

ENVIRONMENTAL SCOPING REPORT: THE PROPOSED ERECTION OF A TELECOMMUNICATION BASE TRANSCEIVER STATION(BTS) AT OMATANDO VILLAGE IN ONGWEDIVA, OSHANA REGION-NAMIBIA.



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D&P ENGINEERS
AND ENVIRONMENTAL CONSULTANTS
"Purpose with Passion"



PowerCom
(PTY) LTD

**THE PROPOSED ERECTION OF A TELECOMMUNICATION BASE
TRANSCIVER STATION(BTS) AT OMATANDO VILLAGE IN
ONGWEDIVA, OSHANA REGION-NAMIBIA.**

Environmental Scoping Report (ESR)

**Environmental Scoping Report Prepared for
Powercom (Pty) Ltd**

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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 on the Scope of Work delineated by Powercom Pty Ltd for the proposed construction and operation of the Omatando Village telecommunication tower. 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 by the Directorate of Environmental Affairs EIA guidelines in order 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 not considered.

The detailed assessment of the anticipated impacts was undertaken with the purpose of highlighting any areas of concern regarding to the proposed project during its construction, and operation. In addition, an independent sensitivity mapping analysis was undertaken. This analysis characterised the development site on the significant environmental aspects in order to reflect the sites suitable and unsuitable (no-go) development footprint areas. This action guided the final footprint of the proposed 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 base transceiver station tower (BTS);
- Undertake a detailed environmental assessment, in terms of environmental criteria and impacts (direct, indirect and cumulative), and recommend a preferred location for the proposed plant (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: BACKGROUND

1.1. Introduction

Powercom (PTY) LTD as subsidiary of Telecom Namibia herein referred to as the proponent has been approached by Telecom to rollout telecommunication towers on areas that are not connected to mobile network. In this respect Powercom identified several sites across the country, and Omatando in Ongwediva is one of the identified sites that require improved telecommunication connectivity.

In terms of the Namibian environmental legislation (Environmental Management Act (No. 7 of 2007)) and the Environmental Assessment Regulations of 2012; an EIA is required to obtain an Environmental Clearance Certificate from the Ministry of Environment and Tourism (MET) before the construction and operation of the proposed tower development project can proceed.

Furthermore, as per the requirements of the Environmental Management Act No. 7 of 2007, Powercom has appointed D&P Engineers and Environmental Consultants (DPEE) to conduct an Environmental Assessment (EA) and develop an Environmental Management Plan (EMP) for the proposed Base Transceiver Station (BTS) tower. This has been followed by an application for Environmental Clearance Certificate (ECC) to the Ministry of Environment and Tourism (MET): Directorate of Environmental Affairs (DEA).

In this respect, this document forms part of the application to be made to the DEA's office for an Environmental Clearance certificate for the proposed telecommunication tower at Omatando Village, in accordance with the guidelines and statutes of the Environmental Management Act No.7 of 2007 and the environmental impacts regulations (GN 30 in GG 4878 of 6 February 2012)

1.2. Project Location

The proposed telecommunication tower is to be erected at Omatando location (opposite the Ongwediva sub-station) in Ongwediva, Oshana Region-Namibia. The site coordinates are as follows:

S 17.75083, E 15.7475.

Figure 1 gives the locality of the project area, showing the surrounding environs and land uses.



Figure 1: Proposed Project Site.

1.3. Project Overview

TELECOM Namibia's information and technology infrastructure development subsidiary, Powercom (Pty) Ltd is on a drive of construction network towers across the country. Powercom targets that, other than improving internet and voice connectivity in the regions, there is also a need to increase the company's footprint and asset base to best service ICT stakeholders and offer better connectivity in all regions of the country.

Powercom aims at providing different telecommunication service providers in Namibia with ready to use infrastructure as well as expand TN Mobile’s network coverage into the different areas where there is weak or no network connectivity at all.

Behind this backdrop, Powercom Pty Ltd intends to install a telecommunication tower at Omatando Village in Ongwediva. The development will include the following:

- The construction of a Base transceiver station tower with a footprint size of a 20m x 20m area, 30m height.
- A support container room.
- The site is to accommodate TN Mobile service and other service providers

The structure will be fenced to limit public access to it. The base station will be a secured building and sufficient precaution will be made to prevent access to the antenna support structure. Access to the area will be strictly controlled through a locked gate as illustrated below;

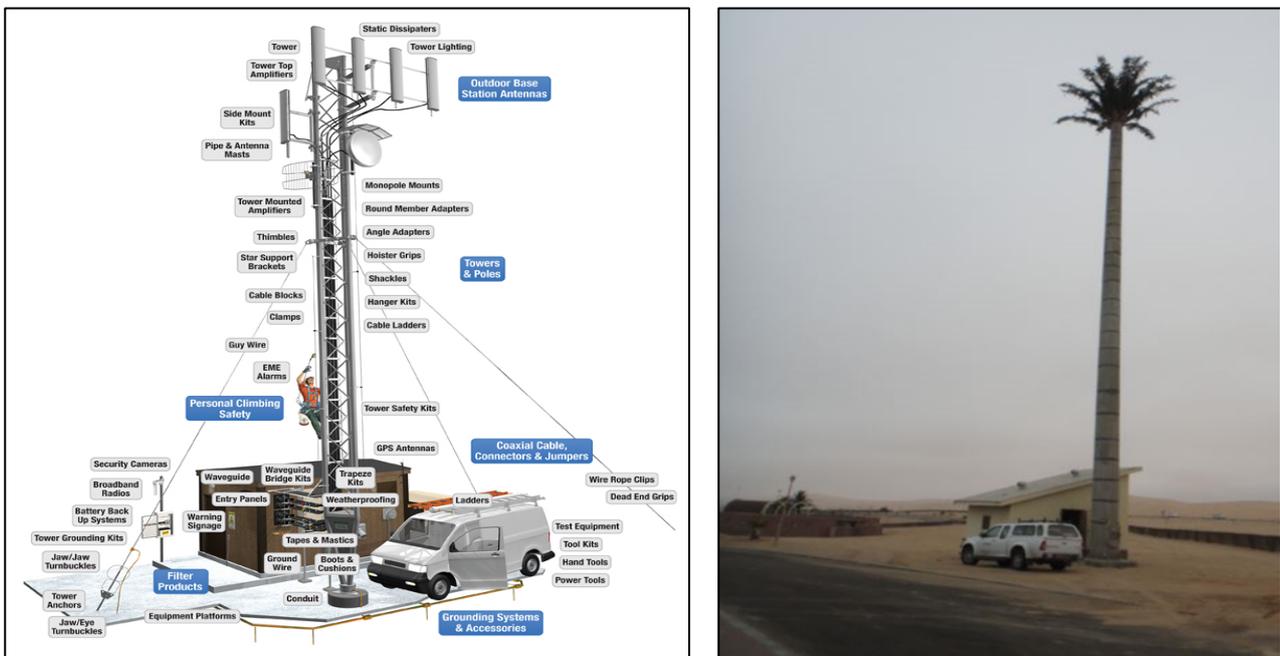


Figure 2: Typical Telecommunication tower (Left) Proposed tower (right).

The proposed telecommunication tower is designed to blend into the project area, through installation of a Palm tree tower. This is aimed to also minimize visual aesthetics impacts and the design is below below:

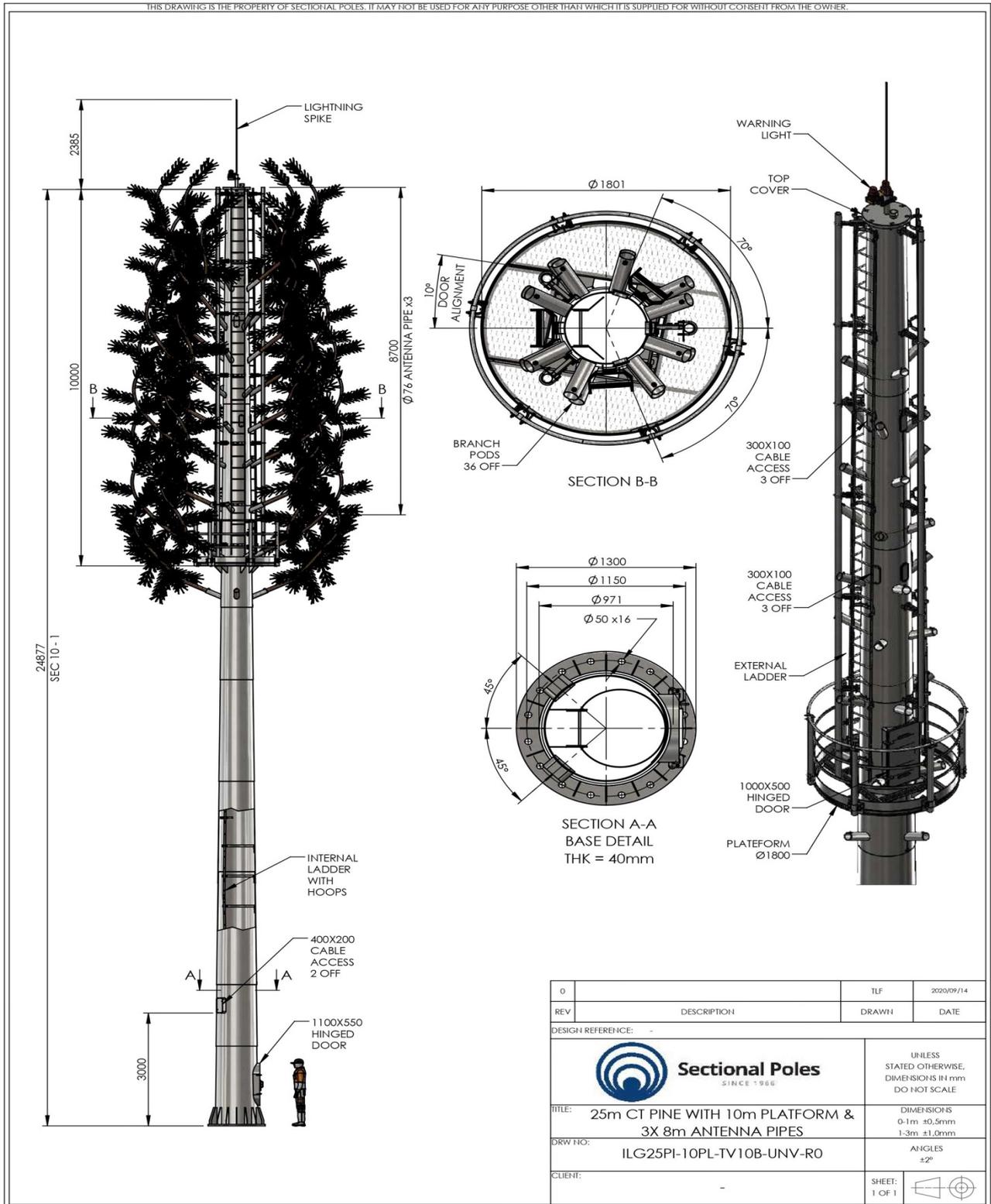


Figure 3: Proposed Palm tree design tower

1.3.1. Accessibility

The site is easily accessible from the Ongwediva-Okatana road that is in existence.

1.3.2. Infrastructure and Services

Water: Water for construction will be supplied by Ongwediva Town Council.

Ablution: Construction ablution will use temporary toilets.

Electricity: There is an existing electricity line in proximity to the project area.

Communication: The proposed project will provide for communication in the area.

1.4. The project Environs

The proposed infrastructure will have minimal impacts on the natural resources, i.e., water, fauna and flora.

The project site is located within Omatando location in Ongwediva, on an area with trees and there is evidence of human encroachment and utilisation of the project site.

All affected stakeholders near the project area were notified of the development and comments were solicited for.



Figure 4: The project area is in proximity to the Ongwediva to Okatana Road that is currently under upgrade.

-Project area has been affected by construction activities

-There are nearby residential and business even that will benefit from the project.



Figure 5: Nearby 11KV Powerline

-There is an existing 11kv powerline and a transformer that is supplying the new housing developments around Omatando area.

-Across the project area, to the North-East, there is a NORED substation that is supplying Ongwediva with electricity.

1.5. Need and Desirability

The economic and social development goals of Namibia are embodied in (i) Vision 2030 and (ii) the National Development Plan 5 (NDP 5) 2017/2018 – 2021/2022 as well as NDPs 1, 2, 3, and 4. In addition, the Government has developed the Harambee Prosperity Plan (HPP) 2016/2017 – 2019/2020, which complements the Vision 2030 and NDP 5. All of the three plans set the goals, targets, and strategy for Namibia to move on a path to economic prosperity through a concerted strategy for the development of Namibia's economic growth. These Plans also include specific growth targets milestones and strategies for the sustainable deployment of Namibia's resources to achieve the stated economic and social development goals. Communication is one of the major targets aimed in the NDP5 and to stimulate development of any aspect, internet and voice connectivity is a pre-requisite.

This project, is a major step in addressing the objectives of the developmental plans and targets of the Namibian government and the development will ensure that there is connectivity for within the Omatando area, especially given that there are new extensions being constructed in the area.

1.6. Project Alternatives

1.6.1. Site Location Alternatives

An integrated site selection study was done in order to identify a suitable site for the proposed tower. The proposed site is considered highly desirable due to the following considerations:

- Elevation: The project location is strategic because it can allow the covering of a wider radius within the area
- Land suitability:

-The site is easily accessible by road and near electrical connection to power the tower components. **It is thus, the consideration of the above criteria resulted in the selection of the preferred site. No further site location alternatives are considered in the EIA process.**

1.6.2. Tower Infrastructure Alternatives

There are several types of telecommunication towers designs and form. In this respect, to cater for a 30m height so as to cover further into surrounding locations, the proponent will invest in a palm tree tower that also caters for green and sustainable development and minimising visual intrusion in the surrounding environs.

1.6.3. Conclusion

Based on the preceding alternative analysis and options, the project will go ahead and will ensure maximum environmental and safety performance systems are in place

2. CHAPTER TWO: POLICY, LEGAL AND ADMINISTRATIVE FRAMEWORK

2.1. Introduction

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 to; the focus is on the 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 1:Policies, legal and Administrative regulations

LEGISLATION/POLICY/GUIDING DOCUMENT	PROVISION	PROJECT IMPLICATION
The Constitution of the Republic of Namibia (1990)	<p>The articles 91(c) and 95(i) commits the state to actively promote and sustain environmental welfare of the nation by formulating and institutionalizing policies to accomplish the sustainable objectives which include:</p> <ul style="list-style-type: none"> - Guarding against overutilization of biological natural resources, - Limiting over-exploitation of non-renewable resources, - Ensuring ecosystem functionality, - Maintain biological diversity. 	<p>-Through implementation of the environmental management plan, the proposed development will be in conformant to the constitution in terms of environmental management and sustainability, through bringing development in an environmentally sensitive way.</p>
Vision 2030 and National Development Plans	<p>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.</p>	<p>-The proposed project is an important element in the propelling and connectivity in the country.</p>
Environmental Assessment Policy of Namibia 1994	<p>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.</p>	<p>-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.</p>

<p>Environmental Management Act No. 07 of 2007</p>	<p>The Act aims at</p> <ul style="list-style-type: none"> ▪ 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. 	<p>-This document is compiled in a nature that project implementation is in line with the objectives of the EMA. EIA guiding procedures developed by MET were also used in the course of this project.</p>
<p>Electricity Act 4 of 2007</p>	<ul style="list-style-type: none"> ▪ 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. 	<p>-Obliges Powercom to comply with all relevant provisions of the EMA and its regulations when installing electrical connections to the tower.</p>
<p>The Atomic Energy and Radiation Protection Act, Act 5 of 2005:</p>	<p>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.</p>	<p>- Cell phone towers operate at a higher power level than cell phones but the radio frequency EMF they emit is much further away from your body. This means exposure from such antennas is usually much lower than exposure level from using a cell phone., hence impacts on non-ionizing radiation are minimal.</p>

		Installation of the network transmitter will be done in accordance to safety protocols required for non-ionizing radiation protection as regulated by the Namibia radiation protection Authority.
“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.	- The BTS and other antenna installations are anticipated to have non-ionizing radiation frequency and this will not pose threat to nearby residents and the natural environment.
Soil Conservation Act 76 of 1969	The objectives of this Act are to: <ul style="list-style-type: none"> ✓ 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 on the soil through clearance for tower platform. Soil protection measures will be employed and preservation of trees as much as possible.
Nature Conservation Ordinance 1996	To consolidate and amend the laws relating to the conservation of nature; the establishment of game parks and nature reserves; the control of problem animals; and to provide for matters incidental thereto.	The proposed project implementation is located within Ongwediva town, in Omatando Village and there are no identified environmental sensitivities in proximity to the proposed project site. The project site was selected with this ordinance in mind to ensure that Namibian nature is conserved.

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 a few trees and a few will be removed to pave way for development. Permit to remove these trees will be given by the Directorate of Forestry.
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 ecosystems 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 are no existing wetlands/peatlands within 5km 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 Ongwediva Town Council.
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 older 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	<p>“No person shall destroy, damage, excavate, alter, remove from its original site or export from Namibia:</p> <p>(a) any meteorite or fossil; or</p> <p>(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</p> <p>(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</p> <p>(d) the anthropological or archaeological contents of graves, caves, rock shelters, middens, shell mounds or other sites used by such people; or</p> <p>(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.</p>	-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,	-To control air, water and land pollution as agitated by the Act the project proponent will ensure that the

	<p>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.”</p> <p>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.”</p>	<p>development will prevent pollution in all forms during construction and operation phases.</p>
<p>Communications Act, 2009 (Act No. 8 of 2009)</p>	<ul style="list-style-type: none"> ✓ (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; ✓ 	<p>-As a pre requisite, telecommunication towers would require environmental clearance certificates and, in this respect, Powercom authorised this EIA to obtain such.</p> <p>-Powercom has to date registered with Communications Regulatory Authority (CRAN).</p>
<p>Communication Bill 2009</p>	<ul style="list-style-type: none"> ✓ 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. 	<p>-As per relevant spectrum, network equipment should be as per licenses.</p>
<p>Convention on Biological Diversity (CBD)</p>	<ul style="list-style-type: none"> ✓ Namibia is a signatory of the Convention on Biological Diversity and thus is obliged to conserve its biodiversity. 	<p>The project will preserve tree species on as part of their plans for greed and sustainable development.</p>
<p>United Nations Convection to combat Desertification</p>	<p>Namibia is bound to prevent excessive land degradation that may threaten livelihoods.</p>	<p>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.</p>

3. CHAPTER THREE: RECEIVING ENVIRONMENT

3.1. Introduction

In this chapter, the findings of the EIA Team on baseline surveys, public consultation and desk reviews undertaken are in respect to the ecology, society, economy and geo-political set up of the proposed project area. The geological make up 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.

3.2. Socio-Economic status

The proposed project site is located in Omatando Village in Ongwediva Town of Oshana Region. Ongwediva is an urban area that experiences rapid growth in terms of population, development and status. The residents in Ongwediva rely on few businesses operating in the town as well as mahangu farming in the nearby communal areas. The majority of the surrounding land are characterized by small or medium scale business or commercial activities. Therefore, the proposed project will not alter the sense of place, however the project will come with improved connectivity within Omatando location and its surrounding areas. Positive impacts associated with the project will be in the form of additional job opportunities during construction as well as in operation. The community will also benefit from skills and technology transfer. The spending power of locals is likely to increase because of employment during the construction and operational phase. The construction impacts will be minimum if mitigated by the Environmental Management Plan.

3.3. Climate

The climatic condition of the northern central of Namibia is described as semi-arid to sub-humid with the rainfall confined mainly in summer months (November-March). The area receives a significantly greater amount of precipitation, averaging around 400 mm (15.7 in) per year. The rainfall pattern is highly variable in amount and distribution. The wet and dry spells are thus a normal climatic feature of this environment and it has been persistent for millions of years. Temperatures are also cooler and more moderate, with approximate seasonal variations of between 10 and 30 °C (Kangombe, 2010).

3.4. Fauna ad Flora

In North of Namibia the vegetation is classified as Savannah bush and comprises a number of Acacia species and numerous species of perennial thorn trees in the bushes and shrubs and grass on the flat slopes (Lawrence, 1971). According to Giess (1971), savanna bush vegetation type, is mainly characterised by trees such as Combretum apiculatum and Acacia species (such as Acacia reficiens, A. hereroensis, and A. erubenscens). The grass in this vegetation type mainly comprises of the climax grasses such as Anthephora pubescens, Brachiaria nigropedata, Digitaria eriantha and many other species.

The project site is showing evidence of human inference namely informal tracks. The site is also surrounded by trees which will be removed for the construction and operational phases. The removal of any vegetation if need be will be done within a properly managed, planned and responsible manner to avoid the destruction of unnecessary ground cover or protected species.

Ongwediva area is dominated by human inhabitants which resulted in movement of wild animals away from the area. The EIA team researched and established that around the proposed project has minimum number of wildlife. This could mostly be the case due the presence inhabitants and economic activities that possibly scared away wildlife. Some form of human encroachment in the area may also have contributed to low number of wildlife due to lost and fragmented habitats. Only evidence of the presence of birds, squirrels and soil rodents, termites were observed.



Figure 6: Project locality with trees

The site is sparsely vegetated due to human encroachment and general make-up of the local ecology.

Informal access paths cutting through the area can be observed on site, indicating extensive human encroachment in the project areas



Figure 7: Current land use impacts

The surrounding landowners are using the proposed project site as a solid waste disposal area. This is because an open piece of land lying idle will end up being used for the unapproved purposes. In this respect, the illegal dumping will be controlled through this development.



Figure 8: Existing developments

Currently, the site has nearby housing developments that are on-going and houses which are already in existence for a long time. However, these developments already posed some expend of environmental impacts to the surrounding vegetation as shown on Figure 8.

3.5. Avian Impacts

One of the most crucial aspects of this EIAR, is in relation to avifauna in the project environment because of the tower and electricity line may potentially affect avifauna. Power lines, pylons and towers worldwide kill thousands of birds each year (Bevanger 1998, Lehman et al. 2007) either by electrocution or by direct collision. However, direct observation and literature revealed that the project area is developed and possibility of wild birds being affected by the tower and powerline is highly unlikely.

The proposed tower is not in proximity to any airport/airstrip, hence impacts on avian transport is highly unlikely. However, to ensure that the airspace is not affected, consultation with Namibia Civil Aviation Authority (NCAA). The nearest airport to the project site is located in Ondangwa.

3.6. Hydrology

The project area is not sited within a significant surface water zone nor will it disturb the nearby surface water source.

The proposed project will have little or no significant impact to general area hydrological drainage, and thus the project will have a relatively low impact on surface water hydrology.

3.7. Pedology & Geology

Ongwediva located in the greater Kalahari Basin, which covers most of the northern and eastern parts of Namibia and extends across the Namibian border into Angola. The bedrock underlying the basin filled with Kalahari Group deposits consist of basal rocks of the Damara Sequence, followed by the Karoo Sequence sediments, overlain and intruded by volcanics of Karoo age. The unconsolidated to semi-consolidated clay, sand and gravel of the Kalahari Group fill the Omusati Region, which deepens from the northeast towards the northwest, from 0 to >400 m along the north-west trending basin axis. The proposed project will likely cause temporary localised soil disturbances during construction.

3.8. Topography

The greater area of the project site is flat and the location will allow for the transmission of network to further areas. Pollution prevention and stormwater control should be implemented.

4. CHAPTER FOUR: 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 documented below.

4.1. Printed Media

4.1.1. 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 meeting and electronic mail; see Appendix B of this document.



4.1.2. Newspaper Advertisements & Articles

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



4.1.3. Site Notices

A site notice was placed at the project site and Ongwediva Town Council notice board. These provided information about the project and related EA while providing contact details of the project team.

4.1.4. Building a Stakeholder Database

A stakeholder database for the project collected through a variety of means. During the advertisement of the project (through public notices in local newspapers and site-notices) the list

was augmented as Interested & Affected Parties (I&AP) registered and contact information of stakeholders updated, Please refer to Appendix A.

4.1.5. Stakeholder Meetings & Key Conversations

A public meeting was scheduled on Saturday, 09 October 2021 in Omatando, Ongwediva. However, the meeting was not well attended because there are no directly affected landowners. However, to ensure adequate consultation, consultant administered questionnaires through door to door consultation for all surrounding residents to ensure that adequate consultation was conducted.



Figure 9: A public meeting was not well attended, but door to door consultation was conducted.

4.1.6. 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 have registered and provided comments. All of the immediate neighbours are in support of the initiative due to the network problems in the area. The Scoping Report and Environmental Management Plan was made available to the public and stakeholders for comment and review.

Questionnaires and proof of stakeholder’s engagement are attached in appendix A of this EAR.

5. CHAPTER FIVE: ENVIRONMENTAL AND SOCIO-ECONOMIC IMPACTS

5.1. Overview

Powercom has committed to sustainability and environmental compliance through coming up with a corrective action plan for all anticipated environmental impacts associated with the project. This is also in line with the Namibian Environmental Management legislation and International best practices on telecommunication infrastructure. The proponent will implement an Environmental Management Plan (EMP) in order to prevent, minimise and mitigate negative impacts. The environmental management plan is being developed to address all the identified expected impacts, the plan will be monitored and updated on a continuous basis with aim for continuous improvement to addressing impacts.

5.2. Assessment Of Impacts

This section sets out the overall approach that was adopted to assess the potential environmental and social impacts associated with the project. To fully understand the significance of each of the potential impacts each impact must be evaluated and assessed. The definitions and explanations for each criterion are set out below in Table 2: Assessment Criteria and Table:3 Impact significance.

Table 2: 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%

(Adopted from ECC-Namiba, 2017)

Table 3: Impact 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

(Adopted from ECC-Namiba, 2017)

Table 4: 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	Soil	Contamination to soil from paints and other potentially hazardous substances	Construction and Operations	Moderate	Small	Local	Direct	Low <25%	Minor	Tower
	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 oils, lubricants and chemicals spillages.	Construction and Operations	Moderate	Small	Local	Direct	Medium 25 - 75%	Moderate	Construction hydrocarbons
	Surface water quality	Turbidity and high sediment load	Construction	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
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 rivers	Construction and operations	Moderate	Moderate	Regional	Direct	Medium 25 - 75%	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

Environmental Impact	Valued Ecosystem Component	Impact	Project Phase	Duration	Magnitude	Extent	Type	Probability	Significance	Infrastructure / Activity
										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; fence and powerline mortalities)	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
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, veldt fires and power surges.	Construction and Operation	Moderate	Great	Local	Direct	Medium 25 – 75%	Major	Warehouse
	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

Environmental Impact	Valued Ecosystem Component	Impact	Project Phase	Duration	Magnitude	Extent	Type	Probability	Significance	Infrastructure / Activity
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 road	Vehicular accidents	Construction and Operation	Moderate	Great	Local	Direct	Medium 25 – 75%	Major	Tower

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