ENVIRONMENTAL IMPACT ASSESSMENT FOR THE PROPOSED CONSTRUCTION AND OPERATION OF MONDESA EXTENSION 3 TELECOMMUNICATION BASE TRANSCEIVER STATION (BTS) TOWER: SWAKOPMUND-ERONGO REGION.

ENVIRONMENTAL SCOPING REPORT

DATE: FEBRUARY 2022

APP: 003418

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

PowerCom (PTY) LTD

Proposed Construction & Operation for The Proposed Construction and Operation of Mondesa Extension 3 Telecommunication Base Transceiver Station (BTS) Tower: Swakopmund-Erongo Region.

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. 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 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 base transceiver station 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 charcoal processing and packaging process;
- 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.

A systematic approach was adopted for the successful completion of the EIA in line with the regulated process. The diagram in Figure 1 below indicates the sequential process that will be followed for this study.

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 herein referred to as the proponent has identified different areas in Namibia that needs improved communication alternatives due to growth in population and economic activities. To achieve the objective of improved telecommunication connectivity, Powercom intends to establish telecommunication towers across the identified different locations. One of the identified areas that needs improved voice and data connectivity through the erection of a telecommunication mast is Mondesa Ext 3 in Swakopmund, Erongo Region-Namibia.

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 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 tower establishment. 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 Mondesa Ext 3, Swakopmund, 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 tower is to be erected on erf 1127 measuring approximately 1597 sited in Mondesa Ext 3. The project site is in proximity to Mondesa post Office and Africa view Guest House and accessed from 8th avenue.

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, the applicant, Powercom Pty Ltd intends to install a telecommunication tower in Mondesa Ext 3 suburb. The development will include the following:

- The construction of a 30m Palm tree tower within the footprint size of a 20m x 20m
- A storage and communication structure for equipment

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;

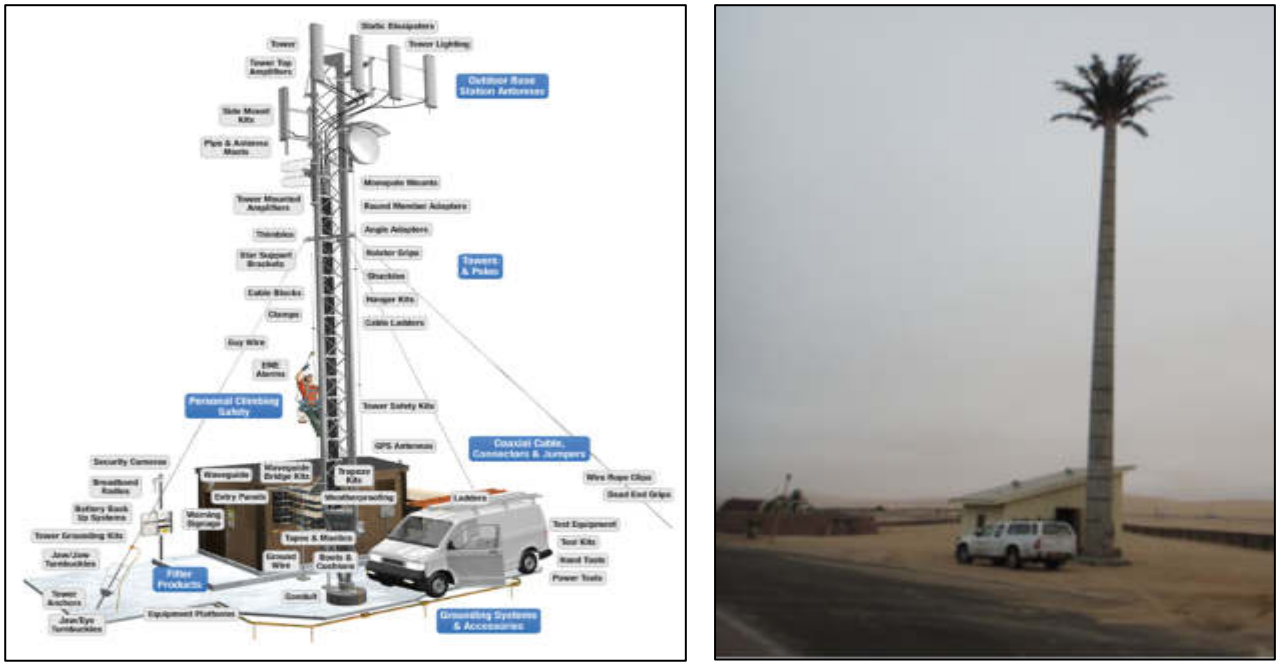

Figure 2: Typical Telecommunication tower (Left) Proposed tower (right).

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

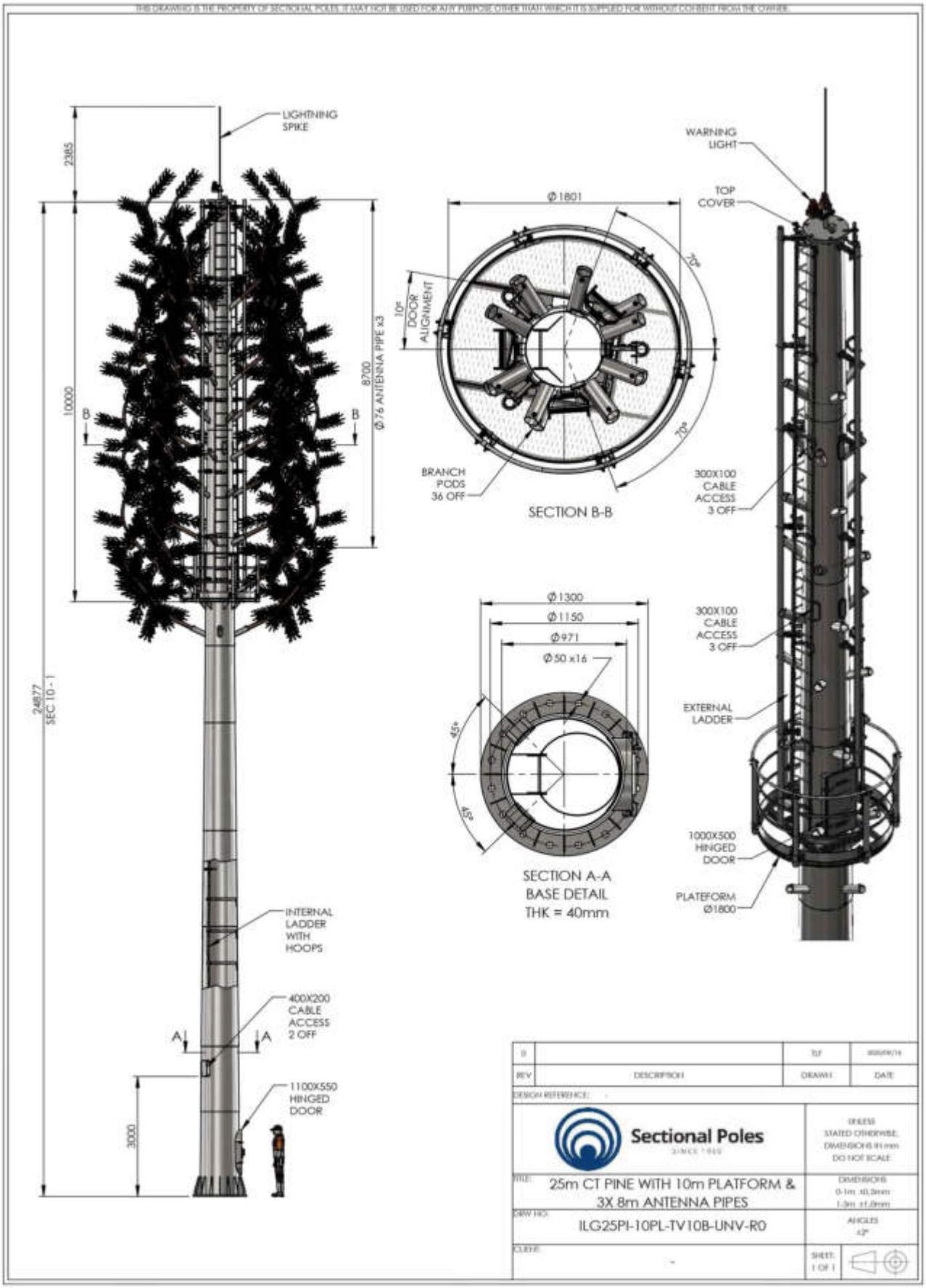

Figure 3: Proposed Palm tree design tower

1.3.1. Accessibility

The site is easily accessible from 5th avenue.

1.3.2. Infrastructure and Services

Water: There is an existing water connection on site, water is supplied by Swakopmund Municipality.
Ablution: There is a sewer reticulation system connected to the site
Electricity: There is an existing electricity connection on site
Communication: The site is connected with MTC, TN Mobile and satellite phones.

1.4. The project Environs

The project site is located on an open area that is currently undeveloped, and the municipality keeps its skip containers on site. Surrounding the erf are residential erven and the neighbouring land owners have been notified and consulted.

The site has in proximity an on-going development of a hospitality facility and the project owners are welcoming the project because of the current network challenges in Mondesa.

Figure 4: Current project area status (solid waste containers visible in sight)

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 the development of any aspect, internet and voice connectivity is a prerequisite.

This project is a major step in addressing the objectives of the developmental plans and targets of the Namibian government.

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 Mondesa Suburb.
- Land suitability:

The site is easily accessible by road and near an 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 farms and mines, 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)	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: - Guarding against overutilization of biological natural resources, - Limiting over-exploitation of non-renewable resources, - Ensuring ecosystem functionality, - Maintain biological diversity.	-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.
Vision 2030 and National Development Plans	Namibia's overall Development ambitions are articulated in the Nations Vision 2030. At the operational level, five-yearly national development plans (NDP's) are prepared in extensive consultations led by the National Planning Commission in the Office of the President. Currently the Government has so far launched a 4th NDP which pursues three overarching goals for the Namibian nation: high and sustained economic growth; increased income equality; and employment creation.	-The proposed project is an important element in the propelling and connectivity in the country.
Environmental Assessment Policy of Namibia 1994	The Environmental Assessment Policy of Namibia requires that all projects, policies, Programmes, and plans that have detrimental effect on the environment must be accompanied by an EIA. The policy provides a definition to the term "Environment" broadly interpreted to include biophysical, social, economic, cultural, historical and	-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.

	political components and provides reference to the inclusion of alternatives in all projects, policies, programmes and plans.	
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 MET were also used in the course of this project.
Electricity Act 4 of 2007	▪ Requires that any generation and or distribution complies with laws relating to health, safety and environmental standards (s 18(4)(b) ▪ In the event that exemption from acquiring a license is granted, the Minister may impose conditions relating to public health safety or the protection of the environment.	-Obliges Powercom to comply with all relevant provisions of the EMA and its regulations when installing electrical connections to the tower.
The Atomic Energy and Radiation Protection Act, Act 5 of 2005:	Provides for the adequate protection of the environment and of people against the harmful effects of radiation by controlling and regulating the production, processing, handling, use, holding, storage, transport and disposal of radiation sources and radioactive materials, and	- 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

	controlling and regulating prescribed non-ionising radiation sources according to the standards set out by the ICNIRP.	body. This means your exposure from such antennas is usually much lower than exposure level from using a cell phone. https://www.canada.ca/en/health-canada/services/health-risks-safety/radiation/everyday-things-emit-radiation/cell-phones-towers.html
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 licences with the relevant bodies highlighted thereto.
"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 exposure level from using a cell phone. https://www.canada.ca/en/health-canada/services/health-risks-safety/radiation/everyday-things-emit-radiation/cell-phones-towers.html

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 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 not located in any known or demarcated conservation area, national park or unique environments. 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 no vegetation and no trees will be removed.
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	-The project proponent has been advised by DPEE and recognises the need for ecosystems protection to manage the changing climatic environment.

	with ecosystems protection, biosafety, biosystematics protection on both terrestrial and aquatic systems.	-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 not have any interference with surface and groundwater sources during construction and operation, apart from water requirements for construction which will be supplied through Swakopmund municipality water reticulation system
National Heritage Act 27 of 2004	Heritage resources to be conserved in development.	-During the project implementation as soon as objects of cultural and heritage interests are observed such as graves, artefacts and any other object believed to be order than 50 years, all measures will be taken protect these objects until the National Heritage Council of Namibia have been informed, and approval to proceed with the operations granted accordingly by the Council.
National Monuments Act of Namibia (No. 28 of 1969) as amended until 1979	"No person shall destroy, damage, excavate, alter, remove from its original site or export from Namibia: (a) any meteorite or fossil; or (b) any drawing or painting on stone or a petroglyph known or commonly believed to have been	-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.

	executed by any people who inhabited or visited Namibia before the year 1900 AD; or (c) any implement, ornament or structure known or commonly believed to have been used as a mace, used or erected by people referred to in paragraph (b); or (d) the anthropological or archaeological contents of graves, caves, rock shelters, middens, shell mounds or other sites used by such people; or (e) any other archaeological or palaeontological finds, material or object; except under the authority of and in accordance with a permit issued under this section.	
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.
Communications Act, 2009 (Act No. 8 of 2009)	✓ (10) The Authority may impose specific obligations and requirements on a licensee regarding to masts, towers or other facilities including requirements relating to the ✓ environmental or aesthetic impact of such facilities;	-As a pre requisite, telecommunication towers would require environmental clearance certificates and, in this respect, Powercom authorised this EIA to obtain such.

Communication Bill 2009	✓ Provide for the regulation of telecommunication activities. The bill provides licencing and enforcement of conditions, and the approval or equipment and technical standards to ensure public health and safety.	-As per relevant spectrum, network equipment should be as per licenses.
Convention on Biological Diversity (CBD)	✓ Namibia is a signatory of the Convention on Biological Diversity and thus is obliged to conserve its biodiversity.	The project will preserve tree species on as part of their plans for greed and sustainable development.
United Nations Convection to combat Desertification	Namibia is bound to prevent excessive land degradation that may threaten livelihoods.	It will be the responsibility of the proponent to conserve vegetation on and around the area, to avoid encroachment of the desert environs in the area.

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 is located in Swakopmund, Erongo Region (Figure 1). Swakopmund has been identified as a key tourist attraction area with high potential economic opportunity for business as well as a growth point for the mining industry; as such good telecommunication service is of a high priority to ensure efficient and effective communication at all times. The selected site has existing telecommunication service, however there are insufficient infrastructure for the purposes of service providers sharing. In this respect, Powercom is erecting the tower to improve connectivity in Mondesa and other surrounding suburbs such as Oceanview and the CBD.

3.3. Climate

Classification of climate: Swakopmund features the very rare mild variation of the desert climate (BWk) according to the Köppen climate classification.
Average rainfall: Swakopmund lies in one of the driest areas in the country, receiving an average of 14mm of rainfall annually.
Temperature: During the hottest month of the year, which is mainly December, the average maximum temperature is about 18 °C. During July which is the coldest month the average minimum temperature is 4-6 °C.
Humidity: The relative humidity throughout the whole year in Swakopmund is well above 80%
Wind direction: Predominantly south westerly.

3.4. Fauna

The project site is located in an already developed piece of land surrounded by urban infrastructure, with no mammals in the area. The project does not have any direct impacts on mammals during construction and operation.

No endemic, threatened or rare fauna and flora species occur at the proposed area.

3.5. Avifauna

Namibia has about 658 species of birds (Barnard, 1998). In Swakopmund and Walvis Bay habit about 80 000 (winter) and 250 000 (summer) individual birds of 40-50 species in some places (Shaw et al. 2004).

Although Namibia‟s avifauna is comparatively sparse compared to the high rainfall equatorial areas elsewhere in Africa, approximately 658 species have already been recorded with a diverse and unique group of arid endemics (Brown et al. 1998, Maclean 1985). Fourteen species of birds are endemic or near endemic to Namibia with the majority of Namibian endemics occurring in the savannas (30%) of which ten species occur in a north-south belt of dry savannah in central Namibia (Brown et al. 1998). Bird diversity is viewed as medium in the Walvis Bay/Swakopmund area with 141-170 species (this would include migrant species) estimated with at least 1-3 species being endemic to the general area (Mendelsohn et al. 2000).

It is imperative to understand that, despite these trends the project location is away from the critically important bird areas such as the lagoon, hence the project will have minimal impacts on the bird environment in Swakopmund.

3.6. Flora

The project site is already developed and does not have any noticeable effect on the general desert vegetative environment.

Figure 5: Left-Access road to the site

Figure 6: Right-Overview of the project area from the North, current solid waste management strategy in place by placing a skip container.

Figure 7: Left-Residential flats boundary wall to the left, and residents were consulted.

Figure 8: Right- Southern side of the project site, bordered by a street with existing residential houses

3.7. Hydrology

The project area is not sited within a significant surface water zone. The study area lies within the most arid part of the country were the mean annual rainfall is less than 50mm per annum. However, due to the good geological setting as well as the presence of the alluvial aquifers in the Omaruru and Kuiseb Rivers that extend into high rainfall catchment areas, sufficient good quality groundwater is available for different land users in the coastal towns through the water supply scheme (InnoWind Draft Scoping Baseline Report, 2010), (Christian, 2006) and (Heyns et al, 2009) and (Ninham Shand Consulting Services, 2008).

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.

3.8. Pedology, Geology & Topography

The soils of the Namib Desert are formed by various processes, both mechanical and chemical. Soils along the coastal parameters have a high concentration of salts and hydrogen sulphide, which has

an influence on the fog and in return intensifies chemical processes and soil genesis. The proposed project will likely cause temporary localised soil disturbances during construction.

The greater area of the surroundings of the site has built infrastructure, hence the general topography has been greatly altered. The project area has already existing stormwater drainage that blends with the topography.

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 are 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 meetings 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 “New Era” newspapers, shown in Appendix B.

4.1.3. Site Notices

A site notice was placed at the project site and Swakopmund Municipality Notice Board. These provided information about the project and related EA while providing contact details of the project team.

Figure 9(top): Site Notice at Swakopmund Municipality Notice Board (community hall)

Figure 10 Notice at project site

4.1.4. Building a Stakeholder Database

A stakeholder database for the project was 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 B.

4.1.5. Stakeholder Meetings & Key Conversations

A public meeting was scheduled on 04 December 2021 however the meeting was poorly attended. However, the consultant ensured that the Municipality and all neighbours of the project site were adequately consulted. The consultant administered questionnaires door to door and on email through email to all members who attended the meeting as well as other members who were recommended by the public that they should be consulted.

Figure 11: Door to door consultation was conducted to ensure that all neighbours are fully consulted.

After the poor attendance of the public meeting, the consultant went on to consult individually the surrounding neighbours, and the municipality.

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 not in support of the initiative due to several reasons. 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 B of this EAR.

5. CHAPTER FIVE: ENVIRONMENTAL AND SOCIO-ECONOMIC IMPACTS

5.1. Overview

Powercom has committed to sustainability and environmental compliance by 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 the 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 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 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
	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 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 construction
	Surface water quality	Threatened from chemicals being washed into nearby rivers	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

Environmental Impact	Valued Ecosystem Component	Impact	Project Phase	Duration	Magnitude	Extent	Type	Probability	Significance	Infrastructure / Activity
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; fence and powerline mortalities)	Construction and Operations	Short	Small	Local	Direct	Low <25%	Minor	Tower and
SOCIAL	Noise Pollution	Increased noise levels	Construction	Moderate	Small	Local	Direct	Low <25%	Minor	Tower and
	Socio Economic Activities	Temporary and permanent employment prospects.	Construction and operations	Long	Moderate	Regional	Direct	Medium 25 – 75%	Positive	Tower and
	Socio Economic Activities	Climate change impacts	Operations	Long	Moderate	Regional / National	Direct	High >75%	Positive	Tower and
	Contribution to National Economy	Employment, local procurement, duties and taxes.	Construction and Operations	Short	None	Regional / National	Direct	Low <25%	Positive	Tower and
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
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
	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
	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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