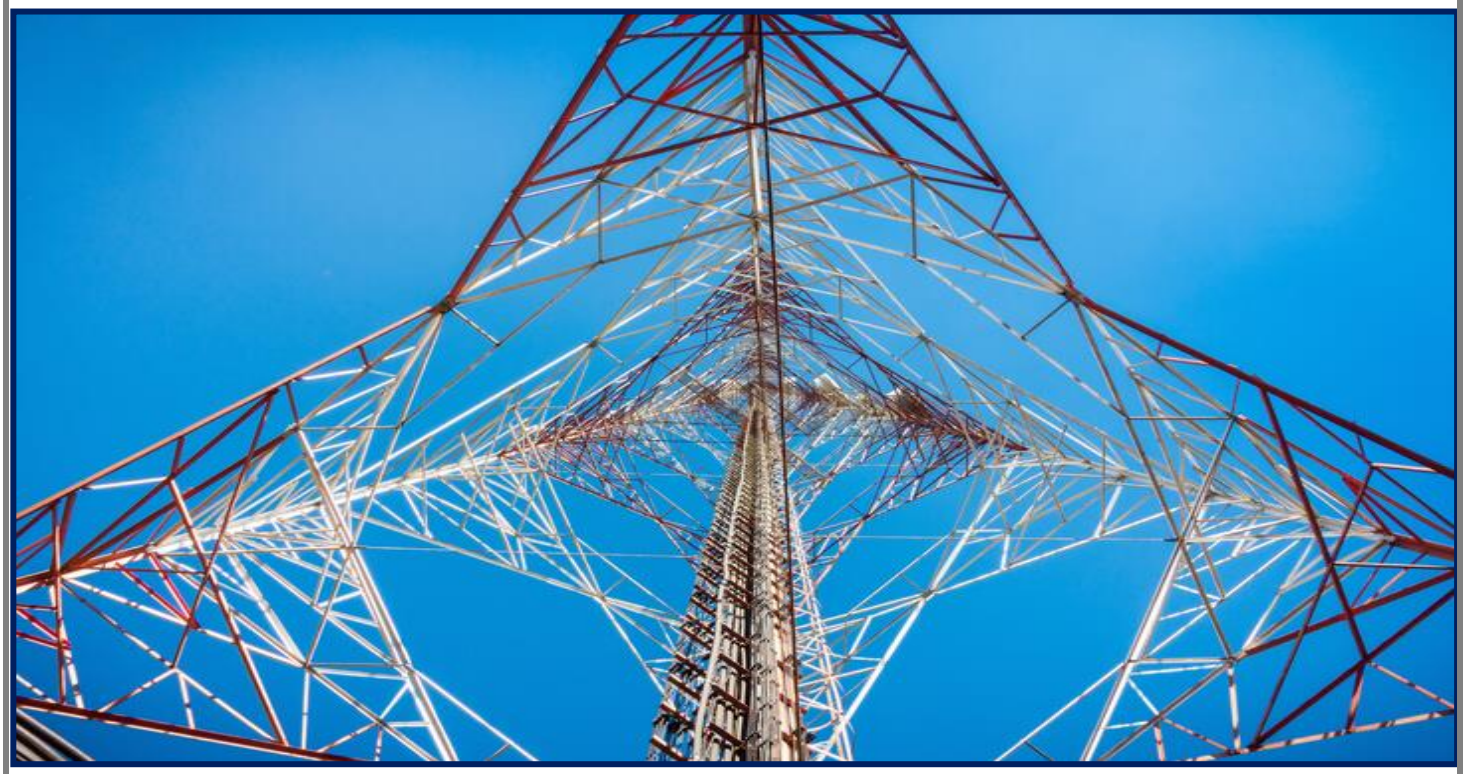
ENVIRONMENTAL IMPACT ASSESSMENT

FOR THE PROPOSED CONSTRUCTION AND OPERATION OF A TELECOMMUNICATION LATTICE TOWER AT VEDDERSDAL IN OKAHANDJA, OTJOZONDJUPA REGION-NAMIBIA.



ENVIRONMENTAL MANAGEMENT PLAN

FINAL

JUNE 2021

Prepared by: Junior Baiano Industrial Consultants cc
Postal Address: PO Box 23537, Windhoek
Contact Person: Fredrich Nghiyolwa
Contact number: +264 (61) 219 773
Cell: +264 (0) 81 1472029
Email: fredrich@jbic.com.na
JuniorB200581@gmail.com

Prepared for: Powercom (PTY) LTD
Postal Address: Powercom Head Office
Erf 1970 Robert Mugabe Avenue, Unit 2
Maerua Heights, Klein Windhoek
Phone: +264 (0) 61 201 2090
Email: info@powercom.na

Contents

List of Figures

List of Tables

Acronyms

TERMS	DEFINITION
BID	Background Information Document
EAP	Environmental Assessment Practitioners
ECC	Environmental Clearance Certificate
ECO	Environmental Control Officer
EIA	Environmental Impact Assessment
ESIA	Environmental and Social Impact Assessment
EMP	Environmental Management Plan
GHG	Greenhouse Gasses
ISO	International Organization for Standardization
I&Aps	Interested and Affected Parties
JBIC	Junior Baiano Industrial Consultants
MET: DEA	Ministry of Environment and Tourism's Directorate of Environmental Affairs

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 a telecommunication mast is Veddersdal in Okahandja.

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 JBIC 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 Veddersdal Telecommunication Lattice Tower, 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 project site is located in Veddersdal Suburb in Okahandja, Otjozondjupa Region-Namibia. The Locality Map Fig 1) gives a local layout view of the project site:

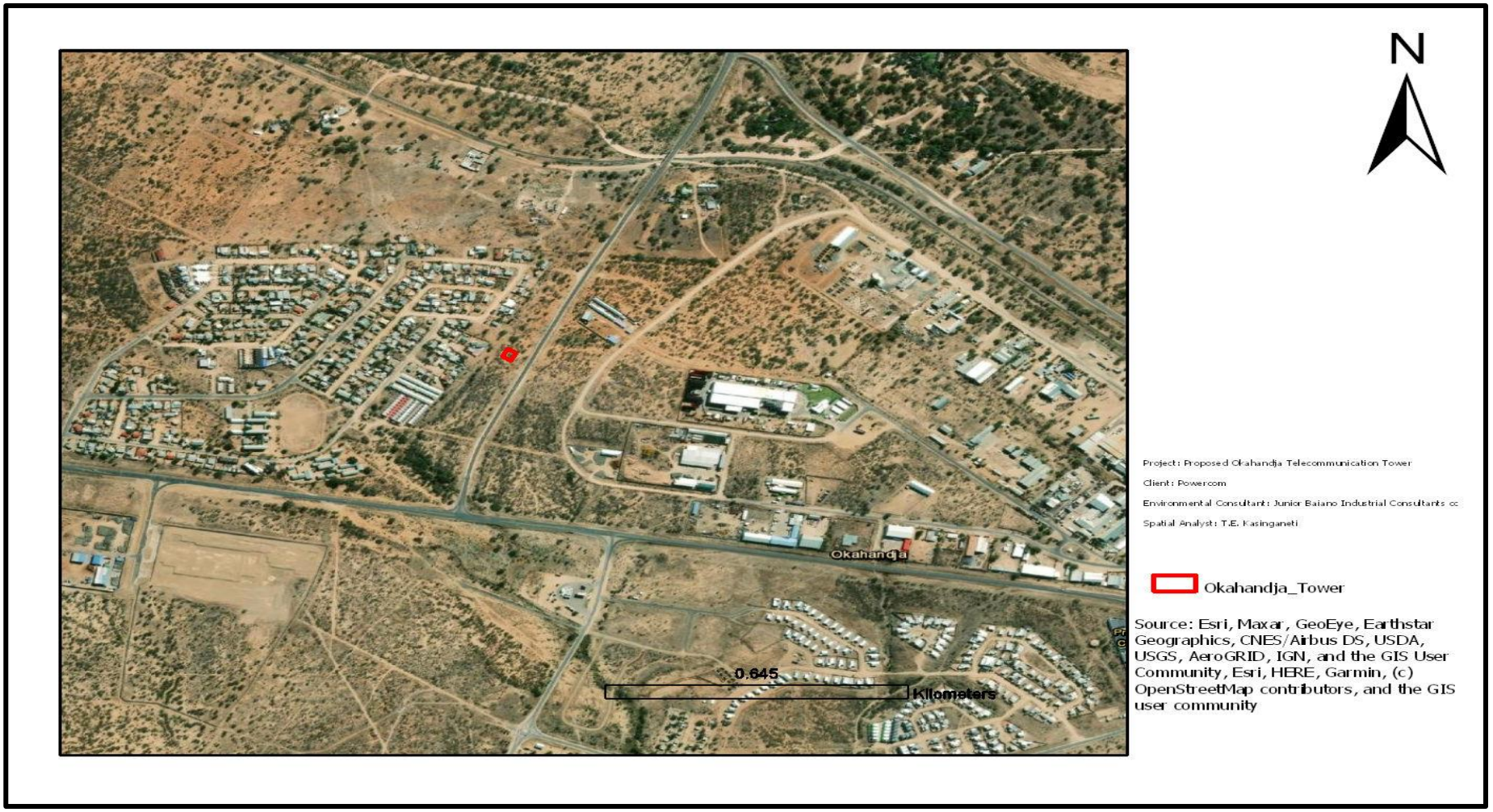


Figure 1: Proposed Project Site

1.3. PURPOSE OF THE ENVIRONMENTAL MANAGEMENT PLAN (EMP)

This EMP has been developed for the construction and operation of Veddersdal tower in Okahandja. It forms the operational framework within which the proposed project is to operate within. All anticipated environmental and social impacts identified in the environmental scoping report are addressed, with a mitigation action, monitoring requirements, key indicator and responsibilities.

This EMP is incessant, and it requires compliance monitoring, updating and or amendment if the scope of operations change. All personnel working on the project will be legally required to comply with the standards set out in this EMP.

This section describes the Environmental Management Plan (EMP) for impacts associated with the proposed development. The EMP stipulates the management of environmental programs in a systematic, planned and documented manner. The EMP below includes the organizational structure, planning and monitoring for environmental protection at the proposed farm area development and other areas of its influence. The aim is to ensure that the proponent maintains adequate control over the project operations to:

- To prevent negative impacts where possible;
- Reduce or minimise the extent of impact during project life cycle;
- Prevent long-term environmental degradation.
- Ensure public safety and health is protected.

1.4. LEGAL AND OTHER REQUIREMENTS COMPLIANCE

This report presents the EMP and has been undertaken in accordance with the requirements of the Environmental Management Act, No. 7 of 2007 and the Environmental Assessment regulations of 2012.

As such, key requirements in accordance to this Act, classifies the proposed project as listed and invokes the need for an environmental management plan to sustainably implement this project. However, legal compliance is not only limited to the EMA, but also applies to all applying legal requirements identified in the ESR. When licenses are required such as wastewater discharge, the proponent should ensure that all licenses and permits are obtained and fulfilled as per conditions.

1.5. EMP ADMINISTRATION

There is a strong need to clearly outline the roles and responsibilities of all stakeholders to ensure that the EMP is fully implemented. There is also a need for the proponent to appoint an overall responsible person (Site Manager) to ensure the successful implementation of the EMP.

It solely remains the responsibility of Powercom to ensure;

- That all members of the project team, including contractors, comply with the procedures set out in this EMP;
- That all personnel are provided with sufficient training, supervision, and instruction to fulfil this requirement; and
- Ensuring that any persons allocated specific environmental responsibilities are notified of their appointment and confirm that their responsibilities are clearly understood.

2. CHAPTER THREE: ENVIRONMENTAL MANAGEMENT PLAN (EMP)

2.1. INTRODUCTION

The proposed project will have environmental impacts as indicated in the Environmental Scoping Report. This section is aimed at describing The Environmental Management Plan (EMP) for impacts associated with the proposed tower. The EMP stipulates the management of environmental programs in a systematic, planned and documented manner. The EMP below includes the organizational structure, planning and monitoring for environmental protection at the proposed farm area development and other areas of its influence. The aim is to ensure that the proponent maintains adequate control over the project operations to:

- To prevent negative impacts where possible;
- Reduce or minimise the extent of impact during project life cycle;
- Prevent long term environmental degradation.

2.2. EMP ADMINISTRATION

There is a strong need to clearly outline the roles and responsibilities of all stakeholders to ensure that the EMP is fully implemented. There is also a need for the proponent to appoint an overall responsible person (project manager) to ensure the successful implementation of the EMP as highlighted below:

Table 1: Roles and Responsibilities in EMP Implementation

ROLE	ENVIRONMENTAL RESPONSIBILITIES
Site Manager	Responsible to enforce EMP implementation to contractors
Environmental Control Officer (ECO)	Implement, review and update the EMP. • Ensure all reporting and monitoring required under EMP is undertaken, documented and distributed as needed • Conduct environmental site training (tool box talks) and inductions • Conducts environmental audit at work site with the support of environmental consultant. • Close out all non-conformances. • Ensure materials being used on site are environmentally friendly and safe.
The Department of Environmental Affairs	Approve the EMP and any amendments to the EMP. • Approve reports of environmental issues and non-conformances as issued. • Review and approve environmental reports submitted as part of EMP implementation
Contractor	Control and monitor actions required by the EMP. • Report all environmental issues to Environmental Control Officer • Ensure documented procedures are followed and records kept on site. • Ensure any complaints are passed onto the management within 24 hours of receiving the complaint.
Workers	Follow requirements as directed by site engineers. • Report any potential environmental issues to contractor manager/Site Manager, indicating spilt oil, excess waste, excessive dust generation, dirty water running off the site and other possible non-conformances

Table 2 : Construction and Operation EMP (C&O EMP)

Impact	Description	Effects	Class	Time frame	Responsibility	Action	Phase
Noise pollution	Noise will be generated through: -Construction activities -Moving vehicles.	- The health of working personnel could be disturbed. - Community residents could be disturbed by the noise. - General annoyance -Driving away of local animals' species near the project site	Environmental	4-6 months	-Environmental Control Officer -Site Manger	- A construction interval will be established, used and adhered to. - Workers will be issued earplugs to protect them from excessive noise. - Public will be notified through printed timetable stating planned operational activities. - Construction activities will be conducted during daytime. -Site notices will be erected on, around the site-notifying visitors, and nearby residents of different hazards on site. -No go areas marked as sensitive environments, especially for birds needs to be avoided during construction and operation.	**Construction & Operation**
Dust Generation	Dust will accumulate because of the land preparation, onsite movements of vehicles and machines, wind blowing on loose material during construction and tipping.	- Can lead to respiratory illnesses especially to those working in the area. - General air pollution. -Nuisance to nearby residents -The process can also drive away wild animals	Environmental	6-8 months	-Environmental Control Officer -Site Manager	- Dust suppression will be done through watering dust sources surfaces. -Watering down dusty surfaces, -Ensure that protective equipment such as respirators are distributed to employees, and ensure their use. -Site notices to be erected on and around the site to inform visitors and surrounding residents.	**Construction & Operation**

Impact	Description	Effects	Class	Time frame	Responsibility	Action	Phase
		within the project area surroundings					
Loss of Biodiversity	-Vegetative plants on site will be removed -Habitat destruction for both ground dwelling species and tree dwelling species. -Soil disturbance on and around the site.	-The clearing of vegetation will result in the breaking of the ecosystem processes in the area. -Loss of aesthetic value of the proposed project area. -The few small animals still habiting the place such as small rodents and birds will be forced away.	Environmental	Construction phase	-Environmental Control Officer -Site Manager	- The proposed project area is already disturbed, hence there is little vegetation to be affected by the development. - Ground disturbance will only be limited to the boundary area to avoid affecting a large area. -Upon completion of construction activities more regreening of the construction footprint affected area is recommended. A local landscaper can be engaged.	**Construction**
Greenhouse gas emissions	Green House Gasses (GHGs) emissions will be produced from the following activities: • Fuels combustion for (construction vehicles and equipment) • Ground excavation releases phosphorus found underground and releases particulate matter into the atmosphere.	-Global climate change - Air pollution	Environmental	Construction phase	-Environmental Control Officer -Site Manager -Department of Environmental Affairs.	-Adopt the use of ethanol blended fuels wherever necessary. -Design an operation system that cuts on fuel consumption. - Use of solar energy system during construction for lighting and other minor energy needs.	**Construction &Operation**

Impact	Description	Effects	Class	Time frame	Responsibility	Action	Phase
Waste Generation	-Construction and operation are associated with a lot of raw material and activities that results in pollution -The construction and maintenance activities may generate e-waste and this needs to be disposed of in a sustainable manner.	-Pollution from oil spills resulting from the handling of various machineries used during the construction phase -Construction rubble, empty packaging containers/bags and materials remnants.	Environmental	Construction phase	-Environmental Control Officer -Site Manager	- Ensure that all waste from construction activities is stored and contained in designated containers and transported to an approved waste disposal site. -Bulky waste such as building rubbles must be collected and disposed of for landfilling. -Visual inspections monitoring	
Safety and Health risks	Construction related Safety and Health hazards	-Injuries to workers such as Occupational dermatitis, slips and fall of humans and objects, musculoskeletal disorders, etc.	Health and safety	Construction phase	ECO	- Equip workers with Personal Protective Equipment (PPE), provide trainings on how to effectively use the PPE. -Provide platforms for briefings and meetings about possible safety and health hazards in the work place -Provide site signs warning and informing about different hazards on site.	**Construction and operation**
	Electrical hazards	-Fatalities and fires	Health and safety	Construction and operation	ECO	-Employees should be trained on electrical safety before working on site. -Safety representative with training on electrical hazards emergency management should be station on site always during construction -Safety signs during construction and operation should be put on site, no go	**Construction and Operation**

Impact	Description	Effects	Class	Time frame	Responsibility	Action	Phase
						areas should be labelled, PPE specifications should be clear to maintenance personnel.	
	Radiation (Non Ionizing)	Carcinogenic consequences	-Health -Social	Permanent	-Environmental Control Officer -Site Manager	-There are studies that indicate potential of radiation from cell phone towers to have carcinogenic impacts after prolonged exposure. -However, the tower is sited at most 5m away from residential households and there is no prolonged exposure to anyone. -PowerCom will secure the BTS perimeter to ensure that no one is always in proximity to the tower without pre-approval.	**Operation**
	Avifauna	-Bird fatalities	-Environmental	Permanent	-Environmental Control Officer -Site Manager	-New towers must be built below 60m height to avoid bird fatalities. -Construct unguyed towers with platforms that will accommodate possible future co-locations and build them at existing 'antenna farms', away from areas of high migratory bird traffic, wetlands and other known bird areas. -Where towers over 60m are absolutely necessary, use the minimum amount and intensity of lighting allowed under FCC regulations.	**Operation**

Impact	Description	Effects	Class	Time frame	Responsibility	Action	Phase
						-Minimize the tower 'footprint' on newly constructed towers. -If the tower is decommissioned, it should be removed as soon as possible. -Use visual daytime markers in areas of high diurnal birds. -Security lighting for on-ground facilities should be minimized, point downwards or be down-shielded. -Conduct on-site bird fatalities monitoring on the tower at least every month. -The use of white strobes results in less circling behavior by nocturnal migrants and thus fewer mortalities than red pulsating lights.	
	Air Transport	-Air transports impacts	-Socio-economic	Permanent		-The towers should comply with aviation guidelines so that they do not impact air transport systems. -Air traffic visibility systems such as lighting at the tip of the tower. -The towers should be designed so that they are visible to birds.	**Construction and operation**
Land use change	-There will be change in land use and visual aesthetics	-The area will no longer be suitable for agriculture.	-Social -Terrestrial environment	Permanent	-Environmental Control Officer -Site Manager	-The development should blend into the existing area through designing and colour coding.	**Construction and operation**

Impact	Description	Effects	Class	Time frame	Responsibility	Action	Phase
		-Sudden change in landscape appearances may be unfavourable to the conservatives.				-Green designing will bring life to the site and blend with surrounding areas.	
Positive Impacts							
Employment creation	The development provides an opportunity of outsourcing work	- Improves disposable income to those employed and their immediate families.	Socio-economic	Project life time	-Site Manager	- Work with local leadership (councillor) on acquiring non-skilled labour from the residents.	**Construction and operation**
Business linkages	-Raw materials acquiring and contracting companies provide an opportunity for businesses.	-Local suppliers will be presented with an opportunity to empower their businesses. -Construction workers can be provided with accommodation, food and services from the local community increasing business activities.	-Socio-economic	Construction phase	-Site Manager	-The proponent will outsource most of its materials and services from Okahandja	**Construction and operation**
Infrastructure development	The development presents a unique opportunity for infrastructure development in Namibia.	-Improvement in connectivity. -Development of the facilities will also pave way for future developers to grow interests in the area and result in ripple effects	-Socio-economic	Construction phase	-Site Manager	-The new tower should cover a larger area, and they should also consider provision of infrastructure platform to other smaller companies such as security companies.	**Construction and operation**

Impact	Description	Effects	Class	Time frame	Responsibility	Action	Phase
		and quick growing of the area.					

3. CHAPTER FOUR: CONCLUSION AND RECOMMENDATIONS

3.1. RECOMMENDATION FROM ENVIRONMENTAL ASSESSMENT PRACTITIONER

Based on the information provided it is the opinion of JBIC CC that no fatal flaws have been identified for the proposed development and that the information contained in this report is sufficient enough to allow DEA to make an informed decision.

Junior Baiano Industrial Consultants cc therefore recommends that Environmental Clearance be granted for the proposed development based on the following recommendations:

- The proposed activity is not anticipated to have significant environmental impacts.
- There is however a visual impact.
- The following recommendations should be implemented in order to ensure that potential impacts associated with the establishment and operation of the site are minimised:
    i. Any areas disturbed during construction and operation must be rehabilitated.
    ii. The structure is to be removed when the structure ceased to be used for telecommunications purposes and the site rehabilitated.
    iii. Construction to take place during working hours.
    iv. Trampling and disturbance associated with construction should be limited to within 5m (five metres) of the footprint of the site.
    v. On completion of the project all litter and construction debris shall be immediately removed from the site.
    vi. Mitigation measures to reduce the potential visual impact should be implemented as far as possible.

References

Enviro Dynamic.2014. Environmental Assessment Keetmanshoop Signal transmission, Namibia

FAO, 1998. World reference base for soil resources. World Soil Resources Report, vol. 84. FAO, Rome.

FAO, 1998.World reference base for soil resources.World Soil Resources Report, vol. 84. FAO, Rome.

Government of Namibia. 2008, Government Gazzette of the Republic of Namibia. Government notice No.1: Regulations for Strategic Environmental Assessment (SEA) and Environmental Impact Assessment (EIA)-Windhoek

Government of Namibia.2008, Government Gazette of the Republic of Namibia. Government notice No.1: Regulations for Strategic Environmental Assessment (SEA) and Environmental Impact Assessment (EIA)-Windhoek

IFC.2007. Stakeholder Engagement: A good practice handbook for companies doing business in emerging markets. IFC, Washington D.C

IFC.2007. Stakeholder Engagement: A good practice handbook for companies doing business in emerging markets. IFC, Washington D.C

Mendelsohn,J., el Obeid, S.2003.A digest of information on key aspects of Namibia's geography and sustainable development prospects. Research and Information Services of Namibia

MET (Ministry of Environment and Tourism). 2012. *Environmental Management Act no. 7 of 2007*. Windhoek: Directorate of Environmental Affairs, Ministry of Environment and Tourism