ENVIRONMENTAL SCOPING ASSESSMENT

RELOCATION OF A SECTION OF THE EXISTING 66kV & 132kV OHTL HOSEA KUTAKO INTERCHANGE TRANSMISSION LINE AND SUB STATION, HOSEA KUTAKO INTERNATIONAL AIRPORT (KHOMAS REGION)

FINAL SCOPING REPORT FOR REVIEW BY THE OFFICE OF THE ENVIRONMENTAL COMMISSIONER

NOVEMBER 2023

NamPower

URBAN green cc
Town and Regional Planning Consultants
Environmental Management Consultants

PROJECT INFORMATION

Proponent:	**NAMIBIA POWER CORPORATION (PTY) LTD**
Study Title:	**RELOCATION OF A SECTION OF THE EXISTING 66kV & 132kV HOSEA KUTAKO INTERCHANGE TRANSMISSION LINE AND SUB STATION (KHOMAS REGION)**
Type of Study:	**ENVIRONMENTAL SCOPING ASSESSMENT**
Project Location:	**HOSEA KUTAKO INTERNATIONAL AIRPORT - KHOMAS REGION (NAMIBIA)**
Project Number:	**2023/KHOM/NP-01**
Competent Authority:	**MINISTRY OF MINES AND ENERGY** **PRIVATE BAG 13297** **WINDHOEK**
Approving Authority:	**MINISTRY OF ENVIRONMENT, FORESTRY AND TOURISM** **DEPARTMENT OF ENVIRONMENTAL AFFAIRS** **PRIVATE BAG 13306** **WINDHOEK** **NAMIBIA**
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LIST OF ACRONYMS

BID	Background Information Document
BFD	Bird Flight Diverter
˚C	degrees Celsius
DEA	Directorate of Environmental Affairs
DSR	Draft Scoping Report
EAP	Environmental Assessment Practitioner
ECC	Environmental Clearance Certificate
ECO	Environmental Control Officer
i.e.	Example
EA	Environmental Assessment
EIA	Environmental Impact Assessment
EIAR	Environmental Impact Assessment Report
EMA	Environmental Management Act
EMI	Electro-magnetic interference
EMP	Environmental Management Plan
ESA	Environmental Scoping Assessment
ESIA	Environmental and Social Impact Assessment
ESMP	Environmental and Social Management Plan
etc.	Etcetera
FSR	Final Scoping Report
Ha	Hectare
HKIA	Hosea Kutako International Airport

I&AP	Interested and Affected Parties
IBA	Important Bird Area
IPP	Independent Power Producer
IUCN	International Union for Conservation of Nature
kV	KiloVolt
kVA	Kilowatts Ampère
L	Litre
MET	Ministry of Environment and Tourism (formerly)
MEFT	Ministry of Environment, Forestry and Tourism
MME	Ministry of Mines and Energy
MVA	Mega-volt-amperes
MW	MegaWatt
NAMCARs	Namibia Civil Aviation Regulations
NAMCATs-AH	Namibia Civil Aviation Technical Standards - Aerodromes and Helipads
NamPower	Namibia Power Corporation (Pty) Ltd
No	Number
OHTL	Overhead Transmission Line
OPGW	Optical Ground Wire (earth wire)
O&M	Operations and Maintenance
PPP	Public Participation Process
QDS	Quarter Degree Square
SABAP	Southern African Bird Atlas Project (SABAP1 & SABAP2)
ToR	Terms of Reference
UNFCCC	United Nations Framework Convention on Climate Change

GLOSSARY OF TERMS

Alternatives - A possible course of action, in place of another, that would meet the same purpose and need but which would avoid or minimize negative impacts or enhance project benefits. These can include alternative locations/sites, routes, layouts, processes, designs, schedules and/or inputs. The “no-go” alternative constitutes the ‘without project’ option and provides a benchmark against which to evaluate changes; development should result in net benefit to society and should avoid undesirable negative impacts.

Assessment - The process of collecting, organising, analysing, interpreting and communicating information relevant to decision making.

Bulk Supply - The wholesale supply of i.e. water on a business-orientated basis, in large quantities, whether in treated or untreated form, for any utilisation purpose to a customer for own use or for subsequent supply by the customer to consumers.

Competent Authority - Means a body or person empowered under the local authorities act or Environmental Management Act to enforce the rule of law.

Critically Endangered (IUCN) - A taxon is Critically Endangered when the best available evidence indicates that it meets any of the criteria A to E for Critically Endangered (see Section V of the IUCN Red List Categories and Criteria[1]), and it is therefore considered to be facing an extremely high risk of extinction in the wild.

Cumulative Impacts - In relation to an activity, means the impact of an activity that in itself may not be significant but may become significant when added to the existing and potential impacts eventuating from similar or diverse activities or undertakings in the area.

Decreaser Grass - a dominant grass in good, well-managed veld that will decrease under any form of mismanagement, such as severe disturbance, untimely burn, overgrazing or under-utilisation.

Endangered (IUCN) - A taxon is Endangered when the best available evidence indicates that it meets any of the criteria A to E for Endangered (see Section V of the IUCN Red List Categories and Criteria[2]), and it is therefore considered to be facing a very high risk of extinction in the wild.

Endemic – A species occurring within a restricted range.

Endemic status categories:

E = endemic; NE = near endemic; SA = Southern Africa; Nam = Namibia

Environment - As defined in the Environmental Assessment Policy and Environmental Management Act - “land, water and air; all organic and inorganic matter and living organisms as well as biological diversity; the interacting natural systems that include components referred to in sub-paragraphs, the human environment insofar as it represents archaeological, aesthetic, cultural, historic, economic, paleontological or social values”.

Environmental Impact Assessment (EIA) - The process of examining the environmental effects of a development as prescribed by the Environmental Impact Assessment Regulations (GN. No. 30 of 2012) for activities listed as List of Activities which may not be undertaken without an Environmental Clearance Certificate from the Environmental Commissioner (GN. No. 29 of 2012).

Environmental Management Plan (EMP) - A working document on environmental and socioeconomic mitigation measures, which must be implemented by several responsible parties during all the phases of the proposed project.

Evaluation – the process of ascertaining the relative importance/significance of information, in light of people’s values, preference and judgements in order to make a decision.

[1] Available at http://s3.amazonaws.com/iucnredlist-newcms/staging/public/attachments/3097/redlist_cats_crit_en.pdf

[2] Available at http://s3.amazonaws.com/iucnredlist-newcms/staging/public/attachments/3097/redlist_cats_crit_en.pdf

Hazard - Anything that has the potential to cause damage to life, property and/or the environment. The hazard of a particular material or installation is constant; that is, it would present the same hazard wherever it was present.

Increaser Grass - a grass species that will increase under any type of mismanagement or disturbance.

Interested and Affected Party (I&AP) - any person, group of persons or organisation interested in, or affected by an activity; and any organ of state that may have jurisdiction over any aspect of the activity.

Mitigate - The implementation of practical measures to reduce adverse impacts.

Protected - Protected under Namibian legislation.

Proponent - Any person who has submitted or intends to submit an application for an authorisation, as legislated by the Environmental Management Act no. 7 of 2007, to undertake an activity or activities identified as a listed activity or listed activities; or in any other notice published by the Minister or Ministry of Environment, Forestry & Tourism.

Public - Citizens who have diverse cultural, educational, political and socio-economic characteristics. The public is not a homogeneous and unified group of people with a set of agreed common interests and aims. There is no single public. There are a number of publics, some of whom may emerge at any time during the process depending on their particular concerns and the issues involved.

Public Consultation - The process of engagement between stakeholders (the proponent, authorities and I&APs) during the planning, assessment, implementation and/or management of proposals or activities. The level of stakeholder engagement varies depending on the nature of the proposal or activity as well as the level of commitment by stakeholders to the process. Stakeholder engagement can therefore be described by a spectrum or continuum of increasing levels of engagement in the decision-making process. The term is considered to be more appropriate than the term “public participation”.

The term therefore includes the proponent, authorities (both the lead authority and other authorities) and all interested and affected parties (I&APs). The principle that environmental consultants and stakeholder engagement practitioners should be independent and unbiased excludes these groups from being considered stakeholders.

IUCN Red List - The IUCN Red List of Threatened Species™ is widely recognised as a comprehensive, objective global approach for evaluating the conservation status of plant and animal species. IUCN Red List Categories: LC = least concern (secure);

NT = near threatened;

VU = vulnerable;

EN = endangered;

CE = critically endangered;

EW = extinct in the wild

EX = extinct; G = global status

Optical Ground Wire – A type of cable used in overhead power lines, combining the functions of grounding and communications.

Scoping Process - Process of identifying: issues that will be relevant for consideration of the application; the potential environmental impacts of the proposed activity; and alternatives to the proposed activity that are feasible and reasonable.

Significant Effect/Impact - Means an impact that by its magnitude, duration, or probability of occurrence may have a notable effect on one or more aspects of the environment.

Sustainable Development – Development that meets the needs of the current generation without compromising the ability of future generations to meet their own needs and aspirations.

Species of Special Concern - Those species listed in the Endangered, Threatened, Rare, Indeterminate, or Monitoring categories of the South African Red Data Books, and/or species listed in Globally Near Threatened, Nationally Threatened or Nationally Near Threatened categories (Barnes, 1998).

Topsoil - The top 150 mm of soil (topsoil) and root material of cleared vegetation.

Vulnerable - A taxon is vulnerable when the best available evidence indicates that it meets any of the criteria A to E for Vulnerable (see Section V of the IUCN Red List Categories and Criteria[3]), and it is therefore considered to be facing a high risk of extinction in the wild.

[3] Available at http://s3.amazonaws.com/iucnredlist-newcms/staging/public/attachments/3097/redlist_cats_crit_en.pdf

EXECUTIVE SUMMARY

This Project and Study being conducted is an outflow of the current road construction (B6 Windhoek Highway to Hosea Kutako International Airport) forming part of the Trans-Kalahari Highway linking Botswana and other neighbouring landlocked countries with Namibia.

The new section of the B6 Highway (Windhoek – HKIA) is being constructed as part of the Trans-Kalahari Highway, which provides linkage to the Port of Walvis Bay and other primary trade corridors, serving the SADC region. The planned traffic interchange off the B6 Highway to the HKIA requires a large area, which is currently taken-up by a small section of the existing 66kV OHTL & 132kV OHTL.

The project at hand entails the relocation of a small section of the 66kV & 132kV Hosea Kutako Interchange Transmission Line (hereafter referred to as the Project) to enable the construction of the new section of the B6 Highway and interchange within the vicinity of the Hosea Kutako International Airport (HKIA).

The Project site is located ±2.2- km south of the HKIA, located some 40 km east of Windhoek within the Kappsfarm Settlement (see Figure 1.2-1).

This EA process was carried out in accordance with provisions for EA, as prescribed by the Environmental Impact Assessment Regulations (GN. No. 30 of 2012), provided for by Section 56 of the Environmental Management Act (No. 7 of 2007).

During the screening stage, the following potential issues were identified –

- Socio-economic -
    - Loss of agricultural land (direct negative);
    - Improved accessibility to and from the HKIA (indirect benefit);
    - Continues supply of power to the national & regional grid (direct benefit);
    - Temporary employment opportunity and job creation (direct benefit);
    - Residents' health and safety from EMF (direct negative);
    - Workers' health and safety during construction (direct negative);
    - Temporary power outage (direct negative);
- Temporary obstruction of traffic (direct negative);
- Dust generation (direct negative);
- Visual effects (direct negative);
- Vegetation removal and habitat destruction (direct negative);
- Bird collisions (direct negative); and

- Civil aviation safety as a result of OHTL crossing roads (direct negative).

No concerns were submitted with the EAP as part of the 1st round of public consultation; however NAMCARs Part 139 and NAMCATS-AH regulatory provisions were submitted by the Namibia Civil Aviation Authority, for consideration purposes during the assessment.

Kappsfarm settlement is a peri-urban area characterised by a mixture of urban and rural land use activities, with well-developed infrastructural networks. The Settlement area is situated to the east of Windhoek.

This settlement area experienced rapid growth over the last few years resulting in linear developments of different kinds along the B6 Windhoek-Gobabis highway. The immediate surroundings to the Project site accommodate a variety of activities and supporting land uses of agricultural nature (livestock and game), low-density eco-estates, agricultural-educational purpose (UNAM - Neudamm Campus), as well as the Hosea Kutako International Airport (commercial nature).

The natural environment and landscape are characterised by a gentle topography with occasional hills, and the Bismarck Mountain situated to the south of the HKIA.

The natural vegetation is classified as ''Acacia Tree and Highland Savanna'', which is characterised by larger, open expanses of grasslands and various densities of Acacia trees. Farming practices (domestic stock and game) have impacted severely on vegetation, resulting in a change to a woody – often densely so – Acacia dominated woodland. The Project site is situated within the Namatanga Conservancy, a freehold (commercial area) conservancy extending over an area of ±125,000 ha.

Central Namibia in general - which includes the Project site - is rich in reptile, amphibian, mammal and bird species diversity (Brown *et al.*, 1998; Griffin, 1998a/b/c).

It is estimated that at least 78 species of reptile, 13 amphibian, 75 mammal and 173 bird species (breeding residents) occur in the general/immediate area of the proposed Project site of which a high proportion are endemics.

The larger surrounding area's visual aesthetics, which defines the sense of place, is directly defined by the urban-rural character and natural environment. To the south of the Project site, the landscape is defined by large open areas used for commercial agricultural and tourism activities, with the Bismark Mountains defining the skyline (Photo 5.3-1). The norther side of the Project site is again defined by bulk infrastructure, such as the existing B6 Highway, the new B6 Highway and interchange being constructed, as well as the 66kV OHTL and 132kV OHTL, with the Hosea Kutako International Airport defining the northern skyline (Photo 5.3-2).

The sense of place can accordingly be described as an urban like island, defined by bulk infrastructure and urban buildings, located within a larger rural like environment of natural vegetation and mountains.

The proposed Project holds various direct and indirect socio-economic benefits -

- The construction phase of the Project will ensure employment creation (mostly temporary, skilled and unskilled);
- Improved accessibility from and to the B6 Highway supporting increased tourist numbers and export/import to and via international destinations;
- Income to the land owner through the sale of land; and
- The operational phase will ensure continues security in the supply of electricity to the national and regional customers.

Potential negative impacts of low significance are -

Loss of Agricultural Land - The loss of land (18 ha) for commercial agricultural purpose will have a negative socio-economic effect, but considering the income through the sale of land and low carrying capacity of the area, the latter would never have generated the same income than the sale of land.

Power Outage - The HKIA is supplied from the Detmont Substation and the NamPower 11kV reticulation network, which are not affected by the Project. The HKIA will accordingly not be affected by the relocation of the 66kV & 132kV OHTLs.

Electric and Magnetic Fields (EMF) - Electric and magnetic fields are created with the generation and use of electricity and at the frequency of the electrical power system. Various studies have been conducted on the topic of EMF and possible health effects over the last two decades. Based on the parameters for the proposed 132 kV lines it can be concluded that the highest magnetic field exposure can be expected at the conductors. From here it shows an exponential decrease with distance. At a distance of 25 m from the source, the radiation levels are expected to be less than 0.5 µT, which is 99.95% below the prescribed ICNIRP guidelines (2010). (*Hubbard 2018*) The servitude of 25 m from the 66kV OHTL and 132 kV OHTL are sufficient to reduce EMF to acceptable standards. No human settlement or activity exists close to the Project site.

Temporary Obstruction of Traffic - The road to be crossed by the relocation of the 66kV OHTL and 132kV OHTL will be the road under construction (i.e., new B6 Highway) and not the existing B6 Highway. The relocation of the mentioned OHTL will be completed before the new B6 Highway and interchange has been completed, i.e., traffic will remain on the existing B6 Highway. Traffic along the existing B6 Highway will thus not be affected by the Project.

Visual Effect - The section of the 66kV OHTL and 132kV OHTL to be relocated will remain at the same topography as the remaining sections of the OHTLs and will be ±500 m further south from the existing locality. Considering the existing OHTLs and Sungate Township,

located in between the HKIA and the Project, the relocated 66kV OHTL and 132kV OHTL will not be visible within the existing infrastructure.

Workers' Health and Safety - The physical removal of the OHTL infrastructure will be done by an experienced and well qualified contractor, who is directly responsible for construction health and safety of workers. The appointed contractor will under the construction contract be responsible for and liable for any incidents during the relocation of the 66kV OHTL and 132kV OHTL. The construction contract will require compliance with all safety requirements and regulations, as per the applicable Namibian legislation.

Dust Generation - Generation of dust will take place during the vegetation clearance phase of the Project. The area to be cleared (18 ha) is relatively small and located ±2.3 km from the HKIA and 600 m from the Etango Game Range. The significance of dust nuisance expected towards the HKIA is zero, while the nuisance towards the Etango Game Range is expected to be small. Clearance of the new section should be done during times of no winds or low winds (not more than 20km/h) or during the upcoming rainy season.

Bird Collissions - With a similar alignment being followed and similar number of poles and OHTLs to be constructed than removed, the relocated OHTLs are not expected to have less or more of an impact compared to the existing scenario. Potential impacts investigated in more detail having a potential relevance to the construction and operational phase are –

Loss of biodiversity and habitat destruction - The Project will increase the amount of human-generated disturbance to the habitats. This type of disturbance includes destruction of indigenous vegetation, proliferation of alien invasive plants. In the vicinity of the Project site, extensive portions of habitat have been impacted due to developments that occurred with the larger area of the HKIA and Sungate Township. Further fragmentation of the existing habitat onsite will occur under all alternatives and is expected to have similar negative, long-term effects. Given the size of the Project footprint within the larger area and the relatively low sensitivity of the flora and fauna, it can be concluded that the potential impact significance to the flora and fauna is expected to be ***low*** before mitigation, which can be further reduced by applying the suggested mitigations.

Civil Aviation Safety - International Standards and Recommended Practices Annex 14 to the Convention on International Civil Aviation contains Standards and Recommended Practices (specifications) that prescribe physical characteristics and obstacle limitation surfaces to be provided at aerodromes, also prescribe certain facilities and technical services that should be provided at an aerodrome. NAMCARs and NAMCATS-AH stipulates that no object higher than 45 m above the aerodrome elevation may be erected within a distance of 15 km from the aerodrome without written approval of the Executive Director of Namibia Civil Aviation Authority. It is also required that aircraft warning spheres be introduce on OHTLs at road crossings. No part of the sections of both the 66kV and 132 kV OHTL to be relocated lies within the approach path of the main runway or secondary runway (Figure 7.5.2.3-1). Although the OHTL is located within a 15 km radius, the highest monopole structures at a height of 22 m above NGL at an elevation of 1,730 AMSL, will not be higher than 45 m

above the aerodrome elevation. The OHTL to be relocated will be of the same height as the existing and remaining sections of the OHTLs, which has been in existence. Aircraft warning spheres will be introduced on OHTLs at road crossings.

Based on the project information as provided by the Proponent, Consulting Engineer and specialist baseline information, the nature and extend of the Project, setting the sensitivity of the receiving environment, this scoping study concludes that there is currently no evidence indicating that any of the potential impacts identified (see sections 7.5.1 & 7.5.2) are of such significance that it cannot be reasonably mitigated and that the proposed Project, as presented in this report, should not be allowed to continue. It is however required that the mitigations and recommendations as presented in this report and the EMP first be approved by the Environmental Commissioner before the Project can commence.

The findings of this scoping phase conclude that no further detailed assessments are required.

It is the conclusion and recommendation of the EAP that this Project be granted an ECC, subject to the proposed recommendations (section 8.2) and final approval by the Environmental Commissioner as per the Environmental Management Act, No. 7 of 2007.

INTRODUCTION TO THE PROJECT AND THIS REPORT

This chapter of the report provides a background and motivation to the proposed Project; the study's terms of reference; study approach and methodology, purpose of this report; the assumptions and limitations of the study; and an outline of the remainder of the report.

1.1 PROPOSED PROJECT

The project at hand entails the relocation of a small section of the 66kV & 132kV Hosea Kutako Interchange Transmission Line (hereafter referred to as the Project) to enable the construction of the new section of the B6 Highway and interchange within the vicinity of the Hosea Kutako International Airport (HKIA).

The new section of the B6 Highway (Windhoek – HKIA) is being constructed as part of the Trans-Kalahari Highway, which provides linkage to the Port of Walvis Bay and other primary trade corridors, serving the SADC region. The planned traffic interchange off the B6 Highway to the HKIA requires a large area, which is currently taken-up by a small section of the existing 66kV OHTL & 132kV OHTL.

1.2 PROJECT LOCALITY

The Project site is located ±2.2- km south of the HKIA, located some 40 km east of Windhoek within the Kappsfarm Settlement (see Figure 1.2-1).

1.3 NEED FOR AND DESIRABILITY OF THE PROJECT

The relocation of a small section of the 66kV & 132kV Hosea Kutako Interchange Transmission Line is necessary and desirable as this will enable the construction of the new B6 Highway and traffic interchange within the vicinity of the Hosea Kutako International Airport. This road construction forms part of the Trans Kalahari Route upgrade forming a very important cross border road link between Botswana and Namibia's Walvis Bay harbour.

1.4 STUDY TERMS OF REFERENCE

No formal Terms of Reference (ToR) were provided, but rather were inferred from the requirements of the applicable legislation namely the Environmental Impact Assessment Regulations (Government Notice No. 30 of 2012), to enable an application for an ECC with the Environmental Commissioner, as required by Section 27(3) of the Environmental Management Act (No. 7 of 2007).

The purpose of this Study is to apply for an ECC for the relocation of a section of the 66kV and 132kV Overhead Transmission Line at the Hosea Kutako International Airport. All other permits and/or licenses (see section 1.15) required for the operation of the proposed Project still needs to be applied for by the Proponent.

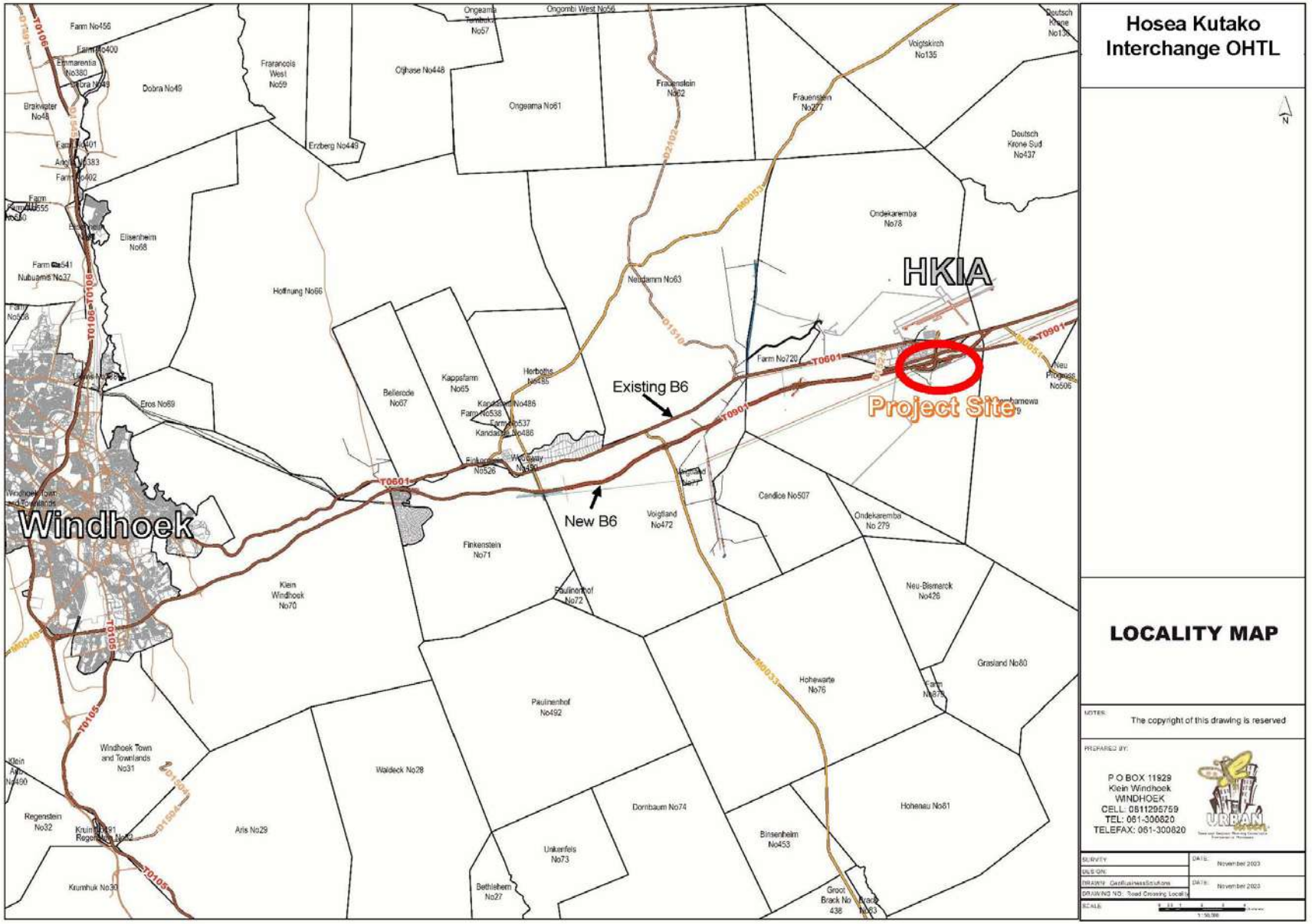

Figure 1.2-1 – Project Site Locality

1.5 STUDY APPROACH AND METHODS

This EA process was carried out in accordance with provisions for EA, as prescribed by the Environmental Impact Assessment Regulations (GN. No. 30 of 2012), provided for by Section 56 of the Environmental Management Act (No. 7 of 2007).

The study's approach and methods were guided by the relevant legislation (Chapter 0).

The EA process is a planning, design and decision-making tool used to inform the relevant authorities and Proponent on what the consequences of their decisions will be in biophysical and social terms. As such, it identifies potential impacts (negative and positive) that the Project may have on the natural and social environments; as well as identifying potential opportunities and constraints the natural and social environment may pose to the Project.

The steps followed as part of this EA process, are (i) registration of application for an ECC, and (ii) execution of a scoping assessment (content of this report). A flowchart indicating the process being followed is presented by Figure 1.5-1 below.

1.5.1 REGISTRATION OF APPLICATION FOR ECC

The first step followed as part of this EA process was to identify the listed activities potentially associated with the Project, as stipulated in the '*List of Activities that may not be undertaken without an Environmental Clearance Certificate'* (GN. No. 29 of 2012) and register the mentioned with the Office of the Environmental Commissioner.

The listed activities for which an ECC was initially applied for are:

"ENERGY GENERATION, TRANSMISSION AND STORAGE ACTIVITIES

The construction of facilities for -

1. (b) the transmission and supply of electricity

In accordance with Section 32 of the EMA, applications for an ECC should be submitted with the relevant Competent Authority, which for this Project was identified to be the Ministry of Mines and Energy and the Ministry of Environment, Forestry and Tourism (i.e. Approving Authority).

The Ministry of Mines and Energy was informed in writing on 1 November 2023 of the Proponent's intention to apply for an ECC with the Environmental Commissioner, with a copy of the application submitted with the office of the Environmental Commissioner with the Ministry of Environment, Forestry and Tourism (Appendix A).

1.5.2 SCOPING ASSESSMENT PHASE

The next step followed as part of this EA process was the scoping assessment. The identification of potential impacts and their significance, as well as public consultation (as prescribed by Regulation 21 to 24 of the EIA Regulations (GN. No. 30 of 2012) are important elements of the scoping stage of a study. Hence, during the scoping stage issues/impacts

that are likely to be significant are identified and those that are less significant are evaluated and if warranted, eliminated.

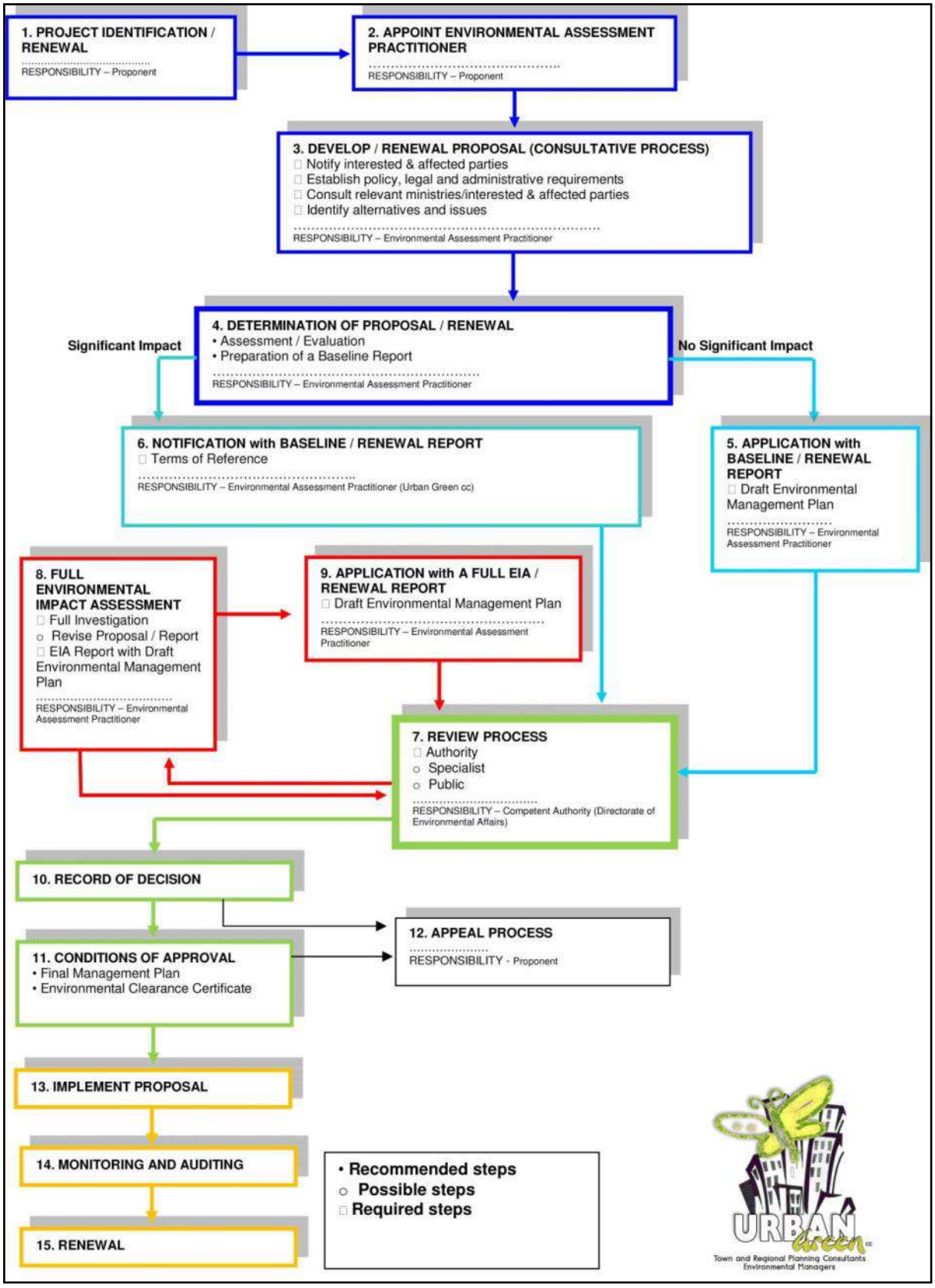

Figure 1.5-1: Diagrammatic representation of Namibia's Environmental Assessment process

1.5.3 METHODOLOGY

The method followed during the scoping stage was as per the requirements set by the Environmental Impact Assessment Regulations (GN. No. 30 of 2012), which included –

- Giving notice to all potential interested and affected parties (I&APs) of the application (ECC application);
- Public consultation as per Regulation 21 which included the -
  - Opening and maintaining a register of all I&APs;
  - Receiving and recording of all comments and representations received from I&APs following the public consultation processes;
- Preparing a scoping report by subjecting the proposed application to scoping by -
  - Assessing the potential effects of the proposed listed activities on the environment (specialist studies also formed part of this stage);
  - Assessing whether and to what extent the potential effects identified can be mitigated and whether there are any significant issues and effects that require further investigation;
  - Identifying feasible alternatives related to the Project;
  - Setting the Terms of Reference for further investigations (if required);
  - Informing I&APs of the way forward in the EA process;
  - Ensuring informed, transparent and accountable decision-making by the relevant authorities; and
  - Inviting all registered I&APs to comment on the scoping report.
- Informing all registered I&APs of the decision of the office of the Environmental Commissioner.

This scoping assessment, which had commenced on 7 November 2023, set out to –

- Collect baseline information and professional/public opinion with regards to the Project and the receiving environment (i.e. social and biophysical environments);
- Determine the manner in which and to what extent the Project may affect the receiving environment, and vice versa;
- Highlight the potential significant effects that are likely to be of most importance and to develop or recommend mitigation measures, and monitoring;
- Establish the need and desirability of the Project; and
- Advise on any further studies to be conducted (if any) during the detailed investigation phase and provide appropriate Terms of Reference for the mentioned.

The way forward for the remainder of the study is as follows -

- This Final Scoping Report (FSR) and Environmental Management Plan (EMP) has been made available to all registered Interested and Affected Parties (I&APs) and Authorities for review and comment;
- After closure of the comment period (21 November 2023), the DSR and EMP were updated to a Final Scoping Report. The latter will be submitted to the Competent Authority (Ministry of Mines and Energy) and Directorate of Environmental Affairs (Ministry of Environment, Forestry and Tourism) for consideration and decision-making;
- After the issuing of the Directorate's decision all registered I&APs and Authorities will be notified of the outcome of the application, as appropriate; and
- A statutory appeal period in terms of Part X, Section 50 of the EMA will follow the issuing of the decision (Clearance Certificate).

1.6 ISSUES AND CONCERNS RAISED & IDENTIFIED

During the screening stage, the following potential issues were identified –

- Socio-economic -
    - Loss of agricultural land (direct negative);
    - Improved accessibility to and from the HKIA (indirect benefit);
    - Continues supply of power to the national & regional grid (direct benefit);
    - Temporary employment opportunity and job creation (direct benefit);
    - Residents' health and safety from EMF (direct negative);
    - Workers' health and safety during construction (direct negative);
    - Temporary power outage (direct negative);
- Temporary obstruction of traffic (direct negative);
- Dust generation (direct negative);
- Visual effects (direct negative);
- Vegetation removal and habitat destruction (direct negative);
- Bird collisions (direct negative); and
- Civil aviation safety as a result of OHTL crossing roads (direct negative).

No concerns were submitted with the EAP as part of the 1st round of public consultation; however NAMCARs Part 139 and NAMCATS-AH regulatory provisions were submitted by the Namibia Civil Aviation Authority, for consideration purposes during the assessment.

During the 2nd round of public consultation, the no additional comments were submitted, for inclusion into this Final Scoping Report.

1.7 PURPOSE OF THIS SCOPING REPORT

This Final Scoping Report (FSR) has been compiled as part of an assessment that has been undertaken for the relocation of a section of the 66kV and 132kV Overhead Transmission Line. This FSR summarises the process followed to date, provides a description of the Project and addresses the issues raised by Interested and Affected Parties (I&APs) during both consultation opportunities. It further provides an assessment of the impacts of the proposed Project along with mitigation measures and recommendations.

The Draft version of this Report was made available for public review and comment from 24 to 01 December 2023, as required by section 23 of the Environmental Impact Assessment Regulations (GN. No. 30 of 2012). Comments received were included into this Final Scoping Report (FSR) submitted with the Ministry of Mines and Energy (i.e. Competent Authorities) and the Directorate of Environmental Affairs (i.e. Approving Authority) with the Ministry of Environment, Forestry and Tourism for decision-making.

After the DEA has reached a decision, all registered I&APs on the project database will be notified of the decision and the requirements of the statutory Appeal Period.

1.8 STUDY ASSUMPTIONS AND LIMITATIONS

In undertaking the EA and compiling the final scoping report, the following assumptions and limitations apply:

- It is assumed that all the information provided by the proponent, appointed consultants and authorities consulted, is accurate and that those aforementioned have disclosed all necessary information available;
- No alternative alignment for the OHTLs to be relocated was provided for purpose of evaluation, as the proposed alignment is the only available viable option considering limited land availability and limited construction funds;
- It is assumed that all permit or licence requirements, other than the ECC, associated with the Project will be addressed as separate investigations and are not included in this EA process;
- It is assumed that there will be no significant changes to the project (see Chapter 0) or the receiving environment (see Chapter 0) between the compilation of this report and implementation of the Project that could substantially influence findings, recommendations with respect to mitigation and management, etc.;
- The EA process involved the assessment of impacts on the current conservation value of affected land and not on either the historic or potential future conservation value; and

- The assessment is based on the prevailing environmental (social and biophysical) and legislative context at the time of writing this report.

1.9 STRUCTURE OF THE REPORT

This report consists of nine chapters as outlined below.

Table 1.9-1 *– Structure of the Report*

SECTION	CONTENTS
Executive Summary	**Executive Summary** Provides an overview of the main findings of the Study.
Chapter 1	**Introduction** Provides a background and motivation to the proposed project; terms of reference; study approach and methods; the study assumptions and limitations; purpose, goals and structure of the Report. It also describes the procedure for submitting comment on the Study.
Chapter 2	**Project Team and Expertise** Provides an overview of the role-players participating in the project as well as their experiences.
Chapter 3	**Legislations Applicable to the EA & Project** Provides an overview of the key legislation having relevance to the environmental assessment and activities associated with the proposed project.
Chapter 4	**Description of the Proposed Project** Provides a description of the physical appearance of the proposed project, land use, service infrastructure, construction and operation activities.
Chapter 5	**The Affected Environment** Describes the details pertaining to the site, the existing physical, biophysical, socio-economic environment of the study area.
Chapter 6	**Details of the Public Participation Process** Explains in detail the entire public consultation process followed as part of this study. Feedback received from registered Interested and Affected Parties and Stakeholders are listed as well.
Chapter 7	**Assessment of Potential Impacts** Describes and assesses the potential impacts of the proposed project. Mitigation measures relevant to the planning; design, construction and operational phases of the proposed Project.
Chapter 8	**Conclusions and Recommendations** Provides a conclusions to the impact assessment study and recommendations for implementation during the planning & design, construction and operation of the proposed Project.

Chapter 9	**References** Provides information on the information referenced in the document.

PROJECT TEAM

This chapter of the report provides an introduction and overview of the various role players on this Project and environmental assessment study, as well as the expertise and qualifications of the environmental consultants and specialists.

1.10 ROLE PLAYERS

The role players in this project are set out in Table 2.1-1.

Table 2.1-1 - The role players

ORGANISATION	PROJECT ROLE
Ministry of Mines and Energy – Electricity Control Board	Competent Authority
Ministry of Environment, Forestry and Tourism Directorate of Environmental Affairs	Decision-making authority for environmental authorization
Namibia Power Corporation (Pty) Ltd	Proponent
Transmission Consulting Services	Project Design Engineer
Urban Green cc – Brand van Zyl	Independent Environmental Consultant (EAP)
Christina Tromp	Ecologist

2.1.1 PROPONENT

Nampower's core business is the generation, transmission, and energy trading, which takes place within the Southern African Power Pool (SAPP), the largest multilateral energy platform on the African continent. NamPower supplies bulk electricity to Regional Electricity Distributors (REDs), Mines, Farms and Local Authorities (where REDs are not operational) throughout Namibia (www.nampower.com.na).

2.1.2 ENVIRONMENTAL ASSESSMENT PRACTITIONER

Urban Green Consultants cc is a multi-disciplinary consultancy, which has been offering innovative and environmentally sound solutions for over 19 years to private-, public- and NGO clients in Namibia. They offer professional services in Environmental Management, and Town and Regional Planning, as well as advice and products in the water and wastewater treatment industry.

1.11 EXPERTISE OF THE EAP AND EIA SPECIALISTS

The qualifications and expertise of the environmental consultants and specialists are set out in Table 2.2-1 below. The CV of the EAP appears in Appendix B.

Table 2.2-1 – Qualifications and expertise of the environmental consultants

NAME	**Brand van Zyl**
RESPONSIBILITY ON THE PROJECT	EAP Public consultation, impact assessment and mitigation formulation, reporting and application for Environmental Clearance
QUALIFICATIONS	M. Degree in Environmental Management; M. Degree Town and Regional Planning; Bachelor of Arts Urban Geography
PROFESSIONAL REGISTRATION	Namibian Council for Town and Regional Planners Member of the Green Building Council of South Africa
EXPERIENCE IN YEARS	17
EXPERIENCE	Brand van Zyl has been involved in various Environmental Impact Assessment studies throughout Namibia and of different kind.
NAME	**Christina Tromp**
RESPONSIBILITY ON THE PROJECT	EAP and Ecologist Ecological baseline assessment, impact assessment and mitigation formulation, reporting and application for Environmental Clearance
QUALIFICATIONS	M. Phil Degree in Environmental Management and Bachelor of Science Degree in Agriculture, majoring in Nature Conservation
PROFESSIONAL REGISTRATION	Environmental Assessment Professional Association of Namibia (EAPAN)
EXPERIENCE IN YEARS	12
EXPERIENCE	Christina Tromp is an educated environmentalist with work experience in the Namibian environment in Rural Development, Agricultural and Environmental sectors. She is a registered Environmental Assessment Practitioner. Her work experience was gathered in most regions of Namibia.

LEGISLATION APPLICABLE TO STUDY AND PROPOSED PROJECT

The Constitution of the Republic of Namibia (1990) is the starting and guiding supreme legislation were the country commits itself to sustainable development through environmental protection and wise resource management. In support to the goal of sustainable renewable resource management, various international treaties and conventions have been agreed to by Namibia. For environmental protection and sustainable renewable resource management to the benefit of all, legislation from different spheres under control of different ministries have been adopted and enacted by Parliament.

There are several sectoral laws that fall under the general rubric of environmental laws. Sectoral laws are generally specific and apply to sectors such as mining, water, forestry and so forth. Any development, such as this, is expected to have certain impacts and would therefore have to comply with some or other legislative requirement/s before commencement.

This chapter provides an overview to the legislation that is applicable to both the assessment process and the various activities of the Overhead Power Line development. It is accordingly divided into:

(i) International Treaties and Conventions;

(ii) The Legal Framework for Environmental Management in Namibia;

(iii) National Sectoral Legislative requirements applicable to the activities of the Project; and

(iv) other relevant legislation and approvals required for the commencement of the Project.

1.12 INTERNATIONAL TREATIES AND CONVENTIONS

The international treaties and conventions applicable to the Project and affected environment worth taking note of are listed below in Table 3.1-1 below.

Table 3.1-1 - International Treaties and Conventions applicable

STATUTE	PROVISIONS	DEVELOPMENT IMPLICATIONS
Convention on Biological Diversity 1992	Namibia is a signatory to the this legally binding instrument for the global conservation and sustainable use of biological diversity. Regulate or manage biological resources important for the conservation of biological diversity whether within or outside protected	Removal of vegetation cover and destruction of natural habitats should be avoided and where not possible minimised.

STATUTE	PROVISIONS	DEVELOPMENT IMPLICATIONS
	areas, with a view to ensuring their conservation and sustainable use. Promote the protection of ecosystems, natural habitats and the maintenance of viable populations of species in natural surroundings.	
The United Nations Convention to Combat Desertification 1994	Focuses on land degradation in the dry lands where some of the most vulnerable ecosystems and people in the world exist.	The Project should adhere to responsible land management and rehabilitation, which contributes to the conservation and sustainable use of biodiversity and the mitigation of climate change.
Stockholm Declaration on the Human Environment 1972	Recognises the need for: *"a common outlook and common principles to inspire and guide the people of the world in the preservation and enhancement of the human environment"*.	The proponent should strive to protection of natural resources and prevention of any form of pollution.
National Policy on Climate Change for Namibia 2011	Seeks to promote the primary government objectives, which include job creation, provision of basic services and infrastructure development, alleviation of poverty and provision of housing. These priorities are generally compatible with the principles of sustainable development as defined in the Rio Declaration of 1992.	Energy production adaptation works toward long-term energy security and energy efficient production technologies and decrease the dependence on non-renewable, volatile and environmentally unsound resources.

1.13 NAMIBIAN LEGAL FRAMEWORK FOR EIA

Several Namibian legislation and policies have environmental considerations with respect to the proposed Project. The instruments accounting for the legal framework for conducting an Environmental Assessment is listed in Table 3.2-1 below.

Table 3.2-1 – Namibian legislation applicable to the EA process

STATUTE	PROVISIONS	DEVELOPMENT IMPLICATIONS
ENVIRONMENTAL ASSESSMENT LEGAL FRAMEWORK		
The Namibian Constitution (1990)	Article 95 (1) states that "*the State shall actively promote and maintain the welfare of the people by adopting, inter alia, policies aimed at… maintenance of ecosystems, essential ecological processes and biological diversity of Namibia and utilization of natural resources on a sustainable basis"* Article 100 stipulates that all natural resources are vested in the state, unless otherwise legally owned. The use of such resources is only allowed within reasonable limits and beyond such limits, permission should be obtained from a competent authority responsible for the use and governance of the concerned natural resources.	The Project should support the provisions of the Namibian Constitution
Environmental Management Act (No 7 of 2007)	Section 3(2) of the EMA provides a set of principles that give effect to the provisions of the Namibian Constitution for integrated environmental management. Section 27(3) stipulates that no party, whether private or governmental, can conduct a listed activity without an ECC obtained from the Environmental Commissioner. Section 40(1) stipulates that an ECC remains valid for a period not exceeding three years, subject to cancellation or suspension.	The Project should adhere to the principles provided in the EMA. An ECC should be obtained for the Project. The Proponent should renew the ECC (if granted) every three years. Renewal will be subject to adherence to EMP.
EIA Regulations 2012 (GG No. 4878 GN No. 29 and 30)	Provides for the process to be followed in undertaking an EIA, stipulating particular requirements with regards to public consultation, the identification of impacts and establishing the significance thereof, as well as the content of an environmental scoping report.	The EA process should be undertaken as prescribed in the EIA Regulations.

1.14 NAMIBIAN SECTORAL LEGISLATIVE REQUIREMENTS

A number of Namibian legislation and policies have environmental considerations in respect of the proposed Project, as listed in Table 3.3-1 below.

Table 3.3-1 - Cross-sectoral legislation applicable to the project

STATUTE	PROVISIONS	DEVELOPMENT IMPLICATIONS
NATIONAL SECTORAL LEGISLATION		
Nature Conservation Ordinance No. 4 of 1975, as amended (This Ordinance, will eventually be replaced by the (draft) Parks and Wildlife Bill)	Protects wild animals and indigenous plants in Namibia. Also governs the conservation of terrestrial birds Prohibits disturbance or destruction of the eggs of huntable game birds or protected birds without a permit. Requires a permit for picking (the definition of "picking" includes damage or destroy) protected plants without a permit. Prohibits the removal of and transport of various protected plant species.	The study area falls within an officially protected area proclaimed under the Nature Conservation Ordinance of 1975, namely the Namib-Naukluft Park. The project site may harbour some of the endemic, endangered and/or protected species as listed in Schedule 9 of the Ordinance. Permits are required for the removal of the listed species.
Forest Act No. 12 of 2001, as amended	Provision for the protection of various plant species. and of the environment. Prohibits the removal of and transport of various protected plant species.	The project site may harbour endemic, endangered and/or protected species Permits are required for the removal of these trees, bushes or shrubs, or any indigenous plants.
Soil Conservation Act No. 76 of 1969, as amended	Prevention and combating of soil erosion; conservation, improvement and manner of use of soil and vegetation, and protection of water sources.	The proposed Project's activities should adhere to the requirements as set in the Act.
Water Act No. 54 of 1956, as amended	Makes provision for a number of functions pertaining to the management, control and use of water resources, water supply and	The Proponent should ensure that water use during the construction

STATUTE	PROVISIONS	DEVELOPMENT IMPLICATIONS
	the protection of water resources. Of importance is that the Act - • Prohibits the pollution of underground and surface water bodies. • Liability of clean-up costs after closure / abandonment of an activity.	and operational phases are as sustainable as possible and that no pollution of any above and/or below ground water resource takes place.
National Heritage Act (Act 27 of 2004), as amended	The Act requires the identification of cultural and archaeological sites within the study area, registration and protection thereof. Heritage sites or remains are defined in Part 1, as "any remains of human habitation or occupation that are 50 or more years old found on or beneath the surface". Part V Section 46 of the Act prohibits removal, damage, alteration or excavation of heritage sites or remains. Part VI Section 55 Paragraphs 3 and 4 require that any person who discovers an archaeological site should notify the National Heritage Council.	All protected heritage resources (e.g. human remains etc.) discovered, need to be reported immediately to the National Heritage Council (NHC) and require a permit from the NHC before they may be relocated.
Electricity Act of 2007	The regulation of electricity transmission activities falls within the jurisdiction of the Ministry of Mines and Energy (MME). The act provides the requirements and conditions involved in obtaining licenses for the generation and provision of electricity. It also addresses the powers and obligation of the licensees and provides for incidental matters.	The Proponent will have to plan and operate in consultation with this Competent Authority.
Hazardous Substances Ordinance No. 14 of 1974, as amended	This ordinance provides 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. It is administered by	During the construction and operation phases, any hazardous waste needs to be handled, stored, and disposed of in a responsible manner and at appropriate waste sites.

STATUTE	PROVISIONS	DEVELOPMENT IMPLICATIONS
	the Ministry of Health and Social Services.	
Atmospheric Pollution Prevention Ordinance No 11 of 1976, as amended	Provides for the prevention of the pollution of the atmosphere. Part IV of this ordinance deals with dust control and provides for the proclamation of dust control areas.	Excessive dust emissions caused during the construction and operational phases should be avoided or mitigated as it could be categorised as causing a public or environmental nuisance under common law.
Public Health Act No. 36 of 1919, as amended Health and Safety Regulations GN 156/1997 (GG 1617)	Section 119 states that "no person shall cause a nuisance or shall suffer to exist on any land or premises owned or occupied by him or of which he is in charge any nuisance or other condition liable to be injurious or dangerous to health."	The Project should both during the construction and operational phases consider and ensure proper human health and safety conditions.
Labour Act No. 11 of 2007, as amended	The Labour Act (No. 6 of 1992), the New Labour Act (no. 11 of 2007) and Government Notice 156 of 1997: Labour Act, 1992: Regulations Relating to the Health and Safety of Employees at Work, governs working conditions of employees. These regulations are prescribed for among others safety relating to hazardous substances, exposure limits and physical hazards. Special consideration must be given to: • Chapter 3: Welfare and Facilities at Workplaces • Chapter 4: Safety of Machinery • Chapter 5: Hazardous Substances • Chapter 6: Physical Hazards and general provision	The Proponent (including their appointed contractors) needs to comply with health and safety regulations pertaining to the health and safety of employees during construction. Operational activities should not result in any potential negative health implications to employees and/or larger community.
Namibia Civil Aviation Regulations (NAMCARs) of 2001, as amended in 2018	Stipulates the requirements for Obstacle Restrictions.	The OHTL may not interfere with aircraft operations to the Walvis Bay airport.

STATUTE	PROVISIONS	DEVELOPMENT IMPLICATIONS
Namibia Civil Aviation Technical Standards – Aerodromes and Heliports (NAMCATS – AH)	No object higher than 45 m above the aerodrome elevation may be erected within a distance of 15 km from the aerodrome without written approval of the Executive Director of Namibia Civil Aviation Authority	It must be verified with the office of Namibia Civil Aviation Authority if permission for the erection of the OHTL must be obtained.
Road Traffic and Transport Act 52 of 1999 and its 2001 Regulations, as amended	Provides for the control of traffic on public roads and the regulations pertaining to road transport, including the licensing of vehicles and drivers. Part 5 of the 2001 Regulations lays out detailed provisions pertaining to vehicle loads – i.e. types of loads and the appropriate manner in which loads for different vehicle classes should be carried.	All personnel and vehicles active during the construction and the operational phase should be appropriately licensed. Construction materials transported/delivered to the construction site should adhere to the requirements of the 2001 Regulations – i.e. should not exceed limits stipulated and should be transported in a safe manner.
Urban and Regional Planning Act, No. 5 2018	Regulates the subdivision/consolidation and change in land uses.	Subdivision and consolidations of land applicable to the substation and neighbouring farm.

While it has been set out to list all those laws and regulations, which regulate the healthy functioning of the environment, it is not necessarily complete, and the proponent has the responsibility to make themselves aware of all applicable legislation and permit requirements applicable to the Project.

1.15 AGREEMENTS, PERMITS, LICENCES AND/OR APPROVALS REQUIRED

The following agreements/permits and/or licenses (Table 3.4-1) should be concluded/obtained prior to construction.

Table 3.4-1 – Permits, licences, approvals and/or agreements that may also be required.

Activity	Type of Permit / Licence	Legislation / Institute
Consent from affected parties for the registration of a servitude for the OHTL.	Right of way servitude	Permission from landowners
Environmental Clearance certificate	Environmental Impact Assessment in progress	Ministry of Environment, Forestry and Tourism
Service road along the OHTL	Approval required	Landowners
Road Crossing	Road Crossing Permit	Roads Authority Namibia Civil Aviation Authority
Evaluation of height of OHTL and distance from HKIA	FSS-AGA-FORM-032 Application	Namibia Civil Aviation Authority
Removal of protected and indigenous species	Permit if required	Ministry of Environment, Forestry and Tourism
Subdivision and consolidation of land	Certificate	Ministry of Urban and Rural Development

DESCRIPTION OF THE PROPOSED PROJECT

The project entails the relocation of a small section of the 66kV & 132kV Hosea Kutako Interchange Transmission Line to enable the construction of the new B6 Highway and interchange within the vicinity of the Hosea Kutako International Airport.

1.16 BACKGROUND INFORMATION

This Project and Study being conducted is an outflow of the current road construction (B6 Windhoek Highway to Hosea Kutako International Airport) forming part of the Trans-Kalahari Highway linking Botswana and other neighbouring landlocked countries with Namibia.

The new road extending from Windhoek to the Hosea Kutako International Airport (HKIA) provides for a large scale traffic interchange providing access of the new B6 Highway to the HKIA. The area affected by the large scale traffic interchange includes a section of the existing 66kV & 132kV Hosea Kutako Interchange Transmission Lines and portion of the Sungate Substation (see Figure 4.1-1).

For purpose of constructing the new B6 Highway and traffic interchange, it has become necessary to relocate the affected section (2km) of the 66kV & 132kV Hosea Kutako Interchange Transmission Lines and Sungate Substation, from their current alignment to a new alignment (see Figure 4.1-2).

Transmission Consulting Services (TCS) was appointed by SMEC Consulting Engineers for the design and implementation of the relocation of the 66kV & 132kV OHTL.

1.17 DESCRIPTION

The Project entails the relocation of a 2 km section of both of the existing 66kV & 132kV Hosea Kutako Interchange Transmission Line and a portion of the Sungate Substation, to secure land to accommodate the proposed traffic interchange providing access of the B6 Highway to the HKIA (see Figure 4.1-1).

This entails the physical removal of the existing transmission lines and pole structure, and erection of new pole structures and reconnecting the transmission lines along a new route, as indicated by Figure 4.1-2.

1.18 LOCALITY AND ALIGNMENT

The Project site is located ±2.2 km south of the HKIA, located some 40 km east of Windhoek within the Kappsfarm Settlement (see Figure 1.2-1).

The alignment of the section to be relocated will deviate from the existing 66kV OHTL and 132kV OHTL alignment slightly southwards and parallel from the existing alignments to bypass the proposed road and intersection, as indicated by Figure 4.1-2.

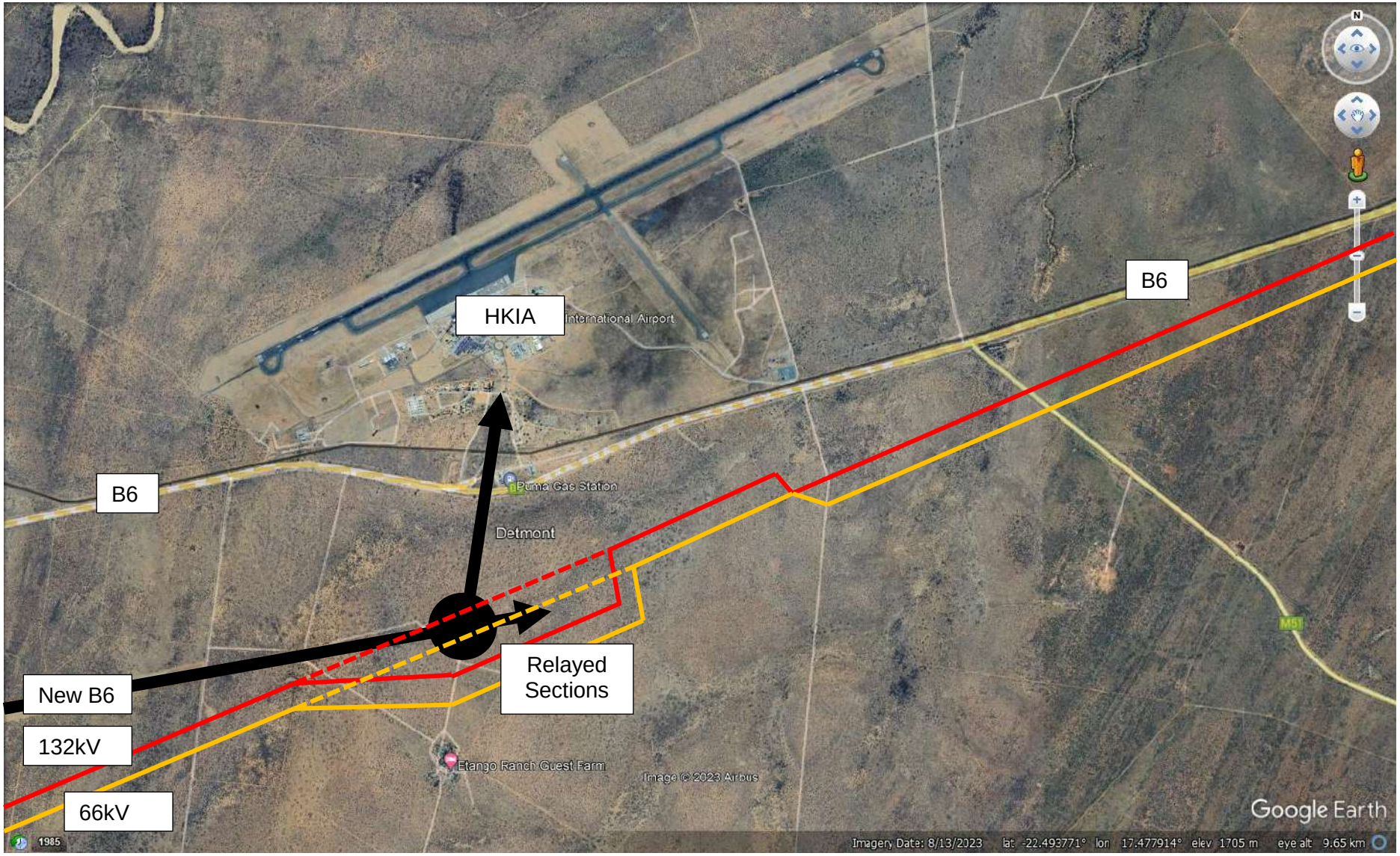

Figure 4.1-1: Area of OHTLs Affected by New B6 Road & Intersection

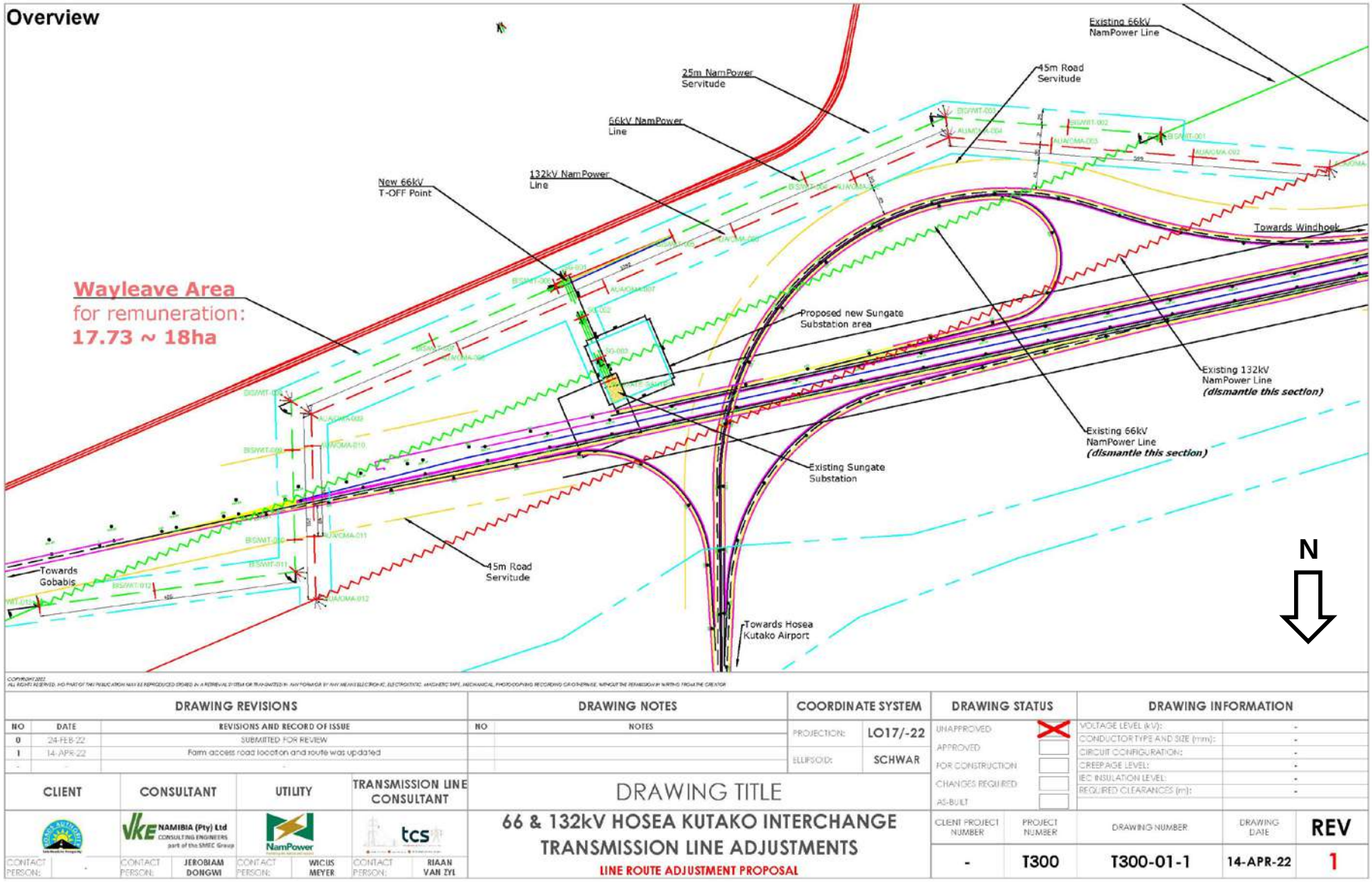

Figure 4.1-2 – Realignment of the section of the OHTLs to be reloacted

4.3.1 EXISTING TRANSMISSION LINES

The 66kV OHTL (12 m high structure) extends from the Bismarck Substation to the Witvlei Substation, while the 132kV OHTL (23 m high structure) extends from the Auas Substation to the Omahere Substation supplying power to Witvlei and Gobabis respectively, as part of the transmission network of NAMPOWER.

The 66kV OHTL feeds into the Sungate Substation, again distributing into the Sungate Township. The HKIA is supplied from the Detmont Substation and the NamPower 11kV reticulation network, which are not affected by the Project. The HKIA will accordingly not be affected by the relocation of the 66kV & 132kV OHTLs.

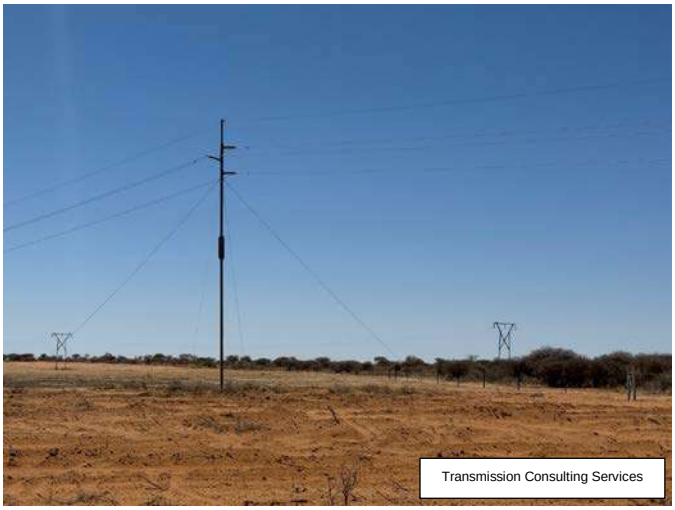

Photo 4.3.1-1 – View of existing 132kV OHTL (front) and existing 66kV OHTL (back)

4.3.2 SUB STATION

The existing Sungate Substation, also located south of the existing B6 road, is partially located within the alignment of the proposed new B6 Highway and interchange. While the existing infrastructure will remain, the fence-in area of the Sungate Substation will be relocated from the existing locality ±15 m south to provide for enough space for the new B6 Highway and traffic interchange (see Figure 4.1-1 & 4.1-2).

Photo 4.3.2-1 – View of existing Sungate Substation

1.19 NEW INFRASTRUCTURE DESIGN AND SPECIFICATIONS

4.4.1 SPECIFICATION OF OVERHEAD TRANSMISSION LINE (OHTL)

The to be constructed physical infrastructure consists of a single-circuit 66kV OHTL and single-circuit 132kV OHTL fixed to galvanized steel monopole structures, which are typical structures used by NAMPOWER throughout the rest of the Country.

The structures are a combination of freestanding intermediate (Photo 4.4.1-1) and angle structures to be stayed at bends (Photo 4.4.1-2), designed according to SANS10280 (IEC60826).

The monopole structures to be erected are 20.6 to 24.6m in length of which 2.6 to 3 m will be underground, resulting in an above ground structure of 18 m in height. The height of the monopole structures on both sides where the OHTLs crosses the B6 Highway will be 22 m above ground to ensure a safe passing distance underneath.

The span width between the monopole structures will be approximately 200 to 260 m. Aircraft warning spheres (600 mm diameter) will be installed over the section of the relocated OHTLs crossings the B6 Highway. This is to ensure visibility of the OHTLs to approaching aircraft in the event of an emergency landing.

Photo 4.4.1-1 - View of single-circuit monopole structure

Photo 4.4.1-2 - View of single-circuit angle pole structure with stays

The monopole structures will be secured by means of a concrete foundation casted around the footing of the pole structure of a dimension of 3 m (depth) x 2.4 m (width) x 2.4 m (width). Foundations will be embedded with 50 mm concrete cover for corrosion protection.

The angle poles will be equipped with 5 or 7 12 mm galvanized steel wires (see Photo 4.4.1-2), to which a yellow uPVC warning pipe is installed for visibility.

Pelican ACSR single circuit conductors will be installed on these steel monopoles with Line Post insulators on the suspension structures and Longrod tension insulators on the bend and/or terminal poles. The 132kV OHTL will be equipped with a 48FO Single Mode Fibre (SMF) Optical Ground Wire (OPGW) at the top of the monopoles to provide the communication between substations and lightning protection for the conductors below. The 66kV OHTL will be equipped with a 7 x 3.51 mm Galvanized Steel Wire for lightning protection.

A lightning spike is situated at the top of the pole to attract the lighting to the pole in order to avoid strikes on the conductor and shield wire. A 7 x 4 mm GSW pole earth wire will be attached to the bottom of the pole at an earth lug attachment point.

The line design will meet and possible exceed, where necessary, all SANS 10280 standards and specifications (latest edition). The galvanizing drainage holes will be closed with the use of Bee Plugs supplied by the pole manufacturer. These will be installed by the contractor.

The Technical Submission Report from TCS Transmission Consulting Services is available from the offices of Urban Green cc.

4.4.2 OVERHEAD TRANSMISSION LINE SERVITUDE

The servitudes of the two OHTLs are based on Nampower's prescribed servitude widths.

As both the 66kV OHTL and 132kV OHTL follows the same alignment within the vicinity of the study area, the relocated 66kV OHTL and 132kV OHTL will continue to follow the same alignment passing south of the planned traffic interchange (see Figure 4.1-1). The section of the existing servitude affected by the road will be cancelled and reregistered according to the new alignment.

The required servitude width of the OHTL centreline is 25 m to either side. In this instance the distance between the 132kV OHTL and the 66kV OHTL is 31 m, which results in the total width of the combined servitudes to 81 m.

4.4.3 SUPPORTING INFRASTRUCTURE

The service road will be similar to the existing sections follow the alignment of the OHTL and be located within the 81- m servitude.

4.4.4 SUNGATE SUBSTATION

The Sungate Sub-Station infrastructure will remain as is, with only the fenced-in area being relocated to provide for the required space for the new B6 Highway and traffic interchange.

1.20 CONSTRUCTION PHASE

Relocation of the proposed OHTL is expected to take ±2 months and will involve the following tasks:

- Setting-out of the alignment of the OHTL, poles' locality within the alignment;
- Setting-out of the temporary construction camp and laydown area for infrastructure and equipment (no temporary accommodation and amenities for construction workers are allowed);
- Clearing of vegetation within the boundaries of the temporary construction camp with laydown area;
- Clearing of vegetation at the point where concrete base for pole structures will be casted (if so required);
- Transportation of construction material (i.e. steel mono poles, conductors, insulators, etc.) and storage at temporary construction camp;
- Digging of holes of 3 m (depth) x 1.4 m (width) x 1.4 m (width) for the monopole structures with a drill or TLB, depending the underground conditions;
- Placement of monopole structures within the excavated areas and backfilled with concrete and anchoring;
- Once the concrete base is dry, insulators will be fixed to the monopole structures and conductors strung between poles making use of human labour and machinery;
- Connection to substation and commissioning; and
- Rehabilitation of the disturbed areas.

The impacts expected to occur during the construction phase, the assessment therefore and the mitigations recommended are discussed in more detail in Section 0, while the environmental requirements are listed in much detail within the Environmental Management Plan (EMP), attached in Appendix D.

1.21 OPERATIONAL PHASE

Some of the typical operational phase activities might include the following:

- Clearance of vegetation along the power line servitude and within the fenced-in area of the substation site;
- Bi-monthly inspections to check for signs of wear and tear, which is done by foot and vehicle;
- Replacement of damaged or malfunctioning infrastructure; and
- Emergency maintenance.

The impacts expected to occur during the operational phase, the assessment therefore and the mitigations recommended are discussed in more detail in Section 7.5.2, while the environmental requirements are listed in much detail within the Environmental Management Plan (EMP), attached in Appendix D.

1.22 DECOMMISSIONING

OHTL of this magnitude and scale are hardly decommissioned and/or closed, basically as a result of the initial cost (i.e., land and construction cost) and long life expectancy of the materials. Upgrading of an existing OHTL makes more financial sense than decommissioning and the construction of a complete new OHTL.

A complete decommissioning exercise would include the following:

- Demolishing and removal of all temporary and permanent structures;
- Disposing of building rubble;
- Preparation of disturbed areas and recovery of biological soil crust;
- Search and relocate of local indigenous vegetation onto the site;
- Rehabilitated vegetation patch; and
- Rehabilitation monitoring.

Given the nature of the activities associated with decommissioning, the expected impacts are very similar to that of the construction phase (see section 0), as is the case with the required mitigations to be applied.

THE AFFECTED ENVIRONMENT

This chapter describes the details pertaining to the larger study area's existing biophysical and socio-economic environments, which defines the sensitivities to be considered during the planning, construction and operation of the Project.

This chapter provides base line information according to which the likely negative and positive impacts of the Project will be assessed, as well as the significance thereof (as presented in section 7.5), which in turn will inform the applicable mitigating measures and need for any further detailed assessments. A great deal of this chapter is derived from site visits and baseline specialist input.

1.23 PHYSICAL ENVIRONMENT

5.1.1 PERI-URBAN LAND USES AND ACTIVITIES

Kappsfarm settlement is a peri-urban area characterised by a mixture of urban and rural land use activities, with well-developed infrastructural networks. The Settlement area is situated to the east of Windhoek.

This settlement area experienced rapid growth over the last few years resulting in linear developments of different kinds along the B6 Windhoek-Gobabis highway. The immediate surroundings to the Project site accommodate a variety of activities and supporting land uses of agricultural nature (livestock and game), low-density eco-estates, agricultural-educational purpose (UNAM - Neudamm Campus), as well as the Hosea Kutako International Airport (commercial nature).

5.1.2 INFRASTRUCTURE AND SERVICES

The area is infrastructural well developed with the B6 Highway (Windhoek-Gobabis) and railroad passing through the settlement area. The existing B6 Main Road has recently (2006/7) been upgraded (double lanes at various places, and resurfaced), while the construction of the new B6 Highway has commenced during 2022, which would further improve effective and efficient traffic flow between Windhoek and the HKIA. Water and electricity to the larger developments, such as Finkenstein Nature Estate, Herboth's Blick Nature Estate, Neudamm Agricultural Campus of UNAM (only on request from UNAM during dry seasons) and HKIA, are supplied by Namibia's national bulk suppliers (NAMWATER and NAMPOWER).

Farming and tourism activities within the surrounding area are dependent on boreholes for water supply. Wastewater is treated by each activity individually. The larger activities such as Finkenstein Nature Estate, Herboth's Blick Nature Estate, Neudamm Agricultural College and HKIA all have their own wastewater treatment plants. Wastewater on farms is treated by means of french drains. Domestic waste is also treated by each development individually. The larger developments such as Finkenstein Nature Estate, Herboth's Blick Nature and HKIA have separate agreements with the City of Windhoek and private waste removal agencies responsible for collection, transport and disposal of all domestic waste at

the Kupferberg waste site. Neudamm Agricultural College has a system whereby locally generated waste is incinerated at the farm.

5.1.3 GEOLOGY, HYDROLOGY AND SOILS

The larger surrounding area is characterised by Kuiseb Formations (north-western parts), Nosib and Hakos Groups of the Damara Sequence, and Hohewarte Complex of the Rehoboth Sequence.

The geological units underlying the study area (Figure 5.1.3-1) include rocks of the Hohewarte Metamorphic Complex (paragneiss, migmatites, and gneiss); Hakos Group rocks (amphibole / graphite schist); Nosib Group schist and Swakop Group (Kuiseb Formation quartzite and mica schist).

Numerous geological faults have been mapped with a general northeast orientation in the direction of the Seeis River and aquifer. The Seeis aquifer is approximately 11 km north-east from the edge of the proposed development. Quaternary sediments are present as river alluvium and terrace deposits (such as in the Seeis River). The older rocks, namely, the Hohewarte Metamorphic Complex, Hakos, Nosib and Swakop group rocks form fractured aquifers while the river alluvium along the Seeis River forms a porous phreatic aquifer.

Soils of the larger surrounding area are dominated by Eutric Regosols being a fertile soil with high base saturation (Mendelsohn, 2003). Regosols are medium- or fine-texture soils of actively eroding landscapes. These soils never reach depths of more than 50 cm and are especially susceptible to erosion where there is any degree of slope. Erosion, of limited extent, is evident along the hill slopes situated within and around the study area. Vegetation cover on these thin soils is sparse and the soil is not capable of providing sufficient water or nutrients to plants. Areas of Regosols are regarded as areas suitable for low-density stock or wildlife farming.

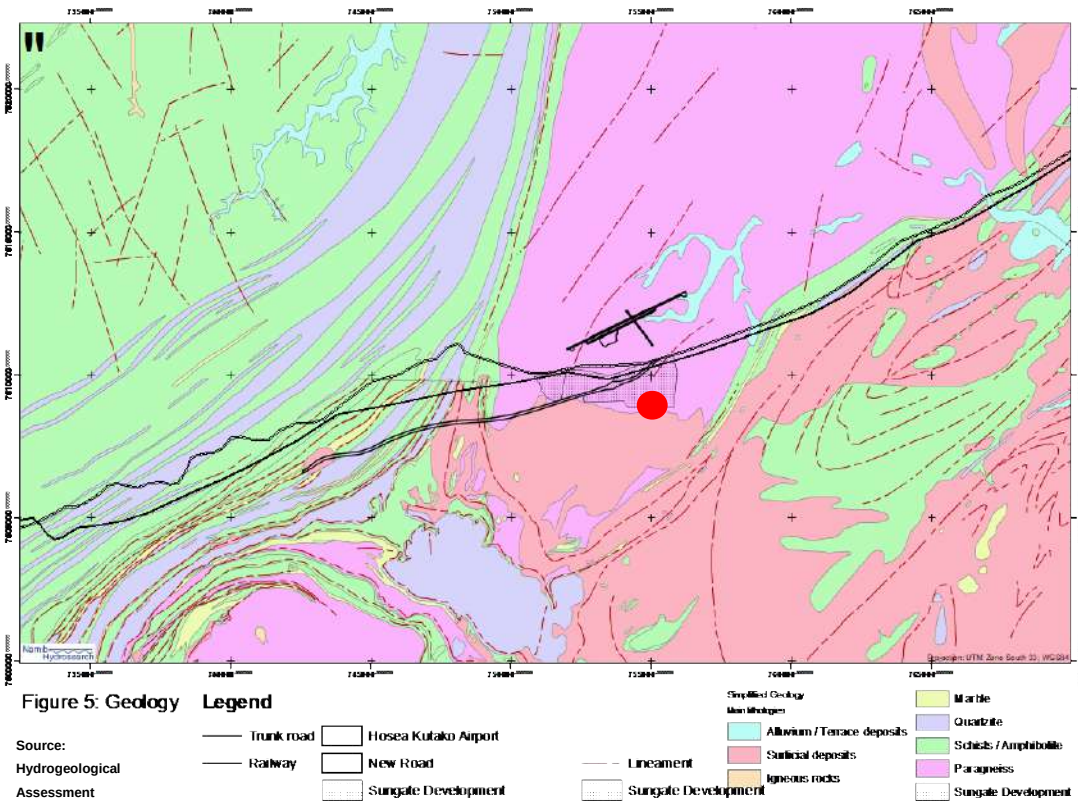

Figure 5.1.3-1 - Geology

5.1.4 TOPOGRAPHY AND DRAINAGE

The study area and larger surrounding area forms part of the Khomas Hochland Plateau consisting of rolling hills in the western parts becoming less hilly towards the east (Figure 5.1.4-1).

The proposed development is situated immediately east of the peneplain representing the highest point on the way to Gobabis. This peneplain forms a major water divide in central Namibia. The proposed development is located within the larger catchment area of the Seeis River, an ephemeral river, draining in a south-easterly direction towards the Seeis River. The Seeis River, via the Olifants River, contributes towards the Kalahari and Orange River drainage.

The study area has a moderate topography with a ground slope and groundwater flow towards the north-east to the Seeis River and Seeis aquifer.

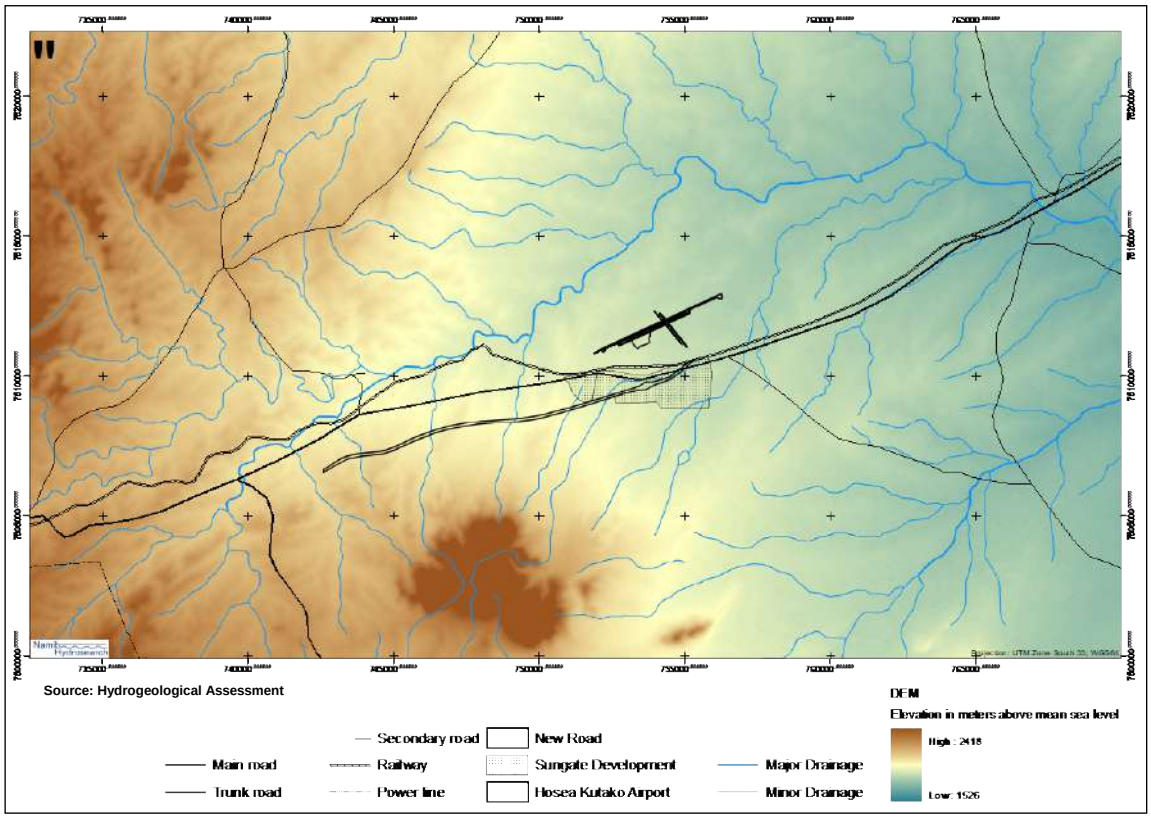

Figure 5.1.4-1 – Topography and Drainage

5.1.5 CLIMATE AND RAINFALL

The climate in the study area is semi-arid with an average rainfall of 350 - 400 mm per annum (Mendelsohn et al., 2003). Most rain falls during the summer months (December to March) predominantly taking place as thunderstorms. Due to its location, temperatures are moderate during summer (average maximum 30 – 32 °C) and cold (average minimum 2 – 4 °C) during winter. Frost occurs on average 20 - 30 days per annum. Average annual evaporation range between 1,960 and 2,100 mm/year. Radiation levels are between 6.0 – 6.2 kilowatt-hours per square meter per day (Mendelsohn et al., 2003).

Characterised by thunderstorms, a low per annum rainfall and high temperatures during the rainy season results in high run-off and evaporation restricting aquifer recharge and increases erosion.

5.1.6 WATER AVAILABILITY AND QUALITY

The study area falls within the Windhoek-Gobabis Underground Water Control Area (Government Gazette No. 3218, 23 July 1971). These areas under control of the Ministry of Agriculture, Water and Land Reform are subject to controlled abstraction of water, as well as ground water pollution.

The Hydrogeological map of Namibia identifies the general area as having ‘low groundwater potential’ (Figure 5.1.6-1), but bands of fractured Hakos Group quartzite (with minor

conglomerate) underlie part of the proposed development and are classified as having 'moderate groundwater potential'.

Groundwater levels to the immediate east underlying the Hosea-Kutako airport are deep leading to a thicker unsaturated zone (or depth from ground surface to the water table). A zone of deep groundwater levels is noted directly south of the airport. The deeper the groundwater level, the higher the possibility that pollutants will be absorbed in the unsaturated zone.

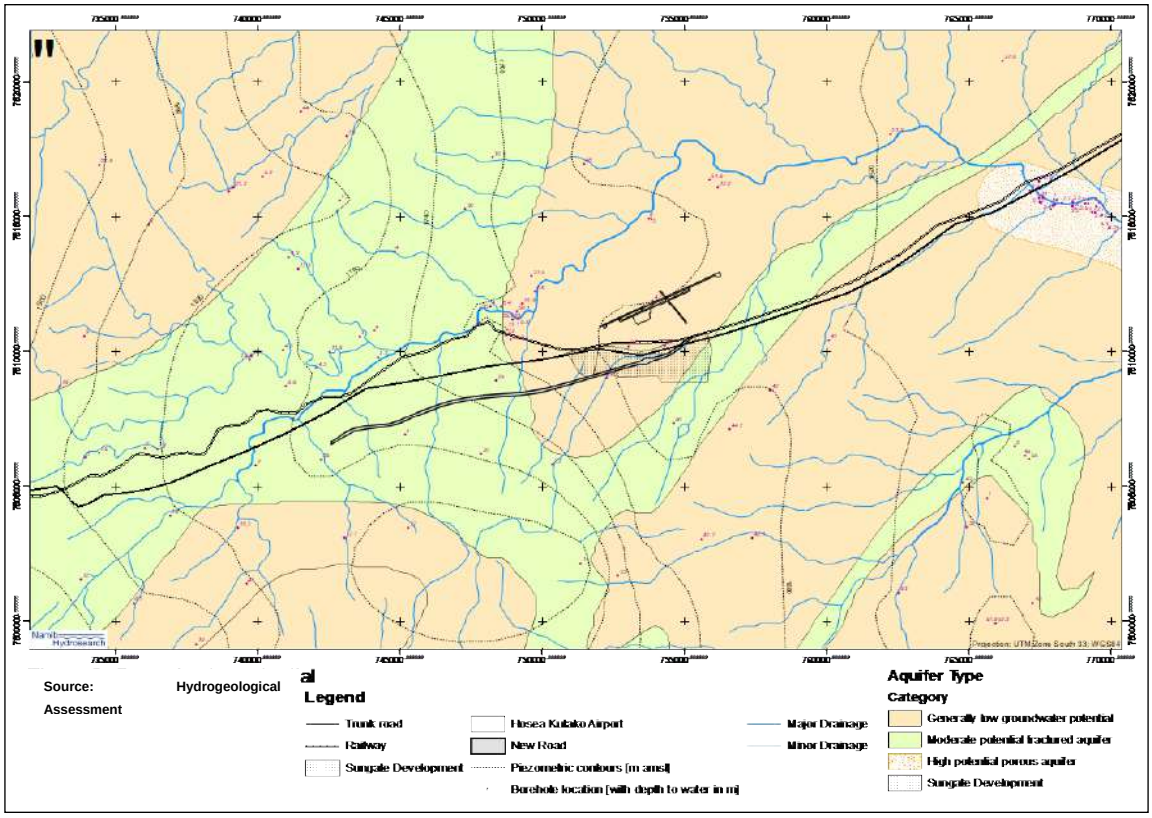

Figure 5.1.6-1 – Groundwater Potential

The overall groundwater quality of the immediate surrounding area (Figure 5.1.6-2) as determined by the total dissolved solids (TDS) in groundwater indicates TDS levels between 500 and 1,000 mg/l for most of the project area. A few pockets of higher salinity water are located away from the proposed development area.

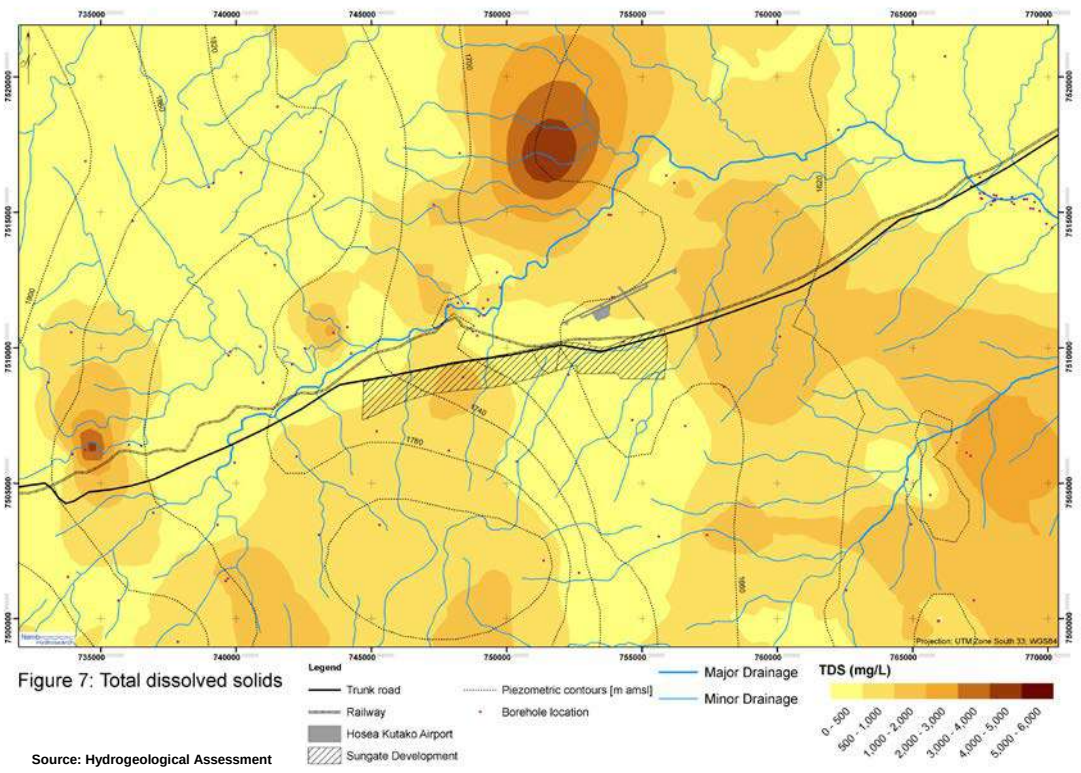

Figure 5.1.6-2 – Total Dissolved Solids

1.24 BIO-PHYSICAL ENVIRONMENT

The natural environment and landscape are characterised by a gentle topography with occasional hills, and the Bismarck Mountain situated to the south of the HKIA.

The natural vegetation is classified as ''Acacia Tree and Highland Savanna'', which is characterised by larger, open expanses of grasslands and various densities of Acacia trees. Farming practices (domestic stock and game) have impacted severely on vegetation, resulting in a change to a woody – often densely so – Acacia dominated woodland. The Project site is situated within the Namatanga Conservancy, a freehold (commercial area) conservancy extending over an area of ±125,000 ha.

The vegetation within the area is predominantly of three types –

- Acacia grasslands, made up of grasslands peppered with acacia thickets;
- Riverine corridor vegetation, made up of slightly denser linear runs of trees; and
- Disturbed agricultural landscapes, including small woodlots.

5.2.1 FLORA

Central Namibia in general, which includes the Project site, is classified as Highland Scrubland (Mendelsohn *et al.* 2002) or Highland Savanna (Giess 1971). Grasses vary according to the soil type and/or current and past farming activities, but palatable climax species are often dominant.

According to Maggs (1998) there are approximately 4 344 higher plant species with the most species being within the grasses (422), composites (Asteraceae) (385), legumes (Fabaceae) (377) and fygies (Mesembryanthemaceae) (177), recorded from Namibia. Plant diversity in the Windhoek area is estimated at >500 species with >35 species being endemic.

The larger surrounding area has been heavily utilized in the past as a result of continuous heavy stocking rates with domestic stock and game consequently affecting the vegetation in the area. Palatable grasses have declined at the expense of unpalatable annual species and herbs. All this affects the local habitat over time.

(i) Tree & Shrub Diversity

The local Highland Savannah vegetation is characterised by trees of various *Acacia* species such as *Acacia erubescens, A. hereroensis and A. reficiens* and *Combretum apiculatum* subsp. *apiculatum* (Giess 1971). The dominant trees/shrubs in the proposed development area are *Acacia hebeclada*, *A. mellifera*, *Lycium eenii* and *L. hirsutum*.

Photo 5.2.1-1 – *Acacia erioloba, Lycium* sp., *A. mellifera*

Photo 5.2.1-2 – *Acacia erioloba, A. hebeclada*

A total of 17 different trees & shrubs were identified in the proposed Project site and surroundings. None of the tree & shrub species that are found in the proposed development site is endemic although four species (*Acacia erioloba*, *Boscia albitrunca*, *Rhus lancea* & *Ziziphus mucronata*) are protected under the Forestry Ordinance No. 37 of 1952 and/or Forest Act No. 72 of 1968 (Curtis & Mannheimer 2005). *Acacia erioloba* is not allowed to be removed or pruned without permission from the Ministry of Agriculture, Water and Land Reform.

No *Commiphora* species (*C. africana*, *C. glandulosa*, *C. pyracanthoides*, *C. angolensis*, *C. tenuipetiolata*, *C. glaucescens* & C. crenato-serrata) were observed in the larger area, but not to be affected by the proposed Project site.

Four *Aloe* species potentially occur in the Highland Savannah, Windhoek area, although none were observed in the proposed Project site.

(ii) Grass Diversity

From the rapid-assessment and literature review, it is estimated that at least 97 grasses occur in the larger area and central Namibia, area. The grasses associated with the Highland Savannah vegetation type expected from the area are climax grass species *(Anthephora pubescens*, *Brachiaria nigropedata* and *Digitaria eriantha)* as well as a variety of other valuable grasses (Giess, 1971). Selective and over grazing has resulted in many of the above valuable grazing species declining (Giess, 1971).

None of the grasses in the proposed Project site is endemic to Namibia. The dominant grasses in the area are *Eragrostis trichophora*, *Sporobolus fimbriatus* and *Schmidtia pappophoroides*.

The four species of grasses endemic to Namibia (*Eragrostis omahekensis, Eragrostis scopelophila*, *Pennisetum foermeranum* & *Setaria finite)* are expected from the general area (Müller, 2007).

5.2.2 VERTEBRATE FAUNA

Central Namibia in general - which includes the Project site - is rich in reptile, amphibian, mammal and bird species diversity (Brown *et al.*, 1998; Griffin, 1998a/b/c).

It is estimated that at least 78 species of reptile, 13 amphibian, 75 mammal and 173 bird species (breeding residents) occur in the general/immediate area of the proposed Project site of which a high proportion are endemics.

(i) Reptile Diversity

At least 78 species of reptiles are expected to occur in the area with 21 species being endemic. These consist of at least 36 snakes (3 blind snakes, 1 thread snake, 2 pythons, 5 burrowing snakes & 25 typical snakes), 8 (22%) of which are endemic to Namibia, 2 tortoises and 1 terrapin and 34 lizards, 13 (38%) of which are endemic to Namibia. Namibia, with approximately 129 species of lizards (Lacertilia), has one of the continent's richest lizard fauna (Griffin, 1998a). Geckos have the highest occurrence of endemics in the area, with 8 species or 89% of all the geckos (38% of all endemics) expected and/or known to occur in the area, being endemic to Namibia.

(ii) Amphibian Diversity

At least 13 species of amphibians occur in the general area with 3 toads, 2 rubber frogs, 2 puddle frogs and 1 each for bull frog, sand frog, kassina, rain frog, cacos and platanna expected (i.e. potentially could be found in the area) to occur in the general area. Three species (23%) are endemic to Namibia.

No natural permanent surface water (excluding farm dams) (typical amphibian breeding places) exists in the area and is limited to temporary pools after localised showers in the area.

The overall frog diversity and endemism in the Windhoek area is estimated at between 8-11 species (Mendelsohn *et al.*, 2002) while Griffin (1998b) suggests 11 species from central Namibia.

(iii) Mammal Diversity

At least 75 species of mammals are expected to occur in the Detmont/Windhoek area of which 3 species (4%) are endemic to Namibia. At least 30% of the mammalian fauna that are expected to occur in the area are represented by rodents (23 species). Carnivores (22% - 17 species) and bats (17% - 13 species) are also well represented in the area. Important habitats often not realised and/or neglected include rivers (including ephemeral drainage lines) and their associated vegetation. Habitat alteration and over utilisation are the two primary processes threatening most mammals (Griffin, 1998c).

According to Griffin (1998c) the endemic mammal fauna is best characterized by the endemic rodent family *Petromuridae* (Dassie rat) and the rodent genera *Gerbillurus* and *Petromyscus*, all of which occur or are likely to occur in the Detmont/Sonnleiten area. The overall mammal diversity and endemism in the general Windhoek area is estimated at between 61-75 species and 5-6 species, respectively (Mendelsohn *et al.*, 2002).

(iv) Avian Diversity

At least 173 species of terrestrial ["breeding residents"] birds could occur around the area at any time (Maclean, 1985; Tarboton, 2001). This excludes all aquatic species (freshwater), migrant and vagrant species that could also be found in the area depending on rainfall and temporary pools in the area and season or food availability.

At least 8 endemic species (57% of all Namibian endemic species or 5% of the species expected to occur in the area) can or are likely to occur in the general area either permanently or environmental conditions allowing. The Project site does not fall within an Important Birding Area (IBA) although the Naukluft (Namib-Naukluft Park), situated approximately 200 km towards the west of Windhoek, is one of the closest 21 IBA's in Namibia (Simmons 1998).

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 high in the general Windhoek area with >230 species (this would include migrant species) estimated (Mendelsohn *et al.*, 2000).

1.25 VISUAL AESTHETICS AND SENSE OF PLACE

The larger surrounding area's visual aesthetics, which defines the sense of place, is directly defined by the urban-rural character and natural environment. To the south of the Project site, the landscape is defined by large open areas used for commercial agricultural and tourism activities, with the Bismark Mountains defining the skyline (Photo 5.3-1). The norther side of the Project site is again defined by bulk infrastructure, such as the existing B6 Highway, the new B6 Highway and interchange being constructed, as well as the 66kV

OHTL and 132kV OHTL, with the Hosea Kutako International Airport defining the northern skyline (Photo 5.3-2).

Photo 5.3-1 – View of the larger surrounding area southwards from the B6 Highway towards the Project Site

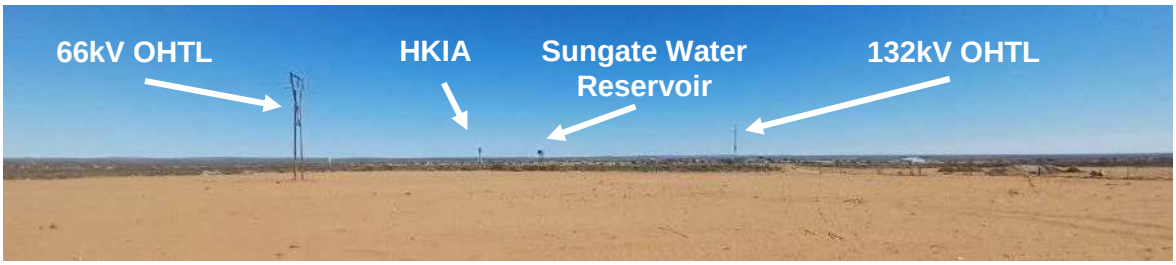

Photo 5.3-2 – View of the larger surrounding area northwards from the Project Site towards HKIA

The immediate area adjacent north to the Project site has been severely disturbed for purpose of the road and traffic intersection (Photo 5.3-3).

Photo 5.3-3 – View of the immediate area north of the Project Site

The sense of place can accordingly be described as an urban like island, defined by bulk infrastructure and urban buildings, located within a larger rural like environment of natural vegetation and mountains.

With such an urban like sense of place existing, the grey colour and structure type (i.e., mono pole), the relocated section of the 66kV OHTL and 132kV OHTL will hardly be visible in the far distance or have any effect on the existing sense of place.

1.26 SOCIO-ECONOMIC ENVIRONMENT

Kappsfarm Settlement, within which the Project is located, falls under the jurisdiction of the Windhoek Municipality. The larger Settlement consists of various smaller residential settlements (e.g., Finkenstein Nature Estate, Herboth's Blick Nature, Sonnleiten Estate) and the Sungate Township, all under private management. Tourism, agriculture (livestock and game) and smaller light industrial activities are the main economic activities throughout the Settlement boundaries. The area is a popular residential, retirement, and tourism destination that is growing in local and international popularity.

The area of the HKIA and surroundings has become a prominent economic hub, which is expected to develop further with the completion of the new B6 Highway ensuring improved accessibility for tourists and international export/import markets.

PUBLIC PARTICIPATION PROCESS

Public consultation and participation are an important aspect of an EA process. During public consultation, potential impacts that the proposed project may have on the natural and/or socio-economic environments, were identified. Consultation with Interested and Affected Parties (I&APs) and relevant Authorities enables transparent decision-making.

This chapter describes in detail the full extent of the public consultation process that was followed and the I&APs and authorities that were notified of the study being undertaken. It also includes the main issues and concerns raised during the public consultation process and comments received on the Background Information Document (BID) distributed during the first round of public consultation.

Public consultation for the purposes of this study was done as prescribed by Regulations 21 to 24 of the Environmental Impact Assessment Regulations (GN. 30 of 2012).

6.1 PUBLIC ENGAGEMENT

6.1.1 FIRST ROUND OF CONSULTATION

Engagement with the public and authorities as part of the first round of public consultation commenced on the 7th of November 2023 and concluded on the 21st of November 2023. During the first round of consultation, I&APs and authorities were given an opportunity to register and submit comments and/or concerns on the proposed project.

(i) Activities of Public Engagement

Activities undertaken to date to ensure effective and adequate I&AP involvement, are as follows:

- A list of predetermined I&APs and authorities was compiled. A total of 23 I&APs were included on the database (Appendix C1).
- A notification and invitation email (Appendix C2) with Background Information Document (BID) (Appendix C3) was send to all pre-identified I&APs and authorities (Appendix C1) on 7 November 2023.
- Notification letters (Appendix C4) were hand delivered on 7 November 2023 (Appendix C5) to all applicable Line Ministries & State-owned Enterprises situated in Windhoek (Appendix C1).
- Notification letters (Appendix C6) were sent via registered post (Appendix C7) to the neighbouring property owners (Appendix C1) on 6 November 2023.
- Public notices announcing the commencement of the EA and an invitation to register as an I&AP were placed in the ‘Die Republikein’ and ‘The Namibian’ newspapers on 7 & 14 November 2023 (Appendix C8).

- A notice board (with the dimensions 60cm x 42cm) was placed at the Project Site, Khomas Regional Council; and the Windhoek Municipality customer care centre notice board (Appendix C9).

(ii) Comments Received and Responses Provided

All comments and feedback received from I&APs and Authorities are summarised in Table 6.1.1-1 below, while a copy of the original correspondence is attached as Appendix C10. A total of three I&AP was registered (Appendix C11).

Table 6.1.1-1: Comments received during the first round of public consultation

NO.	NAME	COMMENTS	NAME	RESPONSE
1.	Namibia Civil Aviation Authority Executive Director PA Hambeleleni N. Shafa (17/11/2023)	Dear Mr. van Zyl, Kindly find the attached for your attention. With kind regards, Hambeleleni N. Shafa Personal Assistant|Office of the Executive Director | Namibia Civil Aviation Authority (NCAA) (Tel) +264 83 235 2102 | (Mobile) +264 81 6582702| (E-mail) EDPA@ncaa.na Namibia Civil Aviation Authority Building, Number 12 Rudolf Hertzog Street, Windhoek Namibia Private Bag 12003 Windhoek, Namibia	Urban Green cc	
	Namibia Civil Aviation Authority Executive Director Toska Sem	Dear Mr. van Zyl, SUBJECT: APPLICATION FOR AN ENVIRONMENTAL CLEARANCE CERTIFICATE FOR THE PROPOSED RELOCATION OF A SECTION OF THE CURRENT 66KV AND 132KV HOSEA KUTAKO INTERCHANGE TRANSMISSION LINE AND SUB STATION AT HOSEA		

NO.	NAME	COMMENTS	NAME	RESPONSE
		KUTAKO INTERNATIONAL AIRPORT (KHOMAS REGION) Reference is made to your correspondence dated 06 November 2023 on the captioned matter. The Namibia Civil Aviation Authority (NCAA) acknowledges receipt of the application for an Environmental Clearance Certificate for the proposed Relocation of a Section of the current 66kV and 132kV Hosea Kutako International Airport (FYWH), Khomas Region. Pursuant to NAMCARs Part 139 and NAMCATS-AH, the following are the regulatory provisions to be considered during your assessment: 1. NAMCARs and NAMCATS-AH 139.01.34 – requirements relating to safeguarding of aerodrome surroundings. 2. NAMCARs and NAMCATS-AH 139.11 – requirements relating to Obstacle Restriction and Removal. FSS-AGA-FORM-032 and/or FSS-AGA-FORM-033 are the forms to be used to formally apply through the Executive		

NO.	NAME	COMMENTS	NAME	RESPONSE
		Directors Office for any intended fixed and/or mobile objects or obstacles. 3. NAMCARs and NAMCATS-AH 139.13 – requirements relating to Visual Aids for Denoting Obstacles. Subsequently, below are the links to access the above-mentioned documents: 1. NAMCARs Part 139 (2018) and amendments (2023) thereto – http://www.ncaa.com.na/index.php/documents/secondary-legislation/regulations-namcars/941-namcar-part-139/download 2. Amendment http://www.ncaa.com.na/index.php/documents/secondary-legislation/regulations-namcars/3965-amended-part-139-31-march-2023/download and 3. NAMCATS-AH http://www.ncaa.com.na/index.php/documents/secondary-legislation/technical-standards-namcats/3701-namcats-part-139-ah-2018/download Finally, kindly ensure to consult the Namibia		

NO.	NAME	COMMENTS	NAME	RESPONSE
		Airports Company as the aerodrome operator for FYWH that may be directly affected by the proposed relocation of the transmission line and substation. I trust you find the above in order. Yours sincerely, Ms Taska Sem Executive Director		
2.	Namibian Environment and Wildlife Society Ndelimona Iipinge 22/11/2023)	Kindly forward me the Background Information Documents (BID) and the sites coordinates if not stated in the BID Regards -- Ndelimona Iipinge EIA Tracking and Monitoring in Namibia (EIA Tracker) Namibian Environment and Wildlife Society Cell:+264814138822	Urban Green cc (24/11/2023)	Dear Ndelimona, The above mentioned subject refers. Kindly find attached the background information document. The coordinates are: Lat: -22.498719° Long: 17.459289° Kind regards Julia L. Bashir

NO.	NAME	COMMENTS	NAME	RESPONSE
		https://eia-tracker.org.na		
	Namibian Environment and Wildlife Society Ndelimona Iipinge 22/11/2023)	Thank you This EIA project has been registered No.545 on EIA Tracker website (https://eia-tracker.org.na/) Regards Ndelimona	Urban Green cc	

6.1.2 SECOND ROUND OF CONSULTATION

Engagement with the public and authorities as part of the second round of public consultation commenced on the 24th of November 2023 and concluded on the 1st of December 2023. During the second round of consultation, I&APs and authorities were given an opportunity to submit comments for consideration and inclusion.

(i) Activities of Public Engagement

Activities undertaken to date to ensure effective and adequate I&AP involvement, are as follows:

- A notification email (Appendix C12) informing all affected authorities and registered I&APs of the availability of the Draft Scoping Report and request for comment was distributed on 24 November 2023.

(ii) Comments Received and Responses Provided

No concerns were submitted with the EAP as part of the 2nd round of public consultation. A copy of the consultation proof is attached as Appendix C13.

POTENTIAL IMPACTS AND MITIGATIONS

This chapter provides a description and assessment of the key issues of concern and potential impacts associated with the Project (i.e., relocation of a section of the 66kV OHTL and 132kv OHTL at the Hosea Kutako International Airport). Mitigation measures relevant to the planning, design, construction, operational and decommissioning phases of the Project as appropriate are recommended. These measures are aimed at avoiding, minimising, or rehabilitating negative impacts or enhancing potential benefits. The significance of potential impacts without and with mitigation is also provided.

The environmental assessment process consisted of two phases, the first being the screening phase and the second the scoping phase, as explained below.

1.27 SCREENING PHASE METHODOLOGY

Each of the potential impacts identified during public consultation and the scoping assessment was screened according to a set of questions (Figure 7.1-1), which resulted in those impacts not requiring further assessment (see section 7.1.1 below) and those impacts requiring further assessment (see section 7.4 and 7.5).

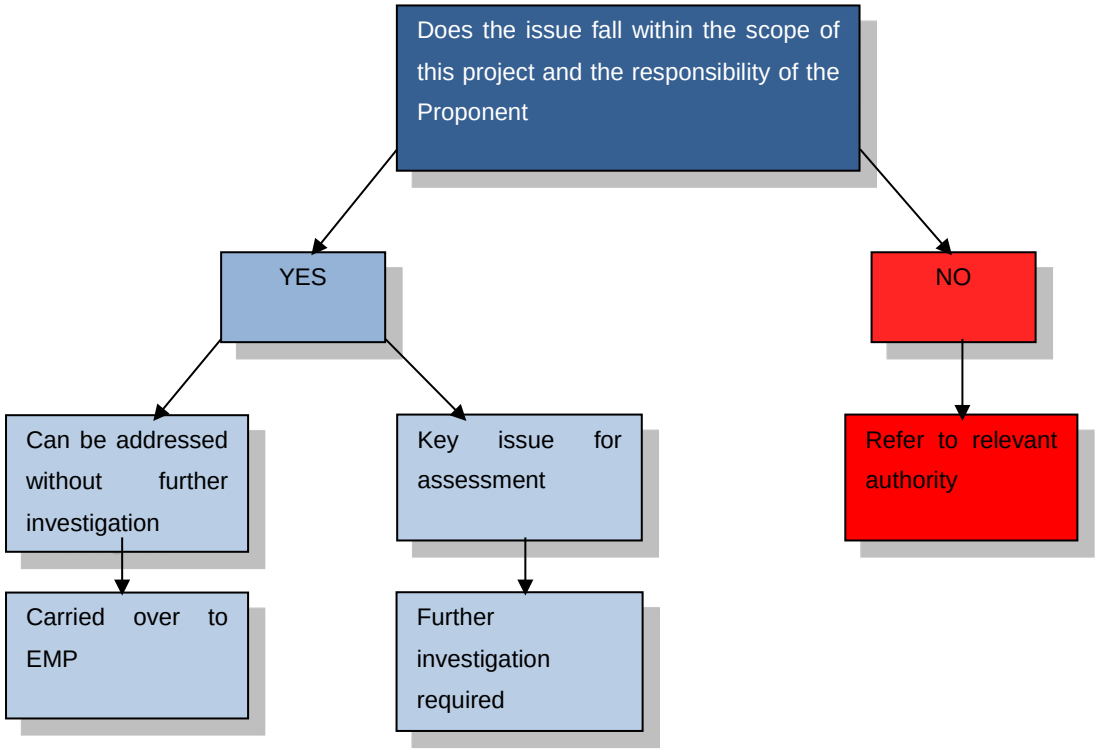

Figure 7.1: Screening process for determining key impacts for assessment

The potential issues identified are –

- Socio-economic -
    - Loss of agricultural land (direct negative);
    - Improved accessibility to and from the HKIA (indirect benefit);
    - Continues supply of power to the national & regional grid (direct benefit);
    - Temporary employment opportunity and job creation (direct benefit);
    - Residents' health and safety from EMF (direct negative);
    - Workers' health and safety during construction (direct negative);
    - Temporary power outage (direct negative);
- Temporary obstruction of traffic (direct negative);
- Dust generation (direct negative);
- Visual effects (direct negative);
- Vegetation removal and habitat destruction (direct negative);
- Bird collisions (direct negative); and
- Civil aviation safety (direct negative).

1.28 IMPACTS NOT REQUIRING FURTHER ASSESSMENT

The following impacts were identified as to not have any negative impact (i.e. positive impacts) or minor impacts not of any significance that require further assessment.

7.2.1 SOCIO-ECONOMIC BENEFITS

The proposed Project holds various direct and indirect socio-economic benefits -

- The construction phase of the Project will ensure employment creation (mostly temporary, skilled and unskilled);
- Improved accessibility from and to the B6 Highway supporting increased tourist numbers and export/import to and via international destinations;
- Income to the land owner through the sale of land; and
- The operational phase will ensure continues security in the supply of electricity to the national and regional customers.

7.2.2 SOCIO-ECONOMIC NEGATIVE

Loss of Agricultural Land

The loss of land (18 ha) for commercial agricultural purpose will have a negative socio-economic effect, but considering the income through the sale of land and low carrying capacity of the area, the latter would never have generated the same income than the sale of land.

Power Outage

The HKIA is supplied from the Detmont Substation and the NamPower 11kV reticulation network, which are not affected by the Project. The HKIA will accordingly not be affected by the relocation of the 66kV & 132kV OHTLs.

Electric and Magnetic Fields (EMF)

Electric and magnetic fields are created with the generation and use of electricity and at the frequency of the electrical power system. Various studies have been conducted on the topic of EMF and possible health effects over the last two decades. Although there is concern over the potential health effects associated with exposure to EMF, there is no empirical data demonstrating adverse health effects from exposure to power transmission lines and equipment. Also, apart from some minor local effects no significant effects of EMF on environmental species have been identified. Guidelines for EMF exposure is set by the International Commission for Non-Ionising Radiation Protection (ICNIRP 1998) and (ICNIRP 2010). According to these standards for EMF associated with power lines can be summarized as follows:

Table 7.2.2-1 – Electric and Magnetic Fields associated with powerlines

REFERENCE LEVEL:	ELECTRIC FIELD (kV/M)		MAGNETIC FIELD (µT)	
	ICNIRP 1998	ICNIRP 2010	ICNIRP 1998	ICNIRP 2010
Occupational	10	10	500	1000
General Public	5	5	100	200

Typical magnetic field levels encountered directly below a 132kV power line at ground level is 7 µT. 25 m from centre line of a 132kV power line it would be 0.5 µT. Based on the parameters for the proposed 132 kV lines it can be concluded that the highest magnetic field exposure can be expected at the conductors. From here it shows an exponential decrease with distance. At a distance of 25 m from the source, the radiation levels are expected to be less than 0.5 µT, which is 99.95% below the prescribed ICNIRP guidelines (2010). (*Hubbard 2018*) The servitude of 25 m from the 66kV OHTL and 132 kV OHTL are sufficient to reduce EMF to acceptable standards. No human settlement or activity exists close to the Project site.

Temporary Obstruction of Traffic

The road to be crossed by the relocation of the 66kV OHTL and 132kV OHTL will be the road under construction (i.e., new B6 Highway) and not the existing B6 Highway. The

relocation of the mentioned OHTL will be completed before the new B6 Highway and interchange has been completed, i.e., traffic will remain on the existing B6 Highway.

Traffic along the existing B6 Highway will thus not be affected by the Project.

Visual Effect

The section of the 66kV OHTL and 132kV OHTL to be relocated will remain at the same topography as the remaining sections of the OHTLs and will be ±500 m further south from the existing locality.

Considering the existing OHTLs and Sungate Township, located in between the HKIA and the Project, the relocated 66kV OHTL and 132kV OHTL will not be visible within the existing infrastructure.

Workers' Health and Safety

The physical removal of the OHTL infrastructure will be done by an experienced and well qualified contractor, who is directly responsible for construction health and safety of workers.

The appointed contractor will under the construction contract be responsible for and liable for any incidents during the relocation of the 66kV OHTL and 132kV OHTL. The construction contract will require compliance with all safety requirements and regulations, as per the applicable Namibian legislation.

Dust Generation

Generation of dust will take place during the vegetation clearance phase of the Project. The area to be cleared (18 ha) is relatively small and located ±2.3 km from the HKIA and 600 m from the Etango Game Range.

The significance of dust nuisance expected towards the HKIA is zero, while the nuisance towards the Etango Game Range is expected to be small. Clearance of the new section should be done during times of no winds or low winds (not more than 20km/h) or during the upcoming rainy season.

Bird Collissions

With a similar alignment being followed and similar number of poles and OHTLs to be constructed than removed, the relocated OHTLs are not expected to have less or more of an impact compared to the existing scenario.

1.29 SCOPING ASSESSMENT METHODOLOGY

The list of impacts that were subjected to a scoping assessment is presented in Table 7.5, as per the evaluation criteria presented in Table 7.3-1 below.

The key impacts, identified after carrying out screening (see Section 1.27 above), were evaluated in terms of extent (spatial scale), duration (time scale), intensity (magnitude) and probability. The means of arriving at the different significance ratings is explained in Table 7.3-1 below.

These criteria are used to ascertain the *significance* of the impact, firstly in the case of no mitigation and then with the most effective mitigation measure(s) in place. The significance of an impact is derived by considering the temporal and spatial scales and magnitude. Such significance is also informed by the context of the impact, i.e. the character and identity of the receptor of the impact.

Table 7.3-1: Criteria for impact evaluation

CRITERIA	CATEGORY
Impact	This is a description of the expected impact
Nature	**Positive** – environment overall will benefit from the impact **Negative** – environment overall will be adversely affected by the impact **Neutral** – environment overall will not be affected
Extent	**Site Specific:** Expanding only as far as the activity itself *(onsite)* **Local:** Restricted to immediate environment within 5 km of the site **Regional:** Within the Karas region **National:** Within Namibia
Duration	Reviews the lifetime of the impact, as being - **Very short** – days, <3 days **Short** - days, <1 month) **Medium** - months, <1 year **Long** - years, 1 -10 years **Permanent** - >10 years
Intensity	Establishes whether the magnitude of the impact is destructive or innocuous and whether it exceeds set standards, and is described as – **None** (No environmental functions and processes are affected); **Low** (Environmental functions and processes are negligibly affected); **Medium** (Environment continues to function but in a noticeably modified manner); **High** (Environmental functions and processes are altered such that they temporarily or permanently cease and/or exceed legal standards/requirements).
Probability	Considers the likelihood of the impact occurring and is described as – **Improbable** (low likelihood), **Probable** (distinct possibility), **Highly probable** (most likely) or **Definite** (impact will occur regardless of prevention measures).

CRITERIA	CATEGORY
Significance **(no mitigation)**	**None** (A concern or potential impact that, upon evaluation, is found to have no significant impact at all) **Low** (Any magnitude, impacts will be localised and temporary. Accordingly, the impact is not expected to require amendment to the project design) **Moderate** (Impacts of moderate magnitude locally to regionally in the short term. Accordingly, the impact is expected to require modification of the project design or alternative mitigation) **High** (Impacts of high magnitude locally and in the long term and/or regionally and beyond. Accordingly, the impact could have a "no go" implication for the project unless mitigation or re-design is practically achievable)
Mitigation	Description of possible mitigation measures
Significance (with mitigation)	**None** (A concern or potential impact that, upon evaluation, is found to have no significant impact at all) **Low** (Any magnitude, impacts will be localised and temporary. Accordingly, the impact is not expected to require amendment to the project design) **Moderate** (Impact s of moderate magnitude locally to regionally in the short term. Accordingly, the impact is expected to require modification of the project design or alternative mitigation) **High** (Impacts of high magnitude locally and in the long term and/or regionally and beyond. Accordingly, the impact could have a "no go" implication for the project unless mitigation or re-design is practically achievable)
Confidence level	The degree of confidence in the predictions, based on the availability of information and specialist knowledge. **Low** (based on the availability of specialist knowledge and other information) **Medium** (based on the availability of specialist knowledge and other information) **High** (based on the availability of specialist knowledge and other information)

The decision as to which combination of alternatives and mitigation measures to apply lies with the proponent, and their acceptance and approval ultimately with the relevant Competent Authority.

1.30 MITIGATION APPLICATION METHODOLOGY

There is a hierarchy of actions which can be undertaken to respond to any development or activity. These cover avoidance, minimisation, and compensation. It is possible and considered sought after to enhance the environment by ensuring that positive gains are included in the development. If negative impacts occur then the hierarchy, as a guiding philosophy, recommends the following steps.

Impact avoidance: This step is most effective when applied at an early stage of project planning. It can be achieved by:

1. Not undertaking certain actions or elements that could result in adverse impacts;
2. Avoiding areas that are environmentally sensitive; and
3. Putting in place preventative measures to stop adverse impacts from occurring.

Impact minimisation: This step is usually taken during impact identification and prediction to limit or reduce the degree, extent, magnitude, or duration of adverse impacts. It can be achieved by:

4. Scaling down or relocating the proposal;
5. Redesigning elements of the project; and
6. Implementing mitigation measures to manage the impacts.

Impact compensation: This step is usually applied to remedy unavoidable residual adverse impacts. It can be achieved by:

7. Rehabilitation of the affected site or environment, for example, by habitat enhancement;
8. Restoration of the affected site or environment to its previous state or better; and
9. Replacement of the same resource values at another location (off-set), for example, by wetland engineering to provide an equivalent area to that lost to drainage or infill.

1.31 POTENTIAL IMPACTS IDENTIFIED AND ASSESSED

The information presented in this section has mainly been drawn from the information received from the Proponent and Engineers regarding the proposed Project, specialist baseline studies and public engagement that was undertaken as part of this phase of the EA process.

For this assessment's purpose the issues and impacts identified are grouped according to the main development phases – i.e. construction phase, operational phase, and decommissioning phase.

7.5.1 POSSIBLE IMPACTS DURING CONSTRUCTION PHASE

Table 7.5.1-1 presents the potential impacts that might occur during the construction phase of the Project, while Table 7.5.1.1-1 presents the assessment of the potential impact, outcome and mitigations to be applied.

Detailed mitigation measures and environmental requirements having direct relevance to the construction phase impacts are presented in the Construction Environmental Management Plan (Appendix D).

Table 7.5.1-1 - Potential impacts to consider during the Construction Phase

IMPACT	CAUSE	
Loss of Biodiversity and Habitat Destruction:		
Flora	OHTL Construction	Tracks and roads on site
		Vegetation clearing
		Illegal removal of protected plants
		Heavy transportation of construction material
		Digging of holes
		Concrete mixing
	Substation	Clearing of vegetation
		Fencing
		Heavy transportation of construction material and equipment
		Digging of trenches, excavations and casting of foundations
		Installation of equipment
Fauna	Forced relocation	Noise and vibration
	Poaching	

7.5.1.1 LOSS OF BIODIVERSITY AND HABITAT DESTRUCTION (FLORA & FAUNA)

Terrestrial plant communities will be impacted through the removal of indigenous species and disturbances may encourage the growth of non-native and invasive plant species, reducing the overall size of the natural habitat. Declines are expected in both resident and migrant animal populations. Species with restricted mobility, such as reptiles, will be more greatly affected.

Wildlife will suffer either local extinction or displacement because of land clearing and development activity. Animals that remain within the area permanently or seasonally are expected to be negatively affected. Breeding cycles of site populations of wildlife may be

disrupted or destroyed depending upon the timing of construction in relation to breeding cycles, and the location of construction and development in relation to breeding ponds, streams, nests, burrows, and over-wintering sites.

In the vicinity of the Project site, extensive portions of habitat have been impacted due to developments that occurred with the larger area of the HKIA and Sungate Township. Further fragmentation of the existing habitat onsite will occur under all alternatives and is expected to have similar negative, long-term effects.

The Project will increase the amount of human-generated disturbance to the habitats. This type of disturbance includes destruction of indigenous vegetation, proliferation of alien invasive plants.

Apart from a few temporary 'pools' of water accumulating at various lower lying areas within the larger and the 'seasonal dam' very few aquatic communities and organisms exists for most of the year.

Other than possible local habitat alteration/destruction by the proposed Project, the impact of the proposed OHTL infrastructure is not expected to be detrimental to any of the unique insects, arachnids, reptiles, amphibians or mammals. The footprint of the OHTLs and substation will be small with an existing servitude and service roads already cleared. The OHTLs will not impede animal movement.

Table 7.5.1.1-1 below presents the comprehensive assessment outcome and suggested mitigation measures to show environmental sensitivity and the high level of commitment required regarding the sensitive flora.

Table 7.5.1.1-1: Impact assessment pertaining to loss of biodiversity and habitat destruction

CRITERIA	DESCRIPTION	DESCRIPTION
Risk Event	**Loss of Biodiversity and Habitat Destruction (flora)**	**Loss of Biodiversity and Habitat Destruction (fauna)**
Nature of Impact	Negative	Negative
Extent	Local	Local
Duration	Permanent	Short
Intensity	Medium	Low
Probability	Highly probable	Probable
Significance (no mitigation)	Moderate	Moderate
Mitigation	• No vegetation clearance within the servitude should be undertaken without prior confirmation from an ecologist.	• No pesticides may be used for powerline maintenance. • No fauna species may be trapped, captured or killed.

CRITERIA	DESCRIPTION	DESCRIPTION
	• Ecologist should inspect the servitude and confirm absence/existence of species requiring protection and/or removal permit requirements. • Make use of existing tracks/roads and do not drive randomly throughout the area even if it seems like open space. • Nobody may venture outside the servitude of the project site, temporary construction camp or laydown areas. • Implement and maintain off-road track discipline with maximum speed limits (e.g. 30 km/h) as this would limit dust pollution. • Where new tracks have to be made off the main routes, the routes should be selected causing minimal damage to the environment – e.g. use the same tracks; cross drainage lines at right angles; avoid placing tracks within drainage lines. • Removal or collection of any plants in the Project area is forbidden. • Vegetation in the drainage lines be left intact. • Avoid damage to endemic flora occurring in the drainage lines. • Topsoil of holes or trenching should be preserved as a seedbank. • Inform contractors/workers regarding the above mentioned issues prior to construction activities and monitor for compliance thereof throughout. • Rehabilitate all areas disturbed by the construction activities – i.e. laydown areas, etc.	• No setting of snares, collection of veld foods and or any form of illegal hunting activities. • No killing of species viewed as dangerous such as snakes, scorpions or spiders. • No disturbance of drainage lines or their vegetation are allowed. • Monopoles should not be mounted in drainage lines where possible. • No temporary construction camp or laydown areas is allowed within the Project site or adjacent areas and workers must be transported daily to and from the Project Site. • Avoid obstructing surface drainage lines where possible. • Use portable toilets to avoid faecal pollution. • Initiate a suitable and appropriate refuse removal policy as littering could result in certain animals becoming accustomed to humans and associated activity and result in typical problem animal scenarios. • Do not drive randomly throughout the area (could cause mortalities to vertebrate fauna). • Avoid off-road driving at night as this increases mortalities of nocturnal species. • Avoid and/or limit the use of lights during nocturnal activities as this could influence and/or affect various nocturnal. Use focused lighting for least effect. • Employ an environmental officer to ensure compliance, especially of the rehabilitation of all the affected areas.

CRITERIA	DESCRIPTION	DESCRIPTION
	• Draft a Post Construction Rehabilitation and Management Plan in consultation with an Ecologist, which should include monitoring. • Implement erosion control measures where applicable – e.g. cross drains on slopes, etc.	
Significance (with mitigation)	Low	Low
Confidence level	High	High
Legal Implications	Nature Conservation Ordinance No. 4 of 1975, as amended Forest Act No. 12 of 2001, as amended	Nature Conservation Ordinance No. 4 of 1975, as amended Forest Act No. 12 of 2001, as amended

Given the size of the Project footprint within the larger area and the relatively low sensitivity of the flora and fauna, it can be concluded that the potential impact significance to the flora and fauna is expected to be ***low*** before mitigation, which can be further reduced by applying the suggested mitigations.

Construction activities should comply with the requirements as set-out in the Construction Environmental Management Plan (Appendix D).

7.5.2 POSSIBLE IMPACTS DURING OPERATIONAL PHASE

The operational phase of the proposed Project entails predominantly:

- Clearance of regrowth vegetation along the power line servitude and within the fenced-in area of the substation;
- Bi-monthly inspections to check for signs of wear and tear, which is done by vehicle and foot;
- Replacement of damaged or malfunctioning infrastructure; and
- Emergency maintenance.

Details with regards to the potential impacts expected during the operational phase are listed in Table 7.5.2-1, below. Mitigation measures and environmental requirements having direct relevance to the expected operational phase impacts are presented in Tables 7.5.2.1-1 & 7.5.2.1-2. Detailed mitigation measures and environmental requirements having direct relevance to the expected operational phase impacts are presented in the Operational Environmental Management Plan (Appendix D).

Table 7.5.2-1: Potential impacts expected during the Operational Phase

IMPACT	CAUSE
Loss of biodiversity and habitat destruction	Removal of flora as part of site maintenance
	Avifauna collision to powerline
Civil aviation safety	Infringement into the OLS
	Non visibility of OHTL over roads

7.5.2.1 HABITAT DESTRUCTION AND LOSS OF BIODIVERSITY (FLORA AND FAUNA)

Vegetation management applicable to the Project site basically entails keeping vegetation clear to interfere with the operation of equipment (see section 1.21).

Considering that the entire Project site (18 ha) would have been cleared during the construction phase, very little further disturbance and destruction is expected. Vegetation management by means of chemical sprays are prohibited and should be done by means of manual labour. It is important that a Vegetation and Habitat Management Plan be drafted, which should form part of the Project's O&M Plan, according to which external operational monitoring will be done.

Irresponsible behaviour (e.g. uncontrolled access to sensitive areas; collecting of plants or animals; killing of snakes, use of general poison, setting of fires, littering, pollution, destructive driving with quad and/or vehicles, etc.) should not be allowed and/or tolerated.

7.5.2.2 LOSS OF BIODIVERSITY AND HABITAT DESTRUCTION (AVIFAUNA)

At least 173 species of terrestrial ["breeding residents"] birds could occur around the Project area at any time (Maclean 1985, Tarboton 2001). Obviously, rainfall (or lack thereof) would affect bird species distribution and abundance. At least 8 endemic species (57% of all Namibian endemic species or 5% of the species expected to occur in the area) can or are likely to occur in the general area either permanently or environmental conditions allowing. The Project site does not fall within an Important Birding Area (IBA) although the Naukluft (Namib-Naukluft Park), situated approximately 200 km towards the west of Windhoek, is one of the 21 IBA's in Namibia (Simmons 1998).

Species of greatest concern are the endemic species which use natural tree cavities for nesting such as the Rüppell's Parrot, Rosyfaced Lovebird, Violet Woodhoopoe and Monteiro's Hornbill. Usually trees with natural cavities are the older bigger specimens which should be protected to ensure viable habitat for the birds mentioned above.

The eventual actual development area and associated infrastructure (e.g. access route, etc.) would be relatively small (±18 ha) and thus only have localised negative implications on the environmental and associated fauna. The overall impact on the local fauna (e.g. reptiles, amphibians, mammal & birds) and associated habitat destruction would be relatively small. Good planning prior to development (including associated infrastructure development) and access route(s) development as well as adhering to proposed mitigation measures would minimise the overall effect on the local fauna.

Table 7.5.2.2-1: Impact assessment pertaining to loss of biodiversity and habitat destruction

CRITERIA	DESCRIPTION
Risk Event	**Loss of Biodiversity and Habitat Destruction (avifauna)**
Nature of Impact	Negative
Extent	Regional
Duration	Long
Intensity	Medium
Probability	Probable
Significance (no mitigation)	Moderate
Mitigation	**Physical disturbance of birds and habitat destruction/modification:** • Before construction starts, the proposed power line route should be inspected by an Ecologist for any signs of bird nesting activity. Disturbance of nesting birds should be avoided. • Where possible, the unnecessary destruction of habitat or degradation of the environment, including sensitive habitats such as drainage systems, should be avoided. • Ongoing awareness should be promoted about the value of biodiversity and the negative impacts of disturbance and habitat destruction, especially to breeding birds. **Poaching of birds:** • Ongoing awareness should be promoted about the value of biodiversity and the negative impacts of poaching. • A speed limit should be strictly enforced along the service road. • Anti-poaching measures should be strictly enforced, with zero tolerance, and this should be emphasised during induction to contractors; offenders should be prosecuted. **Collisions of birds on the power line structures** • At this stage, no visible marking is recommended, but it should become mandatory should monitoring results indicate the necessity (e.g. repeat collisions). • The intention is to mark stay wires with yellow tubing (BID

CRITERIA	DESCRIPTION
	2021). The need for fitting further mitigation for collisions on stay wires should also be based on monitoring results. • The need for reporting power line incidents should be stressed, and reporting procedures clarified. Should monitoring indicate that collisions are still taking place despite the above marking, further mitigation would need to be investigated. **Electrocutions of birds on associated power line structures** • Any jumpers (e.g. on angle poles and H-poles) should also be insulated. • Standard mitigation measures apply for most structures associated with substations and transformers, which should ideally be designed in such a way that they are not attractive as bird perches/nesting sites; selected live components should be insulated (e.g. using PVC piping or low-density polyethylene pipe [LDPE]). • The need for monitoring and reporting power line incidents should be stressed, and reporting procedures clarified. **Impacts on the power supply due to bird nesting and other activities** • No mitigation is recommended at this stage, but monitoring is essential to identify (potential) problem areas. • Should any nesting or other activity cause disruptions of the power supply, consult with the Ministry of Environment, Forestry and Tourism (MEFT) in order to discourage and manage such activities, e.g. by removing nests after the nesting season (if applicable). • Ensure strict and effective waste management during construction activities, to discourage an increase in scavenging species.
Significance (with mitigation)	Low
Confidence level	High
Legal Implications	Nature Conservation Ordinance No. 4 of 1975, as amended Forest Act No. 12 of 2001, as amended

Any power line is potentially lethal, and this does not depend on the size of the structure nor its capacity. Consequently, potential impacts on birds should form an important consideration with regard to the construction of any new power line.

Taking into consideration the size of the Project and that it is the relocation of an existing section of the OHTL, the potential impact significance on avifauna biodiversity is expected to be ***small***, which can further be reduced by applying the proposed mitigations.

Operational activities should comply with the requirements as set-out in the Construction Environmental Management Plan (Appendix D).

7.5.2.3 CIVIL AVIATION SAFETY

International Standards and Recommended Practices Annex 14 to the Convention on International Civil Aviation contains Standards and Recommended Practices (specifications) that prescribe physical characteristics and obstacle limitation surfaces to be provided at aerodromes, also prescribe certain facilities and technical services that should be provided at an aerodrome.

NAMCARs and NAMCATS-AH stipulates that no object higher than 45 m above the aerodrome elevation may be erected within a distance of 15 km from the aerodrome without written approval of the Executive Director of Namibia Civil Aviation Authority. It is also required that aircraft warning spheres be introduce on OHTLs at road crossings.

The requirements of ICAO Annexure 14, Chapter 4: Obstacle Restriction and Removal, in particular Table 4.1: Dimension and Slopes of Obstacle Limitation Surfaces – Approach Runways, were used as basis for the obstacle limitation evaluation.

i) ICAO ANNEXURE 14 Evaluation[4]

The purpose of the Annex 14 Obstacle Limitation Surfaces (OLS) is to define the volume of airspace that should be ideally kept free or safeguarded from obstacles, and to take the necessary measures to ensure the safety of aircraft, and thereby the passengers and crews aboard them, while taking-off or landing, or while flying in the vicinity of an airport.

This is achieved by a process of checking proposed developments so as to:

- Protect the blocks of air through which aircraft fly, by preventing penetration of these surfaces' lower limits;
- Protect the integrity of radar and other electronic aids to air navigation, by preventing reflections and diffractions of the radio signals involved;
- Protect visual aids, such as Approach and Runway lighting, by preventing them from being obscured, or preventing the installation of other lights which could be confused for them.

Under the terms of their license, as issued by the Namibia DCA, airports are normally required to prevent new developments or extensions to existing structures from infringing the OLS. The OLS completely surround the aerodrome, but those surfaces aligned with the runway(s) used to protect aircraft landing or taking-off can be more limiting than those surrounding the rest of the aerodrome, particularly as you get closer to the aerodrome.

[4] Abstracted from the Environmental Impact Assessment for the Sungate Township Development, Obstacle Limitation Report, October 2009, Windhoek Consulting Engineers

ii) Classification of the HKIA

According to ICAO's recommended standards the following categories of the main runway, the secondary runway and associated taxiways apply (Master Plan for Hosea Kutako International Airport – April 2004):

- Main runway: Code 4E
- Secondary runway: Code 2C

iii) Assumptions

The following assumptions were made in the evaluation of the obstacle limitation zone:

Main Runway

1. The sections of both the 66kV and 132 kV OHTL falls entirely within the sphere of the obstacle limitation applicable to the western end of the main runway. The allowable clearance between the ground and the obstacle limitation surfaces of the main runway have therefore been used to determine the obstacle limitation zone.

2. The following obstacle limitation surfaces were established for sections of both the 66kV and 132 kV OHTL for the main runway:

- conical
- inner horizontal
- approach
- transitional
- balked landing.

3. The Inner Approach Surface has not been considered as it does not extend to the sections of both the 66kV and 132 kV OHTL.

4. The Inner Transitional Surface has not been considered since it is the controlling obstacle limitation surface for navigation aids, aircraft and other vehicles that must be near the runway. The Transitional Surface is intended as the controlling obstacle limitation surface for buildings, etc.

5. The Balked Landing Surface has been considered, but it does not extend to the sections of both the 66kV and 132 kV OHTL.

Secondary Runway

1. The following obstacle limitation surfaces were established for sections of both the 66kV and 132 kV OHTL for the secondary runway:

- approach
- transitional.

The other obstacle limitation surfaces (conical, inner horizontal) are governed by the stricter requirements of the main runway.

iv) Geometrical Information

The following values were used in calculating the obstacle limitations:

- RL of inner surface (main runway) 1718.0
- RL of inner surface (secondary runway) 1700.0
- RL of inner horizontal surface 1763.0
- RL of conical surface (upper) 1818.0

v) Conclusion

No part of the sections of both the 66kV and 132 kV OHTL to be relocated lies within the approach path of the main runway or secondary runway (Figure 7.5.2.3-1).

Although the OHTL is located within a 15 km radius, the highest monopole structures at a height of 22 m above NGL at an elevation of 1,730 AMSL, will not be higher than 45 m above the aerodrome elevation. The OHTL to be relocated will be of the same height as the existing and remaining sections of the OHTLs, which has been in existence.

Aircraft warning spheres will be introduced on OHTLs at road crossings.

1.31.3 DECOMMISSIONING AND CLOSURE

OHTL of this magnitude and scale are hardly decommissioned and/or closed, basically as a result of the initial cost (i.e., land and construction cost) and long life expectancy of the materials. Upgrading of an existing OHTL makes more financial sense than decommissioning and the construction of a complete new OHTL.

A complete decommissioning exercise would include the following:

- Demolishing and removal of all temporary and permanent structures;
- Disposing of building rubble;
- Preparation of disturbed areas and recovery of biological soil crust;
- Search and relocate of local indigenous vegetation onto the site;
- Rehabilitated vegetation patch; and
- Rehabilitation monitoring.

Given the nature of the activities associated with decommissioning, the expected impacts are very similar to that of the construction phase (see section 4.5), as is the case with the required mitigations to be applied.

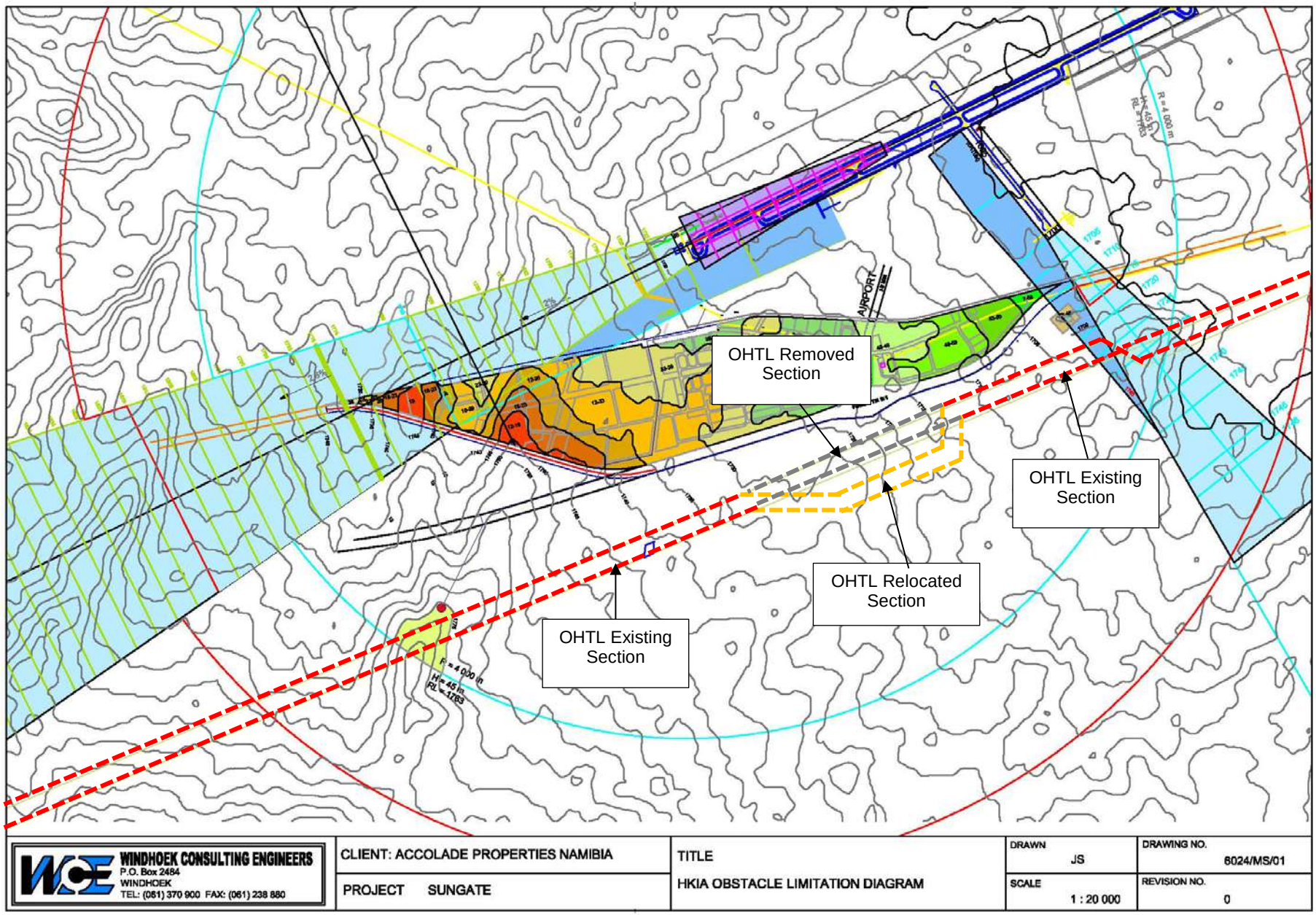

Figure 7.5.2.3-1 : Obstacle Limitation Surfaces

1.32 CUMULATIVE IMPACTS

Cumulative impacts are defined as "*those that result from the successive, incremental, and/or combined effects of an action, project, or activity (collectively referred to in this document as developments when added to other existing, planned, and/or reasonably anticipated future ones*". The significance thereof is determined by the nature and the scale of the proposed Project's activities contributing to this 'cumulative impact/s' and the sensitivity of the receiving environment.

Cumulative impacts are an important consideration, including the increase in linear infrastructure in the study area and the increasing effects of other human activities. The clustering of existing infrastructure in the Project area, including other power lines, the road and railway networks, pipelines, communication masts, as well as other developments such as the HKIA and Sungate Township, would all increase or cumulatively contribute the cumulative effect.

From this scoping assessment conducted, of the four potential cumulative impacts that can be expected, as outlined below, the Project will have a cumulative impact on loss of habitat and vegetation.

- Increased loss of habitat and vegetation (Negative);
- Increased bird mortalities (collisions with powerlines) (Negative);
- Increased visual impact (Negative);
- Employment creation & skills transfer (Positive).

Considering the evaluation and assessment of the nature and the scale of the proposed Project's (18 ha) and the sensitivity of the receiving environment (partially disturbed), the cumulative impact is expected to be of ***'low'*** significance, with appropriate mitigation and continues monitoring, as recommended.

Ongoing monitoring is essential. The NamPower/Namibia Nature Foundation Strategic Partnership monitors interactions between wildlife and power supply infrastructure in Namibia to identify the extent of the impact, possible mitigation measures to avoid powerline incidents.

CONCLUSIONS & RECOMMENDATIONS

This chapter of the report presents the assessment conclusion following the scoping phase, as well as the key recommendations and the environmental statement for consideration by the authorities. The conclusion and recommendations as presented in this chapter have been drawn from the assessment outcome, as presented in Chapter 7.

1.33 CONCLUSIONS

The proposed Project has the potential to contribute positively to the Country's economic development, through unlocking land for purpose of road construction (B6 Highway) ensuring improved accessibility to and from the HKIA for tourists, as well as the import and export markets. Temporary low level skill employment will be created, as well as contractor's employment during the construction phase. Improved access via the new B6 Highway is expected to stimulate further development at the Sungate Township, which have various socio-economic spinoff during both the short and long term.

Considering the scale of the proposed Project, the expected contribution to employment, is considered small, while the contribution to improved access to and from the HKIA is considered medium to large, for both regional and national economies.

Apart from the positive contributions, as highlighted above, the Project will have some negative impacts as well, as presented in Chapter 7, above.

Negative impacts expected as a result of the proposed Project is a loss in vegetation and disturbance to fauna habitats. Considering the scale of the Project it can be concluded that the Project (footprint of 18 ha) will have a permanent impact (until decommissioning) of a ***'low*** significance. Mitigation measures and recommendations have been prescribed in this report (and the EMP – Appendix D) to reduce the significance of impacts (among others) to acceptable levels. As the proposed Project entails the relocation of a 2 km section of an existing OHTL with a few hundred meters, the impact on avifauna is expected to remain the same, which at this stage is ***low.***

As the existing 66kV and 132kV OHTL, as well as the 2 km section to be relocated, are not located within the approach path of the main runway or secondary runway (Figure 7.5.2.3-1) or none of the structures are higher than 45 m above the aerodrome elevation, the impact expected is ***zero***. Aircraft warning spheres will be introduced on OHTLs at road crossings.

Based on the project information as provided by the Proponent, Consulting Engineer and specialist baseline information, the nature and extend of the Project, setting the sensitivity of the receiving environment, this scoping study concludes that there is currently no evidence indicating that any of the potential impacts identified (see sections 7.5.1 & 7.5.2) are of such significance that it cannot be reasonably mitigated and that the proposed Project, as presented in this report, should not be allowed to continue. It is however required that the mitigations and recommendations as presented in this report and the EMP first be approved by the Environmental Commissioner before the Project can commence.

The findings of this scoping phase conclude that no further detailed assessments are required.

Given this, it is not to say that there will be no further impact/s and potential threats as highlighted by the study. Construction, operations and decommissioning and closure activities need to be strictly controlled by the Proponent and Contractor/s, and monitored by the appointed specialist and applicable Competent Authority to ensure that all potential impacts identified in this study and other impacts that might arise during implementation are properly identified in time and addressed in an effective manner.

1.34 RECOMMENDATIONS

It is the conclusion and recommendation of the EAP that this Project be granted an ECC, subject to the following recommendations and final approval by the Environmental Commissioner as per the Environmental Management Act, No. 7 of 2007.

1. All required permits, licenses and approvals (see section 3.4) for the Project be obtained before commencement.
2. All mitigations listed in sections 7.5.1 and 7.5.2 of this Report and those included in the Environmental Management Plan (Appendix D) be implemented, as applicable.
3. An Environmental Control Officer should be appointed for the construction phase of the Project to make sure all the requirements within the Scoping Report and Environmental Management Plans (Appendix D) are strictly adhered to.
4. An Environmental Site Manager should be appointed during the course of the construction phase to make sure that all the requirements as listed within this scoping report and the EMP (Appendix D) are adhered to.
5. Continued on-site monitoring and evaluation be conducted during the construction and operational phases to be authorised by the DEA.

1.35 ENVIRONMENTAL STATEMENT

Based on the information presented in this scoping report, the Environmental Assessment Practitioner is of the opinion that the immediate and larger environment will not be significantly affected if the above recommendations as proposed in this Report are implemented and monitored, and responsible environmental practises are applied by the Developer, Proponent, appointed contractors and sub-consultants.

Urban Green cc, the independent environmental assessment practitioner, recommends to the relevant authorities that the application for the listed activities associated with the relocation of a section (2 km) of the 66kV OHTL and 132 kV OHTL be approved on condition that the above recommendations (Section 1.34) are met and that continuous monitoring be conducted in accordance with the Environmental Management Act (Act No. 7 of 2007), its EIA Regulations and this scoping report. It is important that proof of monitoring is submitted

to the office of the Environmental Commissioner to be used as part of the review process pertaining to the 3-yearly ECC renewal.

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