ENVIRONMENTAL IMPACT ASSESSMENT FOR THE 66 kV POWER EVACUATION LINE FROM NAMAACHA WIND POWER PROJECT TO BOANE SUBSTATION
NON-TECHNICAL SUMMARY (NTS) – EIS PHASE

Environmental consultant

CONSULTEC
Consultores Associados, Lda

Consultec - Consultores Associados, Lda.
Rua Tenente-General Oswaldo Tazama, 169.
Maputo, Moçambique
Telefone: +258-21-491
Fax: +258-21-491-578

Proponent

ELECTRICIDADE DE MOÇAMBIQUE, E.P

EDM – Electricidade de Moçambique, E.P.
Av. Eduardo Mondlane Nr.1390, 5º andar,
Maputo, Moçambique
Olga Utchavo | olga.utchavo@edm.co.mz

1 INTRODUCTION

EDM (the Proponent) propose the construction of a transmission line, for the evacuation of energy generated by Central Eléctrica da Namaacha Project (CEN[1]), through two 66 kV overhead lines that connect the wind farm to the Boane Substation.

To obtain the Environmental License required in terms of the Environmental Law (Law No. 20/1997, of 1 October) for the development described above (hereafter the "Project"), the Promoters must conduct an Environmental Impact Assessment (EIA) Process.

This document corresponds to the Non-Technical Summary of the Environmental Impact Study (EIS) and presents the main conclusions of this phase of the EIA process.

2 ENVIRONMENTAL CONSULTANT

Consultec - Consultores Associados, Lda. was appointed to carry out the Environmental Impact Assessment (EIA) process of this Project. Consultec is based in Maputo and is a Mozambican company registered as an environmental consultant in the Ministry of Land and Environment (MTA).

3 LEGAL FRAMEWORK

The EIA Process is being developed in compliance with Mozambique's national legislative requirements and with applicable international guidelines, including:

- National Development Framework: national development and strategic plans with relevance to the proposed Project;
- Institutional Framework: relevant governmental institutions and authorities with jurisdiction over the Project or over relevant environmental or social aspects;
- Legislative Framework: legal requirements which are relevant for the Project's impact assessment;
- Relevant International Conventions;
- International Best Practice Guidelines and Policies.

As part of the Project's EIA process, legal requirements from the national regulatory frameworks and ratified international conventions applicable to the Project and energy sector in general, as well as relevant international standards and guidelines, such as the World Bank / International Finance Corporation and the Equator Principles, were considered and

[1] Central Eléctrica da Namaacha Project consists of the construction of a 120 MW wind farm within a site of approximately 855 ha near Namaacha tow and had its own EIA process. The CEN has secured its environmental license from MTA.

referred to. For further details, see Section 2 – Volume I of the EIA Report.

4 EIA APPROACH AND METHODOLOGY

The first step of the EIA Process was the Screening Phase. During this phase, a Screening Report was compiled and submitted to MTA, to assist them in determining the level of environmental assessment required. The Screening Report contained information regarding the proposed Project and a description of the biophysical and socio-economic context of the area. A Preliminary Environmental Information Form was appended to the Screening Report.

The following step was the submission of an Environmental Pre-Feasibility and Scope Definition Study (EPDA) to MTA. The EPDA draft report was disclosed to Public Participation Process (EPDA-PPP) in late November 2022. Two meetings were held in Maputo and Namaacha, in mid-December 2022.

The conclusions of the Draft EIS were presented in the second phase of the Public Participation Process, after which the final EIS report will be submitted to the MTA. If the MTA approves the EIS, a provisional Environmental License will be issued and the entity responsible for the Project (Proponent) must comply with all measures established in the EIS and EMP.

5 PROJECT JUSTIFICATION

The Central Eléctrica da Namaacha SA will conclude a contract for the purchase and sale of energy with EDM for a period of 25 years. Central Eléctrica da Namaacha (CEN) is responsible for the production of electricity through the existing wind resource in the Namaacha district. An infrastructure for evacuating the generated electricity is required and the future buyer, EDM, defined together with the Proponent, the delivery point as the Boane substation, located in Boane District.

The CEN, together with the transmission powerline (the Project), are aligned with the environmental and energy policies recommended not only in the country, but also worldwide, in order to enable the fulfilment of international commitments in reducing greenhouse gas (GHG) emissions, with particular emphasis on the targets set out in the Paris Agreement, and resulting from the 21st Conference of the Parties to the United Nations Framework Convention on Climate Change (COP21), signed by Mozambique on 22 April 2016.

The Project is aligned with the New and Renewable Energies Development Policy, approved in 2009 by the Government of Mozambique, which has established as one of its strategic priorities the evaluation of new and renewable energy resources. In this context of the evaluation of resources, the Policy and, later, the Strategy for the Development of New and Renewable Energies, approved in 2011, established as measures to be developed, among others, the mapping of the water, wind, solar, biomass, geothermal and maritime potential, as well as the identification and mapping of the sites of occurrence. In this context, Mozambique's Renewable Energy Atlas emerges, which has addressed one of the strategic priorities defined in the Policy and Strategy of the Government of Mozambique.

6 PROJECT DESCRIPTION

PROJECT LOCATION

The proposed Project is in Maputo Province and crosses the Districts of Namaacha and Boane.

The district of Namaacha is divided into two administrative posts (AP) and eight localities. The District of Boane is divided into two Administrative Posts (AP) and five Localities. The Project crosses Namaacha Sede and Boane Sede administrative posts.

Figure 1 below presents the location map of the project.

Location Map

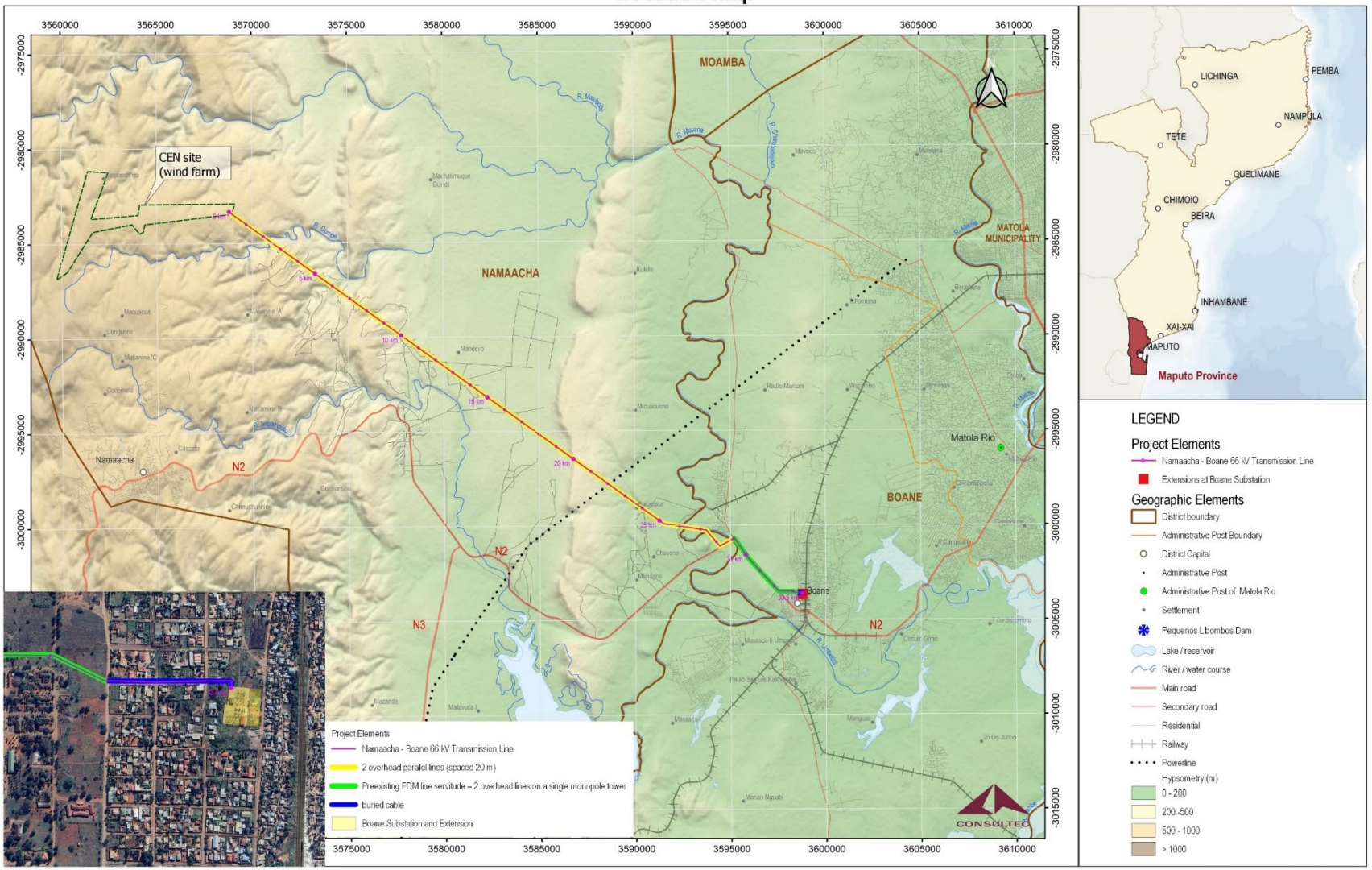

Figure 1 - Project Location

Project Alternatives

Two preliminary alternative routes were initially provided by the proponent, followed by an additional 3 options (3 to 5) proposed by a technical advisor (Zutari), totalling 5 route options for the transmission line (see in Figure 2).

The technical advisor (Zutari) has conducted a Multicriteria Decision-Making (MCDM) process to determine the most feasible route and to inform the following project stages and the EIA. The line route alternatives were assessed through the application of several environmental, social, technical (including financial) criteria. An MCDM workshop was held in Maputo, Mozambique, on the 20th of October 2022 to interrogate the potential route alignments identified to aid the project team. The results indicated an overall preference for Option 5, thus **Option 5 has been selected as the preferred alternative**, and is the one selected for more detailed assessment in the EIA/EIS phase.

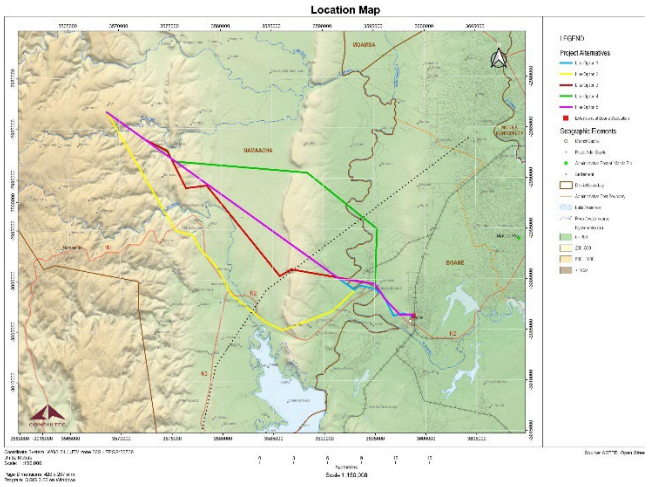

Figure 2 - Location map of the proposed alternative power line routes

During the EIS preparation and the field work phase, some adjustments to former option 5 route were introduced to further minimise impacts, namely:

- Going around Mabanja, between km 27 and km 29 of the route, to avoid affecting houses;
- Using EDM's 33 kV line servitude about to be decommissioned along the N2 approaching Boane (between km 29 and km 32), to minimise new land take.

In addition to the wider route alternatives, the project also evolved to transition from an overhead line to a buried cable in the last 310 m approaching Boane substation, where the density of surrounding houses is highest along the route, to minimise new land take and avoid affecting the existing houses.

Main Project Components

The main project components and activities are the following:

- Two 66 kV overhead lines approximately 33.5 km long, connecting the CEN to Boane substation;
- 66 kV electrical extensions at Boane substation.

Transmission Line

The CEN will export power via two 66 kV lines that shall run from the site in Namaacha to Boane substation with a length of approximately 33.5 km. The purpose of the two separate overhead lines is to provide n-1 redundancy on the connection of the WPP to the EDM network in Boane Substation, in accordance with the Mozambican grid code requirements. For the first 29 km of the route (starting from the Namaacha wind farm site), two parallel 66 kV lines, (spaced 20 m) will be installed on monopole towers. From this point onward, the transmission line will follow the EDM existing servitude of an older transmission line that has been decommissioned. In this area a single monopole tower will be used, with two lines installed to minimize the corridor affecting resettlement. In the last 310 m of the route, the transmission line transitions to a buried underground cable.

The proposed arrangement is a two single-circuit monopole lines (first 29 km from Namaacha wind farm), with a 20 m minimum separation between lines, or one double-circuit monopole line (from km 29 to km 33.2 of route).

Monopole towers will be used (see Figure 3), typically 200 m spaced and 20-25 m high. A total of approximately 169 towers is expected. All towers shall be equipped with an approved guard against birds' device immediately above each suspension and tension insulator string attachment, to prevent perching and injuries of birds.

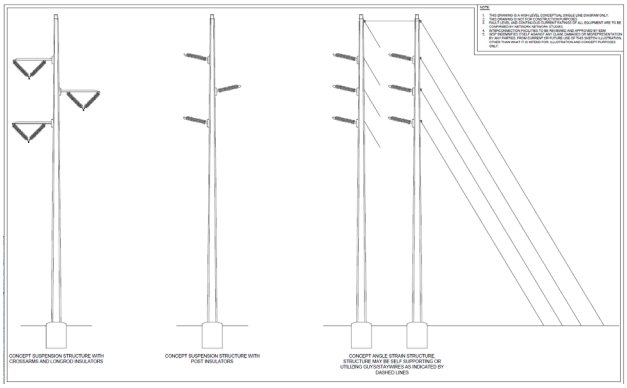

Figure 3 - Concept of 66 kV line tower arrangement

66 kV electrical extensions at Boane substation

At Boane 66/33kV Substation, a second busbar is to be added and allow for the connection of two new 66 kV line bays at

the substation to accommodate the new 66 kV Namaacha WPP export lines.

In order to accommodate the additional busbar and the two incomer 66kV feeder lines from the Namaacha WPP, as well as the Statcom, the Boane substation yard is to be extended by approximately 25m to the East.

Figure 4 – Existing Boane substation (yellow) and proposed extension (red)

Support Components and Activities

Further to the Project's main components, described above, the implementation of the transmission line will require complementary components and activities, which are required to support the Project's construction or to allow its operation and maintenance. These include:

Construction of access roads, for line construction and maintenance purposes

During the construction phase, road access will be required to access tower locations. Preferably, this will be done either through the line's RoW or through existing roads. In general, an access track will be built along the line route (right-of-way RoW), with 4 m minimum width. This will be the main access for construction and maintenance, and it will be located within the RoW.

Opening and exploration of borrow pits

The inert materials and aggregates required for access construction and civil works associated with the line will be sourced from borrow pits. These materials will be sourced as close to the work site as possible. The location of these borrow pits has yet to be defined at this phase of project development and is normally selected by the construction contractor with approval from the Proponent and District authorities.

Worker accommodations and services

Currently the contractors expect to utilise local accommodations for the staff rather than having an independent accommodation unit. A bus transportation service shall be provided. There shall be a construction compound at the CEN[2] site in Namaacha that will contain catering, changing rooms, welfare (including showers), parking, workshop, laydown area, first aid, septic tank, etc. The transmission line construction will also be supported by this main camp.

Development and maintenance of right-of-way (RoW)

A 50 m corridor (25 m outwards each of the two parallel power lines, plus the 20 m spacing between lines, totalling 70 m, where the arrangement is a two single-circuit monopole lines, i.e., in the first 29 km from Namaacha wind farm) will be established as the transmission line protection zone (here considered to be equivalent to the right-of-way - RoW), in accordance with the Decree 57/2011, concerning to the security of high-voltage transmission lines, and Law 12/2022 (electricity law). The RoW is required to protect the system from unexpected events, contact with trees and branches and other potential hazards that can result in system damage, power outages or forest fires. As such, within the RoW, there may be a need to remove vegetation, or to relocate or resettle built structures, if they constitute a risk to the power line.

Workforce

The required labour force quantities for the construction phase are currently estimated to be no less than 200 workers for the transmission line. Most of these workers will be national. A small number of foreign workers may be required to provide specialized knowledge.

Workforce needs for the operational phase are expected to be very low. The operation of the line and substation will be done by EDM's existing personnel. Small teams (e.g., <5 individuals) may be employed to perform maintenance clearance of the RoW.

Schedule

Total project development will take 18 months, of which 9 to 12 will be the construction, depending on the contractor and terrain issues.

The CEN (wind farm project) will be constructure approximately in the same timeframe.

The design life of the line and substations is usually around 35 years. However, with adequate maintenance and/or upgrading it may stay in operation for longer than that.

Investment Budget

[2] Out of scope of the present EIA/EIS. CEN (WPP) has an independent EIA process.

The construction of the transmission line will have an investment of approximately USD $30,000,000 (line+ statcom).

7 PROJECT AREAS OF INFLUENCE

The project's Area of Direct Impact (ADI) is the area likely to be directly affected by the main project components (area occupied by the line's towers, the substation, and the RoW to be established), and the area where direct impacts from the construction and operational activities may be felt.

The Project ADI is defined as a 600 m corridor centred in the alignment and includes the Boane Substation. This width accounts for the RoW (i.e., 50 m), where most impacts will occur, plus an additional area where some direct impacts, such as noise and dust emissions, may be felt.

The project's Area of Indirect Impact (AII) is defined as the area indirectly affected by the project, the area where indirect impacts resulting from direct ones are felt. The AII was defined as the districts crossed by the transmission - Boane and Namaacha.

In terms of the biophysical environment, few or no indirect impacts are expected outside of the ADI. Socioeconomic indirect impacts such as the development of informal commercial activities due to the mobilisation of workforce are likely to be experienced mostly in the areas closer to the alignment and to the location of construction camps.

As such, the limits of the districts crossed by the transmission line - Boane and Namaacha - were adopted as the limits of the Project AII.

8 ENVIRONMENTAL AND SOCIAL BASELINE

Climate

According to Köppen classification, the project site falls under the regional tropical savannah and rainy climate (Aw) that covers a large portion of coastal Mozambique. Average temperature ranges from 18 to 25ºC, with a very pronounced seasonal distribution of rainfall, with over 80% of annual precipitation occurring during the wet season. The direction of the prevailing winds from the south, northwest and northeast quadrants with an average wind speed is of 10.3 mph.

Air Quality

No air quality data is available from air quality monitoring stations in Mozambique. As such, a qualitative assessment of the existing air quality was conducted based on literature review and considering the major pollution emission sources that may be expected to be present in the study area and by using international databases, such as the NASA's Earth Observing System Data and Information System.

Few atmospheric pollution emission sources were identified in the Project area (a main road and residential area near the Boane substation), and none of them are of high intensity. Considering the low significance of the existing emission sources along the project area and based on the background concentrations of atmospheric pollutant, the ambient air quality of the study area can be described as being relatively good. The ambient levels of key pollutants, such as Particulate Matter and Nitrogen dioxide are low and in full compliance with the limit values established by the national air quality standards. In conclusion, the ambient air quality is expected to be relatively good as the study area will fall mainly in mostly undeveloped and rural areas with one.

Geology

The study area crosses several geomorphological units, from the Lebombo Mountains to the alluvial plain in Boane. The regional geomorphology is characterised by alternation of cuestas and plane valleys.

The description of geological formations in the study area is based on GTK Consortium mapping of the Karoo volcanic rocks and related hypabyssal intrusions in southern and central Mozambique and of the quaternary deposits, subdivided into Pleistocene deposits such as the Internal Dunes, Fluvial Terraces, Coastal Sandstones (or 'Beach Rock') and Lacustrine Limestones and Holocene deposits such as flood plain deposits of a sandy-clayey or mud composition.

The dominant geologic units in the study area are the Upper Karoo, the Movene and Umbeluzi Formation. To a lesser extent, Tertiary and Quaternary formations of sedimentary nature occur.

The powerline crosses 4 mining concessions (bentonite, rhyolites and construction stone) and 1 area with a prospecting and research license (bentonite).

Soils

The soils present in the study area originate from areas of igneous rocks, although the paedogenetic processes are the result of the interaction of several factors, and their influence can vary depending on the specific location and environmental conditions.

Main soil units in the study area are therefore associated with volcanic conditions and, in line with the classification criteria used by INIA, soils are grouped into one major physiographic unit - Igneous Rocks Areas. These soils occur in areas associated with the Limbobos' volcanic range, Karroo rhyolites in elevated regions with non-level topography.

Hydrology

The proposed transmission power lines routes fall on the Umbeluzi River basin, that flows in an easterly direction to Maputo.

The main tributaries of the Umbeluzi are the White and the Black Umbeluzi in Swaziland as well as the Movene and the Impamputo rivers in Mozambique at the project area.

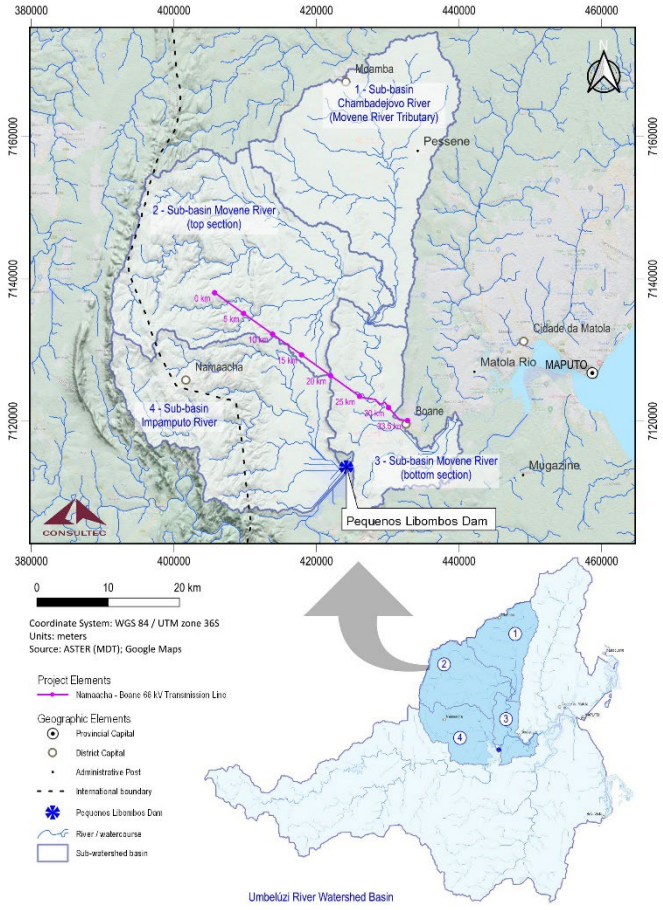

Figure 5 – Umbeluzi sub basin intercepted by the proposed power line route

Landscape

The Namaacha District, where the study area is located, can be divided according to the following geomorphological units:

- Highlands - the Complex of the Libombos Chain;
- Medium plateaus - adjacent to the first;
- Slopes; and
- Small plains of 100 - 200 m in the alluvial valleys along the rivers.

It is dominated by the Libombos mountain range, which extends in a north-south direction, with its highest point about 800 m, on Mount Mponduine. The surface of applanation descends towards the east, with several rivers cutting the mountains in a W-E direction.

Land cover in the project area has mixed characteristics, ranging from areas of natural vegetation with some scenic value, punctuated by agricultural areas. The mainland uses in the proposed area are shrubs and agriculture.

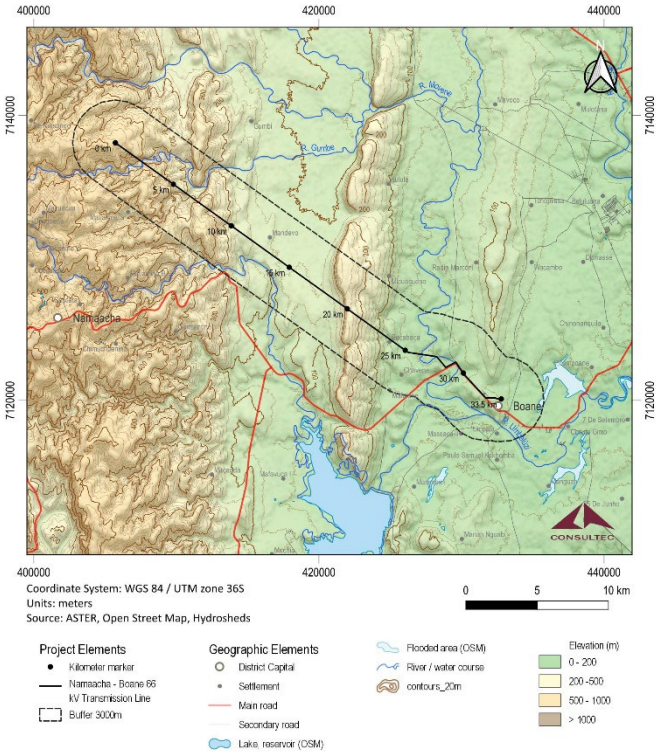

Figure 6 – Land morphology along the project area

Biological environment

The characterization of the flora and fauna in the study area was carried out through the collection of secondary and primary data. Secondary data were obtained through literature review in the preparation phase for the field survey and includes data collection based on the interpretation of land use and land cover maps based on the forest inventory (2018), observation of Google Earth 2022 imagery, as well as the characterization of terrestrial plant communities.

To complement secondary data collection, a field survey was conducted between October 31st and November 4th, 2022 (dry season) to allow primary data collection on flora, vegetation and habitats, terrestrial vertebrates, birds and bats. A second field survey was conducted between March 16th to 20th, 2023 to complement the information for birds and bats for the wet season.

Regarding the ecological framework of the project's footprint area, the flora and vegetation present are subject to a high degree of disturbance. Natural vegetation can be observed in the area, although with some signs of enthronization. The main types of land uses occurring in the Project's areas of influence are shrub vegetation and non-tree cultivation areas.

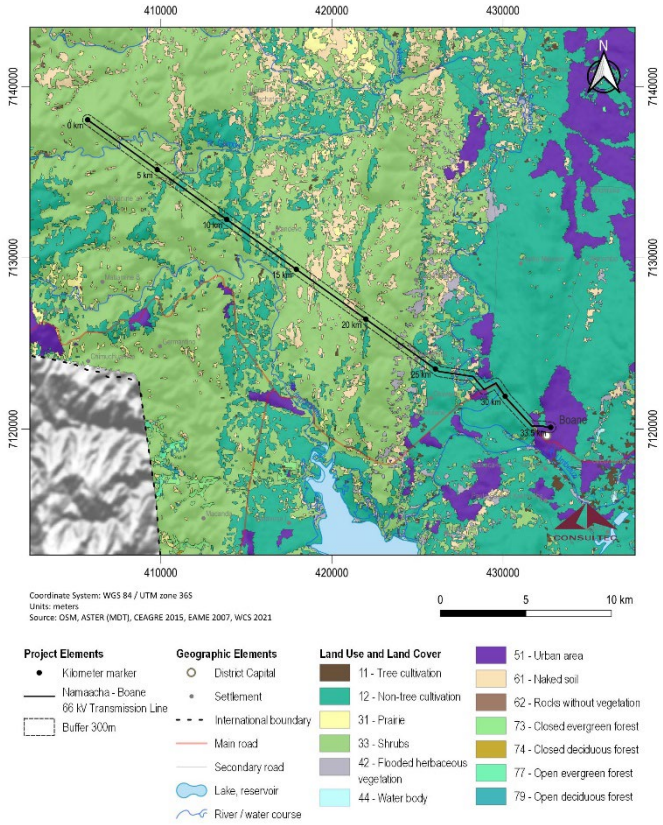

Figure 7 – Map of Land Use and Cover

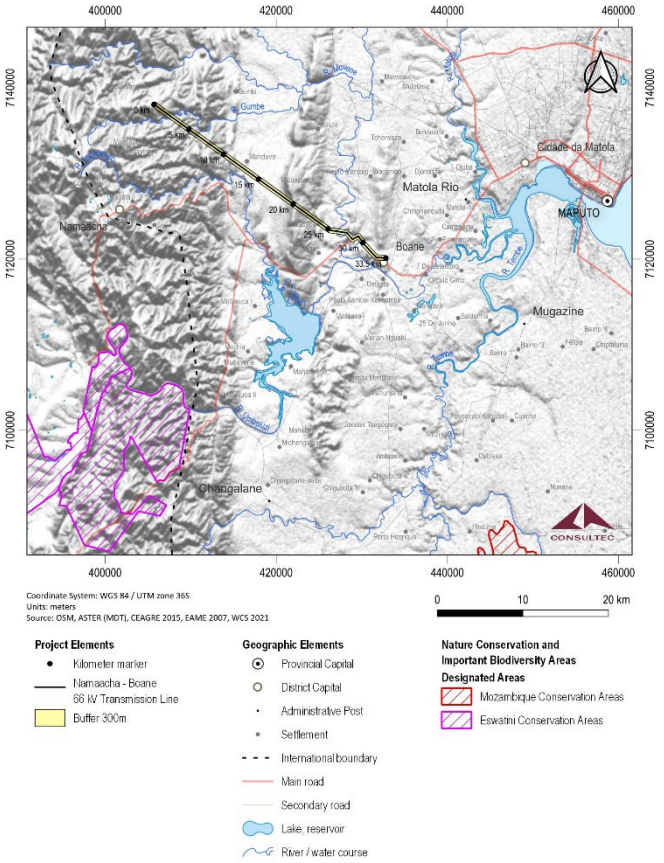

Figure 8 – Conservation areas in the region

The project area has a moderate to high diversity of avifauna, particularly of smaller terrestrial species which are less likely to suffer collision impacts. However, no Important Bird and Biodiversity Areas (IBAs) are crossed or are near the Project area.

The Project does not cross nor is it near any nature conservation area. Similarly, no Key Biodiversity Areas (KBAs) are crossed and closest KBA is located about 30 km southeast of the Project area.

The initial section of the transmission line route (up to km 8, approximately) crosses an area classified by CEAGRE (2015) as Critical Habitat[3]. This was supported by a previous Critical Habitat Assessment, performed at the national level and using low resolution mapping, with no ground-truthing.

Following the results of the two field surveys conducted, it is Consultec's professional opinion that none of the Area of Influence would be considered as critical habitat under PS6.

This area corresponds to the Lebombo Mountains, classified as a habitat of endemic species and as an area of high scientific value containing concentrations of new or little-known species (CEAGRE 2015). Both designations correspond to criteria for determining critical habitats as defined by IFC PS6.

89 bird species were observed, of which 39 were recorded in both seasons of the year. In the second campaign, 32 new species were observed, which had not been registered in the previous campaign. While 18 species recorded in the first campaign were not observed in the second. This indicates the dynamics in terms of species variation at this location throughout the year, i.e., there are many local movements between species areas, including some migrations. About

3 It is worthwhile mentioning that CEAGRE's study was carried out at the national level, meaning that it is likely to result in inaccuracies at the local level.

16% of the observed bird species are considered migratory in the study area, of which 7% are palearctic migrants and 9% are intra-African migrants. The other species are considered common residents in the region, that is, they are present all year round. This finding emphasizes the importance of this area for migratory birds in addition to resident birds.

All of the observed species have a Least Concern conservation status according to the IUCN red list (IUCN, 2023).

Socioeconomic environment

The study area is located in the Maputo Province, crossing the District of Namaacha and the District of Boane. The Namaacha District is divided into two administrative posts and eight localities, and the Boane District is divided by two administrative posts and five localities.

The main ethnic group in the Province of Maputo is the Tsonga, who follow a patriarchal system. Due to the fact that Maputo Province is the main economic and financial centre of Mozambique, it has become an attractive centre for people seeking employment and better opportunities. As a result, there is a great diversity of ethnic groups and nationalities such as Chope, Bitonga, Portuguese and South Africans.

The population for Maputo Province in 2017 was 1 908 078 inhabitants. With 210,367 inhabitants living in the Boane District (corresponding to 11% of the province's total population) and 47,129 inhabitants living in the Namaacha District, being the latest the district with the lowest population number in the province representing about 2% of the province´s total population.

The education system for both Boane and Namaacha Districts follows the same trend as the rest of the country, with a focus on Primary Education as illustrated by the significantly larger number of primary education facilities in comparison with secondary or tertiary education facilities. Namaacha District also private vocational training institutions, namely, Teachers Training Institute, Namaacha Agricultural Institute and the Higher Institute of Education and Technology. Boane District also has three private institutions of higher education and three technical public institutions.

According to INE (2013) in 2012, Boane District had 16 health care facilities, of which is one classified as Type I Health Centre, nine as Type II and six of Type III, for the provision of basic services and primary and curative care. According to the same source, in 2012, Namaacha District had a total of 11 health facilities classified as Type I and II Health Centres, for the provision of basic services and primary and curative care.

In urban and peri-urban areas of Mozambique, electricity is the main source of energy and is supplied by *Electricidade de Moçambique* (EDM), whilst water is supplied by *Águas de Moçambique* (AdeM).

In Namaacha District there are five small water supply systems (Namaacha Town, Mafuiane, Changalane, Goba and Michangalene), and 161 dispersed water sources, of which 85 in Namaacha Sede and 76 in Changalane Administrative Post. The safe water access rate in the district is good covering about 88% of its inhabitants.

Boane District is equipped with a public water supply network, provided by Águas da Região de Maputo and the Fundo de Investimento e Património do Abastecimento de Água (FIPAG). In rural areas, water supply is usually provided from sources connected to the general water supply network, as well as from boreholes, wells and even from direct consumption from rivers and lakes. In Boane District there is also the Pequenos Libombos Dam, a vital infrastructure built with the intention of guaranteeing the provision and supply of water to the region of Maputo and Matola cities.

With regards to sanitation, the type of sanitation used within the Namaacha District by most households is the unimproved latrine, followed by those who declared not to use any sanitation system. Only a small part of the families (5.7%) uses a toilet connected to a septic tank.

Boane District has a system of individual family septic tanks. In more rural areas, the majority of the population uses latrines and in more rural areas most of the population uses traditional or improved latrines.

In Namaacha District there is rail and road transport, being the most common type of transport infrastructure in this district the road transport, with the public transport being mainly done by minibuses (*chapas*) and buses (*machibombos*).

In Boane District there is also rail and road transport. The railway line that connects Maputo city and Goba passes through the district and has been used to transport passengers and cargo to different places in the district as well as for product export through the port of Maputo.

Both the Namaacha and Boane Districts have a good network of roads, of which primary roads are in good condition while secondary and tertiary roads are in a poorer condition (especially during the rainy season).

Communication in the Namaacha and Boane Districts is provided by cell phone companies T-Mcel, Vodacom and Movitel, as well as Telecommunications of Mozambique (TDM).

9 IDENTIFICATION OF POTENTIAL ENVIRONMENTAL AND SOCIAL IMPACTS

Potential impacts of the Project are assessed for each component of the biological, physical, and socio-economic environment, whose baseline is described in Chapter 6 of volume II of the EIS, for which relevant impacts were identified. Impact identification was based on the preliminary impact scoping developed in the Environmental Pre-Feasibility and Scope Definition Study (EPDA) and was updated considering the findings of the specialist studies and other more detailed analysis undertaken for this Environmental Impact Study (EIS).

The potential impacts of the proposal resulting from the project activities were identified through a systematic process, which are considered carefully the interactions between the project proposed activities and the biophysical and socio-economic environment, to identify the environmental impacts of the project.

The following table presents the preliminary identification of the environmental impacts of the project and the potential measures that can be applied to minimize the identified impacts.

The identification of impacts presented is based on the level of knowledge available.

#	Impact Description – Construction Phase	Significance Rating		Nature of Impact
		Pre-mitigation	Post-mitigation	
Climate and Climate Change				
1.	GHG emissions during the construction phase	**Very Low**	**Very Low**	(-)
Air Quality				
2.	Increase of dust emissions near sensitive receptors	**Very Low**	**Very Low**	(-)
3.	Increase in atmospheric concentrations of exhaust gases from vehicle and equipment operation	**Very Low**	**Very Low**	(-)
Noise				
4.	Increase of noise levels near sensitive receptors during construction	**Low**	**Very Low**	(-)
Geology				
5.	Potential slope instability	**Very Low**	**Insignificant**	(-)
6.	Adverse effects on geological heritage or mineral resources	**High**	**Insignificant**	(-)
7.	Changes in erosion, transport and sedimentation processes	**Low**	**Insignificant**	(-)
Soils				
8.	Impacts on irrigation lands and on soils with suitability for irrigation	**Low**	**Insignificant**	(-)
9.	Increased soil erosion and compaction	**Very Low**	**Insignificant**	(-)
10.	Potential soil contamination	**Very Low**	**Insignificant**	(-)
Water Resources				
11.	Changes to natural run-off patterns and water bodies	**Low**	**Insignificant**	(-)
12.	Accidental contamination of surface and/or ground waters	**Low**	**Very Low**	(-)
13.	Increase of suspended sediments in water bodies	**Low**	**Very Low**	(-)
14.	Changes in groundwater recharge	**Insignificant**	**Insignificant**	(-)
Landscape				
15.	Temporary degradation of landscape at worksites	**Low**	**Very Low**	(-)
Biodiversity				
16.	Wetlands and riverine areas degradation	**Medium**	**Very Low**	(-)
17.	Direct loss of vegetation units and habitats	**Medium**	**Very Low**	(-)
18.	Degradation of nearby vegetation units	**Insignificant**	**Insignificant**	(-)
19.	Reduction of feeding, breeding and roosting areas	**Medium**	**Low**	(-)
20.	Increased fauna mortality and decreased species diversity	**Low**	**Very Low**	(-)
21.	Possible introduction or spread of invasive species in the Project area	**Very Low**	**Insignificant**	(-)
22.	Exclusion of fauna species due to increase of disturbance	**Very Low**	**Insignificant**	(-)
Socio-economic environment				

#	Impact Description – Construction Phase	Significance Rating		Nature of Impact
		Pre-mitigation	Post-mitigation	
23.	Involuntary resettlement as a result of the establishment of the transmission line's Protection Zone	High	Medium	(-)
24.	Disturbance of cultivation areas due to the construction of the transmission line and establishment of the Protection Zone	Medium	Low	(-)
25.	Creation of employment opportunities	Very Low	Very Low	(+)
26.	Transfer of skills to local communities due to mobilization of construction workforce	Medium	Medium	(+)
27.	Local and regional economic stimulation due to construction expenditure	Very Low	Low	(+)
28.	Loss of cultural heritage sites	Medium	Low	(-)
29.	Increase in road traffic and potential damage to existing roads and other public infrastructures	Low	Very Low	(-)
30.	Potential public safety impacts as a result of Project construction and increased traffic volumes	Low	Very Low	(-)
31.	Risk of social conflicts elicited by the Project security personnel	Very Low	Very Low	(-)
32.	Potential impacts on workers' health and safety during the construction phase	Low	Very Low	(-)

#	Impact Description – Operation Phase	Significance Rating		Nature of Impact
		Pre-mitigation	Post-mitigation	
Noise				
33.	Wind-induced noise	Low	Very Low	(-)
Landscape				
34.	Permanent alteration to the landscape	Medium	Low	(-)
Biodiversity				
35.	Indirect degradation of vegetation units and habitats along the RoW	Very Low	Insignificant	(-)
36.	Increased mortality of bird and bat species due to collisions and electrocution	Medium	Low	(-)
37.	Habitat fragmentation due to the presence of the RoW	Medium	Low	(-)
Socio-economic environment				
38.	Creation of employment opportunities	Very Low	Very Low	(+)
39.	Regional economic stimulation, due to increase in power availability	High	High	(+)
40.	Risks to community health and safety due to encroachment into the Protection Zone	Medium	Low	(-)
41.	Potential impacts on workers' health and safety	High	Low	(-)

10 CUMULATIVE IMPACTS

A total of 3 VECs have been selected for the current assessment: They are listed below, along with the indicative aspects that will be considered for the evaluation of cumulative aspects (the indicative aspects reflect the way in which the Project impacts the VEC):

- Flora and vegetation. Indicative aspect: loss of habitats and habitat fragmentation;
- Avifauna. Indicative aspect: decrease of populations (increased mortality);
- Local communities and socio-economic impacts. Indicative aspects: employment opportunities; resettlement impacts; Economic and social development due to increased electricity supply.

As far as relevant planned new developments for the area of interest (Districts crossed by the Project):

- The CEN wind power plant (CEN WPP), a 120 MW wind farm within a site of approximately 855 ha near Namaacha town. The generated electricity from this power plant will be evacuated by the 66kv transmission line. The wind farm followed its own EIA process and has already secured its environmental license from the MTA.

Impacts on the 3 VECs include:

- Direct loss of vegetation units and habitats, indirect degradation of natural habitats (mostly undifferentiated woodland habitats) along the RoW during the operational phase, habitat fragmentation, caused by the establishment and maintenance of the RoW. The cumulative effect is not anticipated to be significant.
- Potentially relevant impacts on avifauna are the increased mortality of birds (particularly birds with large wing spans) and bats, due to collisions and electrocution with the overhead line and towers. This impact is one of the major impacts of high-voltage power lines and is typical of this project typology. It is not expected that the cumulative effect between the two projects will be able to significantly increase the individually anticipated impacts, thus keeping the residual cumulative impact of low significance.
- The most important impact of the Project on local communities are the one deriving from resettlement - the loss of dwellings and other built infrastructure, as well as agricultural plots and businesses - due to the clearance of the RoW. A wide range of cascading indirect impacts will be stimulated by increased power availability, such as general economic development, that by its turn will create jobs/income, demand for a wide range of products and services, tax revenue, social development, etc. This will confirm an expected high significance cumulative positive impact.

11 CONCLUSIONS AND RECOMMENDATIONS

The results of the impact assessment conducted in this EIS are summarized in a tabulated form in Section 9 (a detailed discussion of the impacts is provided in Chapter 7 of Volume II of the EIS).

Assuming the implementation of the mitigation requirements, almost all the Project's negative impacts (35 out of 36 identified negative impacts in both phases) were rated as of insignificant, very low or low significance in the post-mitigation scenario.

No high significance negative residual impacts were identified and only one negative impact was rated as of medium significance in the mitigated scenario, thus being the most relevant one: Involuntary resettlement because of the establishment of the transmission line's Protection Zone.

Despite the proposed alignment for the transmission line has been designed with the general strategy of not crossing settlements, as much as possible, it will nevertheless require the physical and economic relocation of some affected people. In this context, further refining of the transmission line route is a recommendable next steps to further reduce this impact.

Regional economic stimulation, due to increase in power availability was assessed as a highly significant positive impact.

Considering the above, the Project will result in both positive and negative impacts on the receiving environment, which was to be expected. However, it should be noted that no high significance residual negative impacts were identified and that the positive impacts seem to outweigh the negative ones, resulting in a favourable balance, and as such the Project is considered to be environmentally feasible, if all mitigation and enhancement measures outlined in the EIS are implemented by the Proponent.

12 PUBLIC PARTICIPATION PROCESS

The EPDA Phase Public Participation Process (PPP) for the Project was held in the 28th and the 29th of November of December 2022. The draft EPDA Report and its NTS were available both physically and digitally throughout the entire consultation period.

In the same fashion, for the PPP during the EIS phase and two public meetings were held in Namaacha and Boane, on the 18th and 19th of October 2023, respectively. The draft EIS Report and its NTS were available both physically and digitally throughout the entire consultation period.

Following the public consultation meetings, another period of 15 days will be given to I&APs to provide additional inputs for inclusion in the Final EIS Report to be submitted to the MTA. A PPP report was elaborated and is included in the Final EIS.