2023

THE ENVIRONMENTAL MANAGEMENT PLAN FOR THE OPERATION AND MAINTENANCE OF THE EXISTING NAMIB SUBSTATION, KOICHAB STATION, LORELEI SUBSTATION AND LUDERITZ SUBSTATION AND ASSOCIATED INFRASTRURE , IN \\KARAS REGION

The document is prepared by NamPower's SHEW Section

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1 LIST OF TERMS, ACRONYMS AND ABBREVIATIONS

EAP	Environmental Assessment Practitioner
ECC	Environmental Clearance Certificate

EIA	Environmental Impact Assessment
EMA	Environmental Management Act no 7 of 2007
EMP	Environmental Management Plan]
GIS	Geographical Information System
HIV/AIDS	Human immunodeficiency virus/ acquired immunodeficiency syndrome
MEFT	Ministry of Environment, Forest and Tourism
NHC	National Heritage Council
SHE	Safety, Health and Environment
SHEW	Safety, Health, Environment and Wellness
kV	Kilovolt

2 INTRODUCTION

Electricity is a vehicle to development and without it, economic growth and development cannot be achieved in our modern age. The continuous operation of this powerline and substation and other infrastructures allows NamPower to provide uninterrupted supply of

electricity to regions to improve the living conditions of Namibian citizens and to enable economic development as part of the Vision 2030 and other developmental plans in Namibia.

This EMP covers the following :

- Namib Substation
- Koichab T- Off substation
- Luderitz Substation
- Lorelei Substation
- 66kV transmission line from Namib Substation to Koichab T-Off Substation covering 100m in length.
- 66KV transmission line from Namib Substation to Lorelei substation in Rosh Pinah, covering 213km in length and 22m wide line servitude.
- 66kV transmission line from Koichab T-Off Substation to Luderitz Substation covering approximately 26km in length and 22m wide line servitude.

2.1 Project description

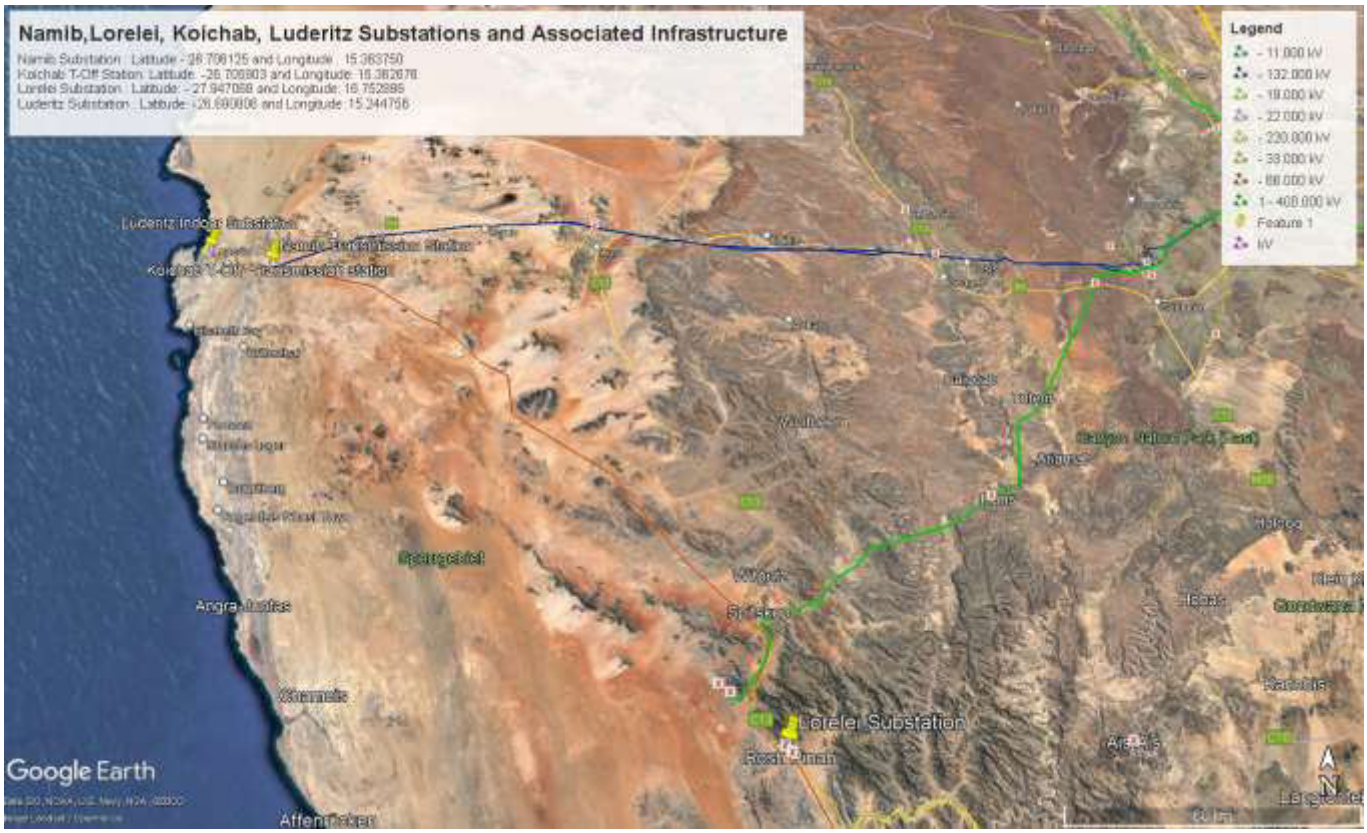

Figure 1: Locality map

The Lüderitz/Rosh Pinah Desert and Succulent Steppe area is bordered by the Dwarf Shrub Savannah (Giess 1971) or Desert-Dwarf Shrub Transition (Mendelsohn et al. 2002) vegetation type towards the north of Rosh Pinah and the Southern Namib vegetation type to the north of Lüderitz. The Succulent Karoo has been identified as one of 25 ‘biodiversity hotspots’ in the

world and of extreme high conservation value (Burke 2003). The Namib – of which the Desert and Succulent Steppe forms part of – is relatively well represented in the protected area network in Namibia covering 32% of the land area and 29.7% of the biome (Barnard 1998). Most of this biome currently falls within the Tsau //Khaeb (Sperrgebiet) National Park which used to be known as Diamond Area No 1. The Dwarf Shrub Savannah is not as well protected (i.e. by Government) as the Succulent Karoo vegetation type although includes the /Ai-/Ais-Richtersveld Transfrontier Park (ARTFP) and the Naute Game Park (NGP). The Southern Namib is well protected with most of it located within the Namib Naukluft Park.

The general Lüderitz and Rosh Pinnah areas are regarded as "low" in overall (all terrestrial species) diversity (Mendelsohn et al. 2002) while the overall terrestrial endemism in the areas on the other hand are viewed as "average" (Mendelsohn et al. 2002). The overall diversity and abundance of large herbivorous mammals (big game) is viewed as "low" with 1-2 species while the overall diversity of large carnivorous mammals (large predators) is determined at 4 species with brown hyena being the most important with "medium" densities expected in the Rosh Pinah area while the overall diversity and abundance of large herbivorous mammals (big game) is viewed as "average" with 3-4 species while the overall diversity of large carnivorous mammals (large predators) is determined at 3 species with leopard and cheetah being the most important with "medium" densities expected in the Lüderitz area (Mendelsohn et al. 2002), (Cunningham, 2021).

2.2 General area description

3 OBJECTIVES AND SCOPE OF THIS ENVIRONMENTAL MANAGEMENT PLAN (EMP)

The operation of the transmissions lines and station can have a negative impact on the receiving environment. However, the impacts are limited to the line servitude and station. It is thus important that good management measures are implemented to ensure that environmental damage is minimised. This Environmental Management Plan (EMP) seeks to manage and keep to a minimum the negative impacts associated with the transmission line

and station and at the same time, enhance the positive and beneficial impacts.

The scope of this EMP include all activities associated with the operation of the transmission lines and substation. It is necessary to highlight that the EMP is a living document that should be periodically reviewed and updated. It must also be noted that the EMP should be read in conjunction with laws and regulations outlined in section 5, Table 1 and all other applicable laws.

The aim of this EMP is to detail the management actions required to implement the mitigation measures identified thereby ensuring that any operational phase activity is carried out in a manner that takes cognisance of environmental protection and is in line with National legislation.

This EMP has the following objectives:

- To outline mitigation measures to be implemented during the operation phase, in order to manage and minimise the extent of environmental impacts.
- Minimise negative impacts and enhance positive impacts associated with the operations.
- To ensure that the operational activities do not result in undue or reasonably avoidable adverse environmental impacts, and ensure that any potential environmental benefits are enhanced.
- To identify key personnel who will be responsible for the implementation of the measures, outline functions and responsibilities.
- To propose mechanisms for monitoring compliance and preventing long term or permanent environmental degradation.
- Create management structures that address the concerns and complaints of Interested and Affected Parties (I&APs) with regards to the operational activities.

4 POLICY AND LEGISLATIVE FRAMEWORK

Table 1 below outline the legislative requirements which are applicable to the operational activities.

Legislation:	Section (s) applicable:	Implications:

Environmental Management Act no 7 of 2007	*Section 3*
	
	Section 27
	
	Section 33 onwards
	
	And all other applicable sections.
		• All activities performed should be in line with the following principles:
		  ○ Interested and affected parties should have an opportunity to participate in decision making
		  ○ Listed activities should be subject to an EIA
		  ○ Polluter should pay for rehabilitation
		  ○ Pollution should be minimized
		• Environmental assessments should be carried out for listed activities. The proposed activity can be classified under the following range of activities:
		  ○ Generation of electricity
		  ○ Transmission of electricity
		• These sections details the process to be followed in order to obtain a clearance certificate.
		• All existing listed activities must obtain a clearance certificate within one year of the law coming into effect. Therefore, all existing activities which can be considered a listed activity should apply for clearance.

EMA Regulations GN 28-30 (GG 4878) (February 2012)	• Listed activity: • 5.1 • 6 – 9; 13; 15; 21 -24 • Any other applicable sections	• This activity can be considered as electricity generation and transmission. • These sections details the process to be followed in terms of producing an Environmental Assessment and this process should be adhered to during the

		generation of information for this document.
No. 156 Labour Act, 1992: Regulations relating to the health and safety of employees at work .	All applicable regulations	All regulations applicable to different activities must be complied to.
Labour Act no 11 of 2007	• Section 3 • Section 4 • Section 9 • Section 39 – 42 • All other applicable sections	• Children under the age of 16 may not be employed • Forced labour may not be used. • Basic conditions of employment as stipulated by the law must be met. • The employer shall ensure the health and safety of all employees and non-employees on site. Employees must fulfil their duties in order to ensure their own health and safety and that of other employees and persons. Employees may leave the work site if reasonable measures to protect their health are not taken.
Electricity Act no 4 of 2007	• Section 33	• Installations used for the provision of electricity should be operated with due compliance with the requirements of laws relating to health, safety and environmental standards. Therefore – any company involved within the Electricity Supply Industry must adhere to the laws covering the previously stated aspects or stand to lose their licenses to operate.
Water Act no 54 of 1956	• Section 21 and 66 • Section 23 • All other sections applicable to different	• Conditions in terms of the disposal and management of effluent are to be adhered to. • Any person causing pollution to a water source shall be guilty of an

	activities.	offence.
Public and Environmental Health Act no 1 of 2015	• Section 52 • Section 53 • All other sections applicable to different activities.	• A person generating waste must ensure that the waste generated is kept and stored under conditions that causes no harm to human health or damage to the environment. • Waste must only be disposed of at a waste disposal site, including an incinerator approved by the local authority concerned.
Water Resources Management Act no 24 of 2013	• Section 89 • All other sections applicable to different activities.	• The owner or occupier or other person in control of land where an incident that causes or is likely to cause a water resource to be polluted must take all reasonable measures to contain and minimize the effects of the incident; and to clean up polluted areas and remedy the effects of the incident.
Hazardous Substances Ordinance 14 of 1974	• Section 27 • All other sections applicable to different activities.	• 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.
Fertilizers, farm feeds, agricultural remedies and stock remedies Act no 36 of 1947	• Definitions • Section 7 • Section 10 • All other sections applicable to different activities.	• Arborocide application is defined as an agricultural remedy under this Act • Only registered pesticide may be used. • May only buy herbicides in a container that complies with the prescribed requirements and is sealed and labelled. • Only allowed to use herbicides in the prescribed manner. • Land owners must be notified about applications, and the following information must be supplied: o Purpose of administration o Registered name and number of the product • Precautions to be taken before, during and after each administration.
The Nature Conservation Ordinance (1975) as amended through the Nature Conservation Amendment Act of 1996.	• Chapter 11: Game Parks, Nature Reserves, Conservancies and Wildlife Councils	• Permits are required to enter the Namib Naukluft and Dorob National Park. Permits are also required for the removal of any protected plant or tree. It also stipulates that no damage may be done to any object of geological, ethnological, archaeological, historical or other

		scientific interest without the appropriate permits.
National Heritage Act No 27 of 2004	• Section: 46, 48, 55 • All other sections applicable to different activities.	• All heritage resources are to be identified and either protected or removed/mitigated with a permit from the National Monuments Council, before any development may take place • A chance find procedure should be followed in case of discovery of a heritage resource.

5 ROLES AND RESPONSIBILITIES

It is the responsibility of NamPower and/or contractor to ensure that all the environmental management actions are carried out effectively and timeously. It is important to note that the successful implementation of the EMP is, however dependent on clearly defined roles and responsibilities by several stakeholders. Below are the key employees that are responsible for the management of environmental and social issues during the operational phase:

Table 2: The roles and responsibilities for operational activities:

Responsible person	Responsibilities
The Area Superintendent	• Is responsible for the enforcement of the EMP • To ensure that environmental requirements are adequately covered in any external service provider contracts. • To ensure that SHE requirements are included in the tender documents sent to the contractors. A copy of this EMP should also form part of the tender documents. • To ensure that corrective actions are implemented for non-compliances. • To ensure that appropriate records and information regarding

	compliance with environmental requirements are maintained. • To ensure that the stations and lines remain in compliance with the requirements of this EMP, through regular communication and monitoring. • To ensure that all incidents, accidents and complaints are reported to the project manager. The contractor to ensure that incidents and accidents are investigated to prevent re-occurrence.
Project Manager	• Is responsible for the enforcement of the EMP. • To ensure that SHE requirements are included in the tender documents sent to the contractors. • Must ensure that the contractor remains in compliance with the requirements of this EMP.
NamPower SHEW	• To ensure that all requirements with regards to this EMP are fulfilled. • To assist the Project Manager in ensuring that the contractor remains in compliance with this EMP. • Communicate NamPower SHEW requirement to the contractors and NamPower employees. • Request NamPower sections and contractors to submit SHEW files prior to any activity taking place for approval. • Provides SHEW inductions to NamPower and contractor employees. • Implement monitoring and conduct audits in consultation with the Project Manager. • Document and communicate monitoring, audit and inspection findings to project manager and area superintendent. • Communicate the final inspection report to the Project manager on contractor compliance to the EMP before the project close-

	off and final payment is made to the contractor.
Contractor	• Is responsible for the implementation of the EMP • To appoint as SHE officer responsible for the implementation of this EMP. • To ensure that all tasks undertaken under the scope of work, are in accordance both with NamPower's SHEW policies and procedures as well as to the requirements of this EMP. • Ensure that employees are regularly trained and awareness built relating to environmental and social management. • To ensure that all incidents, accidents and complaints are reported to the project manager. The contractor to ensure that incidents and accidents are investigated to prevent re-occurrence. • Ensuring that all employees receive a SHEW induction before the start of the project. • Ensuring that the work being done does not create a nuisance to any being working, residing or living on adjacent properties or within the immediate surroundings of the site.

6 DESCRIPTION OF OPERATIONAL ACTIVITIES TO BE UNDERTAKEN AND ASSOCIATED IMPACTS

The table below outlines the summary of the operational activities and associated socio-economic and environmental impacts.

Table 3: Description of the activities related to the operational activities.

Activity	Description	Associated potential impacts
General functioning	• Physical presence and	• Animal (including birds) mortalities

of the stations and transmission lines.	functional characteristics of the station and associated line.	through collisions and electrocution. • Visual impact. • Community impacts in a form fatalities or injuries caused by electrocution. • Meeting electricity demand (positive impact).
Maintenance of the stations and lines.	• The maintenance of the station and line entails: • General equipment repairs. • Replacement and servicing of batteries. • Maintenance of electrical equipment such as transformers, relays and capacitors. • Maintenance of electrical equipment such as transformers, relays and capacitors. • Construction or repairing of access roads.	• Soil and water contamination • Waste generation leading to filling up of landfill space • Loss of biodiversity • Loss f sensitive habitats, flora and fauna. • Social issues related to the introduction of new workers in the area, e.g. HIV/AIDS spreading • Loss of human life (through electrocution) .
Construction	• Construction include the following activities: • Construction or refurbishment of buildings (digging and setting of foundations, digging of	• Noise emissions • Dust emissions • Introduction of new people in the area leading to the spread of diseases such as HIV/AIDS

	cable trenches and other activities) . • Installation or extension of boundary fences • Upgrade of electrical equipment (either in size, capacity or technology). • Personnel conduct in surrounding communities.	• Soil and water contamination • Waste generation leading to filling up of landfill space • Employment of casual workers • Loss of biodiversity reduces habitat availability and food sources for many animals. • Loss of sensitive plants and habitats. • Loss or damage of heritage resources.
Periodic inspections and monitoring	• Replacement, cleaning and maintenance of station and line components.	• Soil and ground water contamination as a result of oil spills • Soil contamination as a result of improper waste handling and disposal. • Loss of biodiversity if existing access roads are not put to use.
Use and storage of Hazardous Substances	• Storage of hazardous material.	• Possible oil spills and soil contamination from electrical units such as transformers.
Installation of Optic Fibre networks	• Design, Supply, Delivery, Installation and Commissioning of Optic Fiber networks for communication purposes.	• Loss of biodiversity • Soil contamination as a result of improper waste handling and disposal. • Loss of sensitive plants and habitats.
Vegetation	• Removal of trees and	• Loss of biodiversity

Management	bushes to maintain access to the line servitude. Removing weed from the substation yard.	• Conflict with stakeholders • Loss of topsoil • Soil and water contamination • Loss or damage to heritage and cultural resources.

7 MANAGEMENT AND MITIGATION MEASURES

In order to ensure that the potential impacts are eliminated and/or minimised, it is necessary to ensure that the various activities related to the operation of the powerlines and station are adequately managed and monitored. Table 4 below outline mitigation measures as well as objectives to be achieved. A responsible person (s) have been assigned to each mitigation measure (s).

Table 4: Proposed mitigation measures for the general operational activities

ASPECT	MANAGEMENT AND MITIGATION MEASURES/COMMITMENTS	RESPONSIBLE PERSON
Safety Health and Environmental (SHE) Awareness	• All employees should undergo SHE induction before work commences onsite. • All employees are to be made aware of their individual roles and responsibilities in achieving compliance with the EMP. • SHE toolbox talks to be conducted and records to kept onsite. • Warning signs must be placed on and around the site.	• Area superintendent • Project manager • Contractor
Safety Management	• Develop and implement an occupational health and safety system that comprises key elements such as risk assessment and safe working procedures. • All work activities to be done under the supervision of a competent person. • Anti-climbing devices should be installed on transmission towers and be maintained. • Appropriate warning signs must be placed on the facilities.	• Area superintendent • Project manager • Contractor
Fire Management	• Eliminating the presence of potential sources of ignition and providing appropriate equipment to minimize fire risk.	• Area superintendent

ASPECT	MANAGEMENT AND MITIGATION MEASURES/COMMITMENTS	RESPONSIBLE PERSON
	• Fire extinguishers to be readily available onsite, especially when hot works are conducted. • Regular servicing of fire extinguishers.	• Project manager • Contractor
Air Quality	• Dust generation from all activities must be minimised. • Excavation, handling and transportation of erodible materials shall be avoided under high wind conditions or when a visible dust plume is present. • Speed limit to be enforced to control dust emissions. • Dust suppression measures shall be implemented when necessary. • Vehicle, machinery, and equipment shall be maintained in good working order to minimise exhaust fume emissions. • Vehicle, machinery, and equipment must be serviced by competent personnel and records must be kept onsite	• Area superintendent • Project manager • Contractor
Resources Efficiency	• Minimise water wastage and record water usage. • Avoid wasteful use of materials. • Source goods and services locally were possible	• Area superintendent • Project manager • Contractor

ASPECT	MANAGEMENT AND MITIGATION MEASURES/COMMITMENTS	RESPONSIBLE PERSON
Waste Management	• Minimise the generation of waste by applying the waste hierarchy. • Station and line servitude to be kept free of waste. • No burning, burying or dumping of any waste materials shall be permitted onsite. • Labelled waste bins with lids must be provided at substations/worksites for all waste streams and ensure that waste is disposed at nearest approved waste disposal site. • Ensure that waste segregation is done at source. • Hazardous waste shall be disposed of at a registered hazardous waste disposal site. • Safe disposal certificates for hazardous waste must be kept in the SHE file. • Concrete waste must not be dumped on site. • Remove all equipment, materials and waste from sites after maintenance activities.	• Area superintendent • Project manager • Contractor
Wastewater management	• Water containing environmental pollutants shall be collected and removed from site.	• Project manager

ASPECT	MANAGEMENT AND MITIGATION MEASURES/COMMITMENTS	RESPONSIBLE PERSON
	• No waste water runoff or uncontrolled discharges from the site/working areas shall be permitted. • Mobile toilets or septic tanks should be used in remote areas.	• Contractor • Area superintendent
Hazardous Substances	• All hazardous chemicals must • The use, handling, storage and disposal of the hazardous chemical must be in accordance with the MSDS. • Containers must be clearly marked to indicate contents and quantities. • Hazardous substances storage areas must be bunded. A bund should be able to contain 110% of the volume of the largest container stored within it. • All transformers to be contained in bunded areas. • Diesel and other liquid fuel, oil and hydraulic fluid must be stored in appropriate storage tanks or in bowsers with secondary containment. • Inspect and maintain hazardous storage areas and bund walls to avoid overflows. • Ensure that drip trays are available for heavy vehicles when conducting	• Area superintendent • Project manager • Contractor

ASPECT	MANAGEMENT AND MITIGATION MEASURES/COMMITMENTS	RESPONSIBLE PERSON
	maintenance activities in case of transmission fluid spills. • Report any accidental spills that occur onsite. • Spill kit and absorbents must be available onsite (substation). • Hazardous substance storage areas must display safety symbolic signs. • All spills must be reported, cleaned, and remediated to in compliance with SHEW requirements.	
Social Impact	• Employees should limit their contact with permanent residents of the area. • Employees should be properly educated about the impact of HIV / AIDS and pregnancies. • The use of intoxicating liquor or drugs of any kind by the employees is strictly prohibited. • Ensure that all queries and complaints are documented and dealt with. • A register shall be kept of all complaints from stakeholders. • All claims shall be handled immediately to ensure timely rectification.	• Area Superintendent • Project Manager • All NamPower employees • Contractor

ASPECT	MANAGEMENT AND MITIGATION MEASURES/COMMITMENTS	RESPONSIBLE PERSON
Archaeology	• Should a heritage site or archaeological site be uncovered or discovered during the operation phase, a "change find" procedure in appendix 8 should be applied. • Any chance finds must be reported to NamPower environmental section. • In an event of discovery of human remains or other artefacts the work shall cease. A professional archaeologist is to be consulted and carry out investigation.	• Area superintendent • Project Manager • SHEW • Contractor
Fauna and Flora	• Ensure that the site is kept clean and free of rubbish that could potentially attract animals and pests • No harvesting of plants is allowed. • Poaching or capturing of any animal (wild or domestic) shall be prohibited. • Bird nests may not be disturbed unless interfering with the normal operation of the lines/stations. • No domestic animals may be kept onsite as they can introduce diseases or interbreed with the animals occurring naturally in the area. • Monitor bird collisions, develop and implement mitigation measures where	• Area superintendent • Project Manager • SHEW • Contractor

ASPECT	MANAGEMENT AND MITIGATION MEASURES/COMMITMENTS	RESPONSIBLE PERSON
	required. • All wildlife and electrical infrastructure interactions must be reported to the SHEW section. • Vehicles driving along the lines should engage four wheel drive to prevent spinning and consequent impacts on soil surface. • Existing tracks must be utilised.	
Site disturbances	• Maintain track discipline – i.e. no offroad driving allowed. • Stick to the existing, albeit rudimentary, tracks. • Use pre-determined turn around points. • Ensure that drip trays are available for heavy vehicles when conducting maintenance activities in case of transmission fluid spills. • Remove all equipment from sites after maintenance activities. • Do not litter along the route. • Do not collect, damage, remove any plants when exiting vehicles for transmission pole inspections.	•

ASPECT	MANAGEMENT AND MITIGATION MEASURES/COMMITMENTS	RESPONSIBLE PERSON
	• Document/record any invasive alien plants encountered along route. • Document/record any new plant species encountered – i.e. out of the ordinary or not previously observed. • Document/record any domestic stock and/or pets observed (Relevant to Protected Areas only); and • Report any people in area other than Scorpio mine and NamPower staff to the MEFT and/or NamPol and/or Scorpion mine security.	
Water Resources	• Care must be taken to ensure that pollution of water does not occur. • Naturally occurring water resources may not be used for any personal hygiene. • Water may only be taken from a private or government property based on an agreement between the NamPower, contractor and custodian of the water source.	• Area superintendent • Project Manager • SHEW • Contractor
Campsite Establishment	• NamPower/ Contractor must sign land permission form and agreement with land owners prior to commencement of work onsite. • Adequate ablution facilities must be provided onsite in relation to the number of employees.	• Area superintendent • Project Manager • SHEW

ASPECT	MANAGEMENT AND MITIGATION MEASURES/COMMITMENTS	RESPONSIBLE PERSON
	• Ablution facilities must not be located within 100m of any river, stream channel, pan, dam or borehole. • Non-employees are not allowed to reside at the campsite. • Fire extinguishers, first aid kits, assembly point, and emergency numbers must be available onsite. • Waste must be managed in accordance with waste management requirements outlined in this EMP.	• Contractor
Monitoring indicators	• Monitor bird mortalities , any dead birds located below the line should be recorded. • Monitor erosion, any signs of erosion along track used, and signs of recovery at rehabilitated sites. • Monitor new plants encountered , any new plants observed – i.e., out of the ordinary. • Monitor illegal collection/damage of flora. • Monitor track discipline.	•

ASPECT	MANAGEMENT AND MITIGATION MEASURES/COMMITMENTS	RESPONSIBLE PERSON
Manual and Mechanical Vegetation Removal	• Obtain a permit from the Ministry of Environment, Forestry and Tourism to remove protected trees as per the Forest Act No. 12 of 2001. • Measures must be put in place to avoid erosion especially at rivers, stream channel crossings, and at places where existing erosion scars and dongas are encountered to avoid any further erosion. • Where manual bush clearing is impractical, mechanical bush clearing shall be used, but an effort must be made to preserve the topsoil structure. • The disturbed soil must be levelled. • Do not remove wood cut on site as this would affect the recycling of nutrients locally as well as lead to a potential industry in firewood targeting the better quality tree species e.g. Acacia erioloba. • Where clearing is done near a river, the contractor/NamPower must ensure that no felled bushes/branches/shrubs are left behind in the riverbed. • No burning of bush cleared materials is allowed onsite. • Protected tree species, especially larger specimens, within the affected area i.e. 12m from centre line in either direction not expected to affect the transmission line could be avoided.	• Area superintendent • Project Manager • SHEW • Contractor

ASPECT	MANAGEMENT AND MITIGATION MEASURES/COMMITMENTS	RESPONSIBLE PERSON
	• Manual and mechanical vegetation removal should be done in accordance with NamPower Herbicide and Pesticide Management Procedure.	
Herbicide Use	• Prevent the application of selected herbicide(s) in sensitive areas –e.g. "high" & "medium" sensitivity areas (See annexure 1). Sensitive areas are known/expected to have higher biodiversity. • Avoid the spraying of protected tree species not directly affecting the power lines should there be a need for bush clearing. • Eradicate all invasive alien species potentially associated with the line/station. This would indicate overall environmental commitment. • Avoid spraying herbicide during windy days/periods. See the general product requirements for herbicide used. This could affect non-target areas and species. • Avoid spraying, removing and/or approaching trees with vulture (and other larger raptors) nests along the route. • Implement strict control over the storage, protective measures & application of the selected herbicide(s) throughout. • Herbicide should be applied directly to the plant's stem or leaves as a spray.	• Area superintendent • Project Manager • SHEW • Contractor

ASPECT	MANAGEMENT AND MITIGATION MEASURES/COMMITMENTS	RESPONSIBLE PERSON
	• Herbicide will be handled in accordance with the requirements outlined in the NamPower Herbicide and Pesticide Management Procedure.	
Site Rehabilitation (progressive and post rehabilitation)	• Progressive rehabilitation when construction work is in progress must be done. Post construction rehabilitation must also be done. All materials, equipment and waste must be removed from site. • A post construction audit within 1 week prior to the Contractor/NamPower construction team leaving site must be conducted. • SHEW to sign site close off or take over certificate once remedial corrective actions have been implemented.	• Area superintendent • Project Manager • SHEW • Contractor

8 REPORTING, MONONITORING AND AUDITING

The environmental monitoring, inspections and audits must be conducted in line with legislation, supporting procedures and requirements of this plan. Monitoring, inspection and audit reports detailing the monitoring and audit results shall be prepared by the SHEW section and communicated to the Area Manager, Superintendent and Project Manager.

9 NON-COMPLIANCE AND CONFLICT MANAGEMENT PROCEDURES

The Area Superintendent, Project manager and Contractor shall ensure that the employees and external service providers comply with the requirements outlined in this EMP. In the event of non-compliance the following recommended process shall be followed:

- Non – compliances will be identified during inspections or audits carried out by the SHEW Section and reported to the Area manager, Superintendent and Project Manager for corrective actions.
- Area Superintendent / Project Manager shall notify the responsible stakeholders about the non-compliance .
- Corrective and preventative actions must be implemented on an agreed timeframes.
- Area Superintendent / Project Manager to report back on how the non-conformances have been rectified.
- Follow – up inspections/audits shall be conducted to assess whether the corrective and preventative actions were implemented effectively.

The contractor shall notify NamPower of the following:

- Conflicts arising with any landowner / representative and other stakeholders.
- Any special conditions requested by a landowner / representative.

NamPower has the right to stop all contractor's activities if it is found that a gross violation of the EMP is taking place.

10 RECORD KEEPING

Record keeping is important for the effective functioning and implementation of an EMP. EMP documentation must be kept in both the hard copy and electronic format for safe keeping. These

must include:

- Copy of the Environmental Clearance Certificate
- A copy of an EMP
- EMP implementation action plan
- Induction records
- Resource use records i.e. water and fuel consumption
- Audit and Inspection reports

11 CONCLUSION

All management measures and legal requirements outlined in this EMP should be implemented to ensure environmental compliance by all parties undertaking the operational activities. This will ensure that potential negative impacts are identified, avoided, or mitigated and positive impacts are enhanced.

12 ANNEXURES

Annexure 1: Areas of importance, with protected species potentially affected, along the Namib-Lorelei 66kV transmission line.

Hotspot areas	Distance (km)	Area	Important species	Status	Aliens	Other important features	Importance ranking
	0 to 134.2	Namib SS area					Low
1	134.2 to 147.5	Swartbergkloof Mnts area	Various – see Table 4			Rocky areas+ DL's	Medium
2	147.5 to 149.7	Swartbergkloof Mnts area	Various – see Table 4			Mountains	High
3	149.7 to 152.4	Swartbergkloof Mnts area	Various – see Table 4			Rocky areas	Medium
	152.4 to 183.9	Obib SS area					Low
4	183.9 to 187.6	Obib SS area				Rocky areas	Medium
	187.6 to 203.9	Obib SS area					Low
5	203.9 to 204.0	Obib SS area				Hills	High
	204.0 to 207.3	Obib SS area					Low
6	207.3 to 207.9	Obib SS area				Hills	High
	207.9 to 213.9	Lorelei SS area					Low

Distance: 213.9km
Importance ranking: High, Medium and Low
Status: See Table 4
F: See Table 4 – various spp.
NC: See Table 4 – various spp.
C2: See Table 4 – various spp.
LC: See Table 4– various spp.
DL's = Drainage lines

Annexure 2: Monitoring checklist to ensure that line inspections and general maintenance activities were conducted in accordance with guidelines – i.e. ecological best practices.

Activity: Protection of Ecology & Vegetation	**Compliance**	
	Yes	**No**
Track discipline		
Evidence of new tracks		
Evidence of off-road driving		
Evidence of turnaround violations		
Evidence of oil spills		
Evidence of waste		
Evidence of litter		
Illegal collection/damage of flora		
Evidence of illegal plant collection		
Evidence of vehicle damage to plants		
Evidence of unauthorised people/vehicles		
Erosion		
Evidence of erosion along route		
Invasive alien plants		
Evidence of invasive alien plants along route - New		
Evidence of invasive alien plants along route - Existing		
New species		
Any new plants encountered – i.e. not previously observed		
Domestic stock/pets		
Domestic stock and/or pets encountered along route (Relevant to Protected Areas only)		
Bird mortalities		
Record all dead birds encountered below the line		

Annexure 3: Landowner permission form

Landowner Permission Form

Landowner name:	Contact number:
Representative name:	
Farm name:	
Contractor:	
Representative name:	Contact number:

General Notice

This form is to be used prior to a contractor entering a landowner's property to commence any work related to the construction or maintenance of power-line structures and servitudes.

The form must be completed by either the landowner or his / her legal representative on the property.

Section A: Before activities commence

Activities to be undertaken on the property (completed by the contractor):

Use of water resources		Camping	
Powerline erection		Bush clearing	
Powerline refurbishment		Herbicide application	
Trimming of vegetation		Access road usage	
Use of other infrastructure		Rehabilitation	
(please specify)			

Specific conditions to be met on the property (as stipulated by the landowner):

_____

_____

_____

_____

Dates when access is needed:

From: _____ **To:** _____

Signatures (prior to entry)

_____ _____

Landowner/Representative Contractor representative

_____ _____

Date Date

Section B: Upon completion of work and prior to leaving the property

Remarks on compliance or misconduct (upon completion of activities):

Issues still to be resolved upon completion of activities:

Signatures (upon completion)

Landowner/Representative	Contractor representative
Date	Date

Annexure 4: Chance find procedure

Definition: The “chance finds” procedure covers the actions to be taken from the discovery of a heritage site or item to its investigation and assessment by a trained archaeologist or other appropriately qualified person.

Compliance: The “chance finds” procedure is intended to ensure compliance with relevant provisions of the National Heritage Act (27 of 2004), especially Section 55 (4): “ a person who discovers any archaeological object must as soon as practicable report the discovery to the Council”. The procedure of reporting set out below must be observed so that heritage remains reported to the NHC are correctly identified in the field.

Procedure:

Action by person identifying archaeological or heritage material

a) If operating machinery or equipment stop work

b) Identify the site with flag tape

c) Determine GPS position if possible

d) Report findings to foreman

Action by foreman

a) Report findings, site location and actions taken to superintendent

b) Cease any works in immediate vicinity

Action by superintendent

a) Visit site and determine whether work can proceed without damage to findings

b) Determine and mark exclusion boundary

c) Site location and details to be added to project GIS for field confirmation by archaeologist

Action by archaeologist

a) Inspect site and confirm addition to project GIS

b) Advise NHC and request written permission to remove findings from work area

c) Recovery, packaging and labelling of findings for transfer to National Museum

In the event of discovering human remains

a) Actions as above

b) Field inspection by archaeologist to confirm that remains are human

c) Advise and liaise with NHC and Police

d) Recovery of remains and removal to National Museum or National Forensic Laboratory, as directed