes native wildlife like the Groundscraper Thrush, Green Woodhoopoe, Gray Go-away-bird, and Meyer's Parrot. The area is also home to domestic animals such as goats, cattle, donkeys, chickens, and pigs.

3.4.5 Amphibians, Reptiles and Invertebrates

The area has a high occurrence of reptiles, snakes. This includes cobras; puff adders (inhabit grasslands and bush ecosystems). The area is a habitat of a wide number of lizard species and tortoises. The baseline study further discovered existence of snails, centipedes, spiders and scorpions.

3.4.6 Geology and Soil

The areas covering project site consists mostly of unconsolidated windblown sand and sand deposited under fluvial conditions. The basal layer is as yet poorly understood and consists of conglomeratic, red clayey sand with carbonate cement. The surrounding place within the project area is characterized by thin aeolian sands and loamy, calcareous soil with crusts of ferricrete and calcrete.

According to the Argo-Ecological Zoning Programme (AEZ) of the Ministry of Agriculture, Water and Forestry and the World Reference Base for Soil Resources (FAO, 1998), aeolian sands which contain sandy soil with poor retained nutrient capacity. The sand further is slightly acidic which also results in nutrient deficiency. Generally, soils are deep and purely sandy with average soil fertility. Heavier textured soils have formed in the so-called omuramba (wide, flat watercourses with-out visible gradient). A number of these omuramba cross the area are in eastern direction from the project area. The omuramba, because of nutrient-richer soils, are sought-after for fields of agricultural vegetation by the local population. They also promote the growth of thick vegetation especial the ***Baikiaca Plurjuga*** which are in abundance in the nearby environment. These trees are not going to be disturbed in any way during the project development and operations

3.4.7 Hydrology (Surface & Ground Water)

Hydro he hydrology of Ohangwena is defined by its porous aquifers, particularly the multi-layered Ohangwena Aquifer system, which is a significant water source for the region. However, the area also experiences frequent flooding, especially from rainfall and overflowing oshana (ephemeral rivers), which is exacerbated by poor drainage and high-water levels in the region's water bodies. Key challenges include managing groundwater resources, mitigating flood impacts, and improving infrastructure to ensure reliable water supply, as detailed in the region's water development plans and infrastructure projects.

3.4.8. Topography and Elevation

Onheleiwa is a locality in Ohangwena Region, Namibia and has an elevation of 1,153 metres. The topography of the Ohangwena region is generally flat and characterized by woodland savannah, with the landscape dotted with Makalani palm trees and mahangu (millet) fields. It has a relatively low elevation, with the terrain being mostly flat with some variations due to the presence of oshanas (dry riverbeds) and community forests.

4. CHAPTER SIX: PUBLIC AND STAKEHOLDER CONSULTATION

6.1. Introduction

Public participation procedures were conducted in accordance with regulations 21 to 24 (EMA 2007, Regulations 2012). It was instigated by way of personal notification given to all Potential Interested and Affected parties (I&APs), as well as newspaper advertisement in the Newspapers. The Background Information Document (BID) containing all relevant facts in respect of the project was made available to I & Aps potential interested and affected parties registered or who attended the public meeting.

6.2. Public Participation Process Notification

The EAP visited the project site and Onheleiwa village on the 7th of October 2025. The agenda was to meet the local leadership, site visit and to conduct a community engagement meeting. Earlier the EC shared a Background information and site notices to circulate ahead of the scheduled I&APs meeting. Invitation was done by the local leadership consist of the Village headman, his vice as well as their respective coordinators.

6.3. Background Information Document

A background information document (BID) was prepared. This document provides a short summary of the project and the EIA process and it was distributed to the Interested and Affected Parties during the survey. The main aim of distributing the BID to Interested and Affected Parties is to bring awareness and clarity about the project to be developed in their area. A copy of the BID is provided in **Appendix C**.

6.4. Consultation with I &A Ps

On the 7th of October 2025 the vice to the headman accompanied the EAPs around the village and to locate the proposed project site. The proposed site was located in the vice headman's community owned grazing area/ paddock. They however decided to notify the immediate neighbour whom did not oppose the project, but rather emphasize on the speedy establishment of the proposed tower.

A call for interested and affected parties' comments was placed in the newspapers (attached). A call for public participation invitation was put on all the surrounding places where notice boards are normally put for the public for occurrence T junction of the B10 and access road, shopping area, and on site. Figure 6 overleaf shows one of the public notices.

This consultation process also provided stakeholders opportunity to express their views and concerns about the project which assisted in determining the scope of work for the EIA. Therefore, this process enabled all stakeholders to provide crucial information regarding environmental, social and economic impacts and identified instrumental mitigation measures for the minimising adverse impacts.

Figure 6: Public Notice in Onheleiwa Village

6.5. Concerns, Comments and other issues

In general, the proposed project development idea was well received by the community and their concerns were mainly related to employment opportunities, environment and the pre-conditions agreed upon by the project proponent and Oukwanyama Traditional Authority. Below is the summary of the issues, concerns and comments that rose during public consultation process.

Notably the proposed project site is of paramount importance since it will benefit the village home to the current president of the Republic of Namibia that is within the same village. One can justify that in the event of gatherings and commemorations at the president's home village there is a needy for strong network coverage.

Table 4: Public participation environmental related inputs register

STAKEHOLDER'S NAME AND POSITION HELD	COMMENTS OR CONCERN
MR Erasmus Ndaitwa (Vice head and affected member)	He is even happy to have such a development at the door step
Nghivuete Valima Naugula (neighbour to the project site	He is happy since the project will bring forth employment opportunities and plead for employment of local residents where possible
Andrew Nghiwete (headman)	He approved the project and wish the establishment be quick to address network problems around the village
Other Onheleiwa village members (Please refer to Appendix C for questionnaires completed by different members of the village chosen at a random sampling	The project implementation will improve network coverage in the village and they want to be given first priority when it comes to employment during project implementation.

6.6. Site Boundary and accessibility

The proponent was encouraged to respect the community decisions through the traditional leadership, furthermore the community also urged the proponent to respect people's property such as lost cattle, goats and sheep into his boundary because they will be grazing and they are

a source of survival for the villagers hence there is no need for poisoning or shooting stray animals.

6.7. Employment

The local residents urged that where possible and necessary the proponent should employ locals particularly for manual work and prioritize qualified locals for skilled jobs too. Gender balanced recruitment was also one of the concerns by female attendants.

6.8 Culture and conflict resolution

Village elders and village leadership expressed the needy to solve and co-operate cordially any time differences arose between the personnel on site, visitors and the villagers in Onheleiwa Village. Therefore, they stressed that the proponent should consult the leadership whenever he encounters challenges. Also, if any conflict arises between him and the villagers, both parties should dialogue to manage and solve the conflict.

6.9. Project implementation and support

The community expressed that they support the project implementation and recommend that the project should carry on. They even expressed their ambitiousness to see the project running with the shortest time possible. The community will expect new developments the area due to improved network coverage. They all concurred to support in one way or another.

6.10. Conclusion

Basing on experience of the EIA team, the public consultation and local community involvement in gathering information and views of interested and affected parties, this application was done concurring to the manner prescribed in the EMA Act of 2007: Part (ii) Sub section 2 (c). The public inputs were used for EMP drafting as well.

5. CHAPTER SEVEN: ENVIRONMENTAL AND SOCIO-ECONOMIC IMPACTS

7.1. Identification of Potential Impacts

The proposed activities are usually associated with potential positive and negative impacts. For an environmental assessment, the focus is mainly placed on the negative impacts. This is done to ensure that these impacts are addressed by providing adequate mitigation measures such that an impact's significance is brought under control, while maximizing the positive impacts of the project to promote sustainable development and environmental and social protection. The potential positive and negative impacts that have been identified are listed as follow:

Positive impacts:

- **Telecommunications convenience:** Current and future residents (mobile users) will have an improved infrastructure and will not have to struggle with network coverage.
- **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 neighbors to the site.
- **Visual impact:** The presence of the tower in the neighborhood 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 5 below. The recommended mitigation measures prescribed for each of the potential impacts (as captured in the ESMP) 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 5: 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 at a later time or wider area
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 6: 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

Table 7: 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 construction
	Soil	Erosion	Construction	Moderate	Small	Local	Direct	Low <25%	Minor	Tower construction
LAND CAPABILITY	Terrestrial ecology	Change in land use	Construction and Operations	Permanent	Great	Local	Direct	Low <25%	Moderate	Tower construction
	Carrying capacity	Increase in human activities in the environment	Construction and Operations	Moderate	Moderate	Regional	Direct	Low <25%	Minor	Tower construction
WATER	Surface water quality	Water pollution from potential oils, lubricants and chemicals spillages.	Construction and Operations	Moderate	Small	Local	Direct	Medium 25 - 75%	Moderate	Construction hydrocarbons
AIR QUALITY	Air Quality	Construction phase dust	Construction	Short	Small	Local	Direct	Low <25%	Minor	Tower construction
WASTE	Groundwater quality	Hazardous waste such as waste	Construction and Operations	Short	Small	Local	Direct	Low <25%	Minor	Tower construction

Environmental Impact	Valued Ecosystem Component	Impact	Project Phase	Duration	Magnitude	Extent	Type	Probability	Significance	Infrastructure/ Activity
		lubricants and stored chemicals may be release into the environment.								
	Surface water quality	Threatened from chemicals being washed into nearby water bodies	Construction and operations	Moderate	Moderate	Regional	Direct	Medium 25 - 75%	Moderate	Tower construction
	Surface water quality	Construction and Operational solid waste	Construction and operations	Moderate	Moderate	Regional	Direct	Medium 25 - 75%	Moderate	Tower 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 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 construction
SOCIAL	Noise Pollution	Increased noise levels	Construction	Moderate	Small	Local	Direct	Low <25%	Minor	Tower construction
	Socio Economic Activities	Temporary and permanent employment prospects.	Construction and operations	Long	Moderate	Regional	Direct	Medium 25 – 75%	Positive	Tower construction
	Socio Economic Activities	Climate change impacts	Operations	Long	Moderate	Regional / National	Direct	High >75%	Positive	Tower construction

Environmental Impact	Valued Ecosystem Component	Impact	Project Phase	Duration	Magnitude	Extent	Type	Probability	Significance	Infrastructure/ Activity
	Contribution to National Economy	Employment, local procurement, duties and taxes.	Construction and Operations	Short	None	Regional / National	Direct	Low <25%	Positive	Tower construction
HERITAGE	Artefacts, archaeological high value components	Destruction or affecting paleontological and archaeological artefacts	Construction and Operation	Moderate	Small	Local	Direct	Low <25%	Minor	Tower construction
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 construction
	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 and maintenance
	Natural Environment	Spillage/ release of chemicals into the environment	Operation	Moderate	Great	Local	Direct	Medium 25 – 75%	Major	Tower maintenance
	Humans, Vegetation, Animals	Potential impacts from non-ionizing radiation	Operation	Moderate	Small	Local	Direct	Low <25%	Minor	Tower maintenance

Environmental Impact	Valued Ecosystem Component	Impact	Project Phase	Duration	Magnitude	Extent	Type	Probability	Significance	Infrastructure/ Activity
		propagated by masts.								
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

7.3. CONCLUSION AND RECOMMENDATIONS

7.3.1. Recommendations

Arising from the analysis by the consultants, the proposed project is going to create permanent land cover/use change on the proposed project site**.** Sustainable development must be promoted in all aspects relating to the environment. The EMAct 2007 is flexible to opt out that developmental projects which can provides the most benefit or causes the least damage to the Environment as a whole, at a cost acceptable to society, in the long term as well as in the short term must be adopted to reduce the generation of waste and polluting substances at source. The reduction, re-use and recycling of waste must be promoted; since generation of waste during all the phases of the project.

The proponent should therefore avoid unnecessary vegetation clearing on the surrounding places especially during construction phase, which may lead to loss of habitat for mostly birds. It is important that the proponent observe and maintain accountability to both socio-economically and environmentally sensitive activities from the project, such that the project is harmonized with policy, regulations, administrative frameworks and social interface with the public as proposed in the environmental management plan. Failure to observe these measures will significantly affect the local environment and lead to non-compliance. Therefore, implementation environmental protection measures should be executed in consultation with the Key stakeholders.

7.3.2. Conclusion

The proposed project design and implementation can be justified as one of the economic drivers. The EC highly recommends the approval of the proposed project and site provided the proponent remain compliant to the conditions of ECC to be issued.

6. REFERENCE

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7. Appendix A: Environmental Management Plan

8. Appendix B: Maps, Designs and Layout plans

9. Appendix C: Public and Stakeholder consultations evidence

10. Appendix D: Lead EAP CV