ECO-TOURISM IMPACT ASSESSMENT FOR THE PROPOSED CONSTRUCTION OF A 400KV TRANSMISSION POWER LINE FROM FOSKOR SUBSTATION (PHALABORWA) TO SPENCER SUBSTATION (NEAR GIYANI) AND SPENCER MTS UPGRADING, LIMPOPO PROVINCE

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EXECUTIVE SUMMARY

Engwe Scoping was appointed by DIGES Group on behalf of Eskom to carry out a Tourism Impact Assessment for the proposed construction of a 400kV transmission power line from Foskor Substation (Phalaborwa) to Spencer Substation (near Giyani) and Spencer MTS Upgrading, Limpopo Province. The study seeks to make provisions for the development and promotion of sustainable tourism for the social, economic and environmental benefit of the affected communities in line with the Tourism Act No. 3 of 2014. The area is experiencing growth due to Electrification, Agriculture, Industrial, Diamond and Coal Mining. Load forecast conducted in 2015 showed that Spencer Main Transmission substation (MTS) will be having a peak demand of 310MV by year 2018. To ensure the reliability of electricity supply to customers, Eskom Transmission has embarked on a drive to address the transmission constraints at Spencer MTS as well as the 275kV transmission network constraints on the network supplying the station.

Eskom has the mandate from the South African Government to provide reliable and affordable electricity to the country and its citizens. The electricity generated can however not be stored, that means it should be used as it is generated, resulting in a stringent supply-demand situation (Chen 2009). A reliable electricity supply is vital for tourism to flourish (Picard and Robinson 2009), as a result, tourism rely so much on electricity. However, transmission lines from which electricity (energy) is carried, are often highly visible and can thus threaten the flourishment of tourism. This is especially true in areas with a high degree of perceived aesthetic naturalness, which are often valued landscapes for nature-based tourism. The study area draws the attention of tourists with its natural beauty and picturesque panoramas. The objectives of the study included examination of various areas of possible impact, dams, natural and geological resources, vegetation and game reserves, as well as man-made and cultural environment. This study thus observe how the impact of the proposed project will have on the Tourism of the area (s), it will give insights on the positive and negative impacts that are likely to arise with the coming of the project. After revealing the impacts, the analysis is done in order to estimate the overall sustainability of tourism in the studied area (Kim 2002). Finally, the study will make possible recommendations that could possibly minimise the negative impacts of the project on the tourism of the affected area.

Glossary

CDF	Conservation Development Framework
DEAT	Department of Environmental Affairs and Tourism
DTGS	The Domestic Tourism Growth Strategy
EIA	Environmental Impact Assessment
GLTP	Great Limpopo Transfrontier Park
GLTCA	Great Limpopo Transfrontier Conservation Area
DWAF	Department of Water Affairs and Forestry
GLICP	Great Limpopo Integrated Conservation Plan
IDC	Industrial Development Corporation
IUCN	International Union for the Conservation of Nature
LEDET	Limpopo Department of Economic Development, Environment and Tourism
NDT	National Department of Tourism.
NEMA	National Environmental Management Act
NEMBA	National Environmental Management: Biodiversity Act
MTS	Spencer Main Transmission substation
NTSS	The National Tourism Sector Strategy
SMMEs	Small, Micro and Medium Enterprises
SAT	South African Tourism
KNP	Kruger National Park

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1. INTRODUCTION

Engwe Scoping Cultural Heritage was commissioned by Diges Group on behalf of Eskom to undertake an assessment of the potential effects on ecotourism in the area proposed for the construction of a 400kV transmission power line from Foskor Substation (Phalaborwa) to Spencer Substation (near Giyani) and Spencer MTS Upgrading, Mopane District, Limpopo Province as part of the broader Environmental Impact Assessment permit application as required by the National Environmental Management Act 107 of 1998 (NEMA). The study focused on the potential impacts of tourism industry in relation to the proposed development. The potential impacts of this proposed development on existing and future ecotourism operations in the project area need to be considered. Ecotourism is based on natural and pristine environments and aims at providing tourists with a quality, natural visitor experience. Therefore, potential developments of this nature may have a negative impact on the baseline natural resource which the study area provides to the ecotourism industry.

2. DESCRIPTION OF THE AREA

The proposed 400kV Powerline is located in Mopani District Municipality which is a Category C municipality and is found in the north-eastern quadrant of the province of Limpopo. This district comprises five local municipalities, including Greater Tzaneen Local Municipality, Ba-Phalaborwa Local Municipality, Greater-Giyani Local Municipality, Maruleng Local Municipality and Greater-Letaba Local Municipality. Game farming is the most dominant activity in the project area (especially from Tzaneen to Giyani) servitude with most of the farms being private commercial farms. Reference is made to Figure 1 overleaf. The bulk of production within the agriculture sector takes place on privately owned commercial farms. The most significant farming commodities are cattle and crop farming. In terms of crop farming, commodities include maize, ground-nuts, sunflowers, cotton and sorghum. Vegetables are mostly produced on subsistence farms, which are cultivated for private use or sometimes sold on the informal market.

The wildlife is abundant within the proposed project area, with privately owned game parks such as Selati game reserve, Ndzalama wildlife reserve and Lekkersmak game reserve which are renowned for their abundance of wildlife (including the big five), craggy mountains, huge man-made and indigenous forests, trout streams and cascading waterfalls. It is mostly here in the game reserve were significant tourism attributes in the form of wildlife and beautiful scenery are

threatened by the proposed power line routes. Tourism development in the area is, however, at an early stage with most tourism establishments concentrated along the Foskor-Spencer powerline. The tourism potential of the area is widely recognised and expectations of future performance are high (World Tourism Organization, 1995).

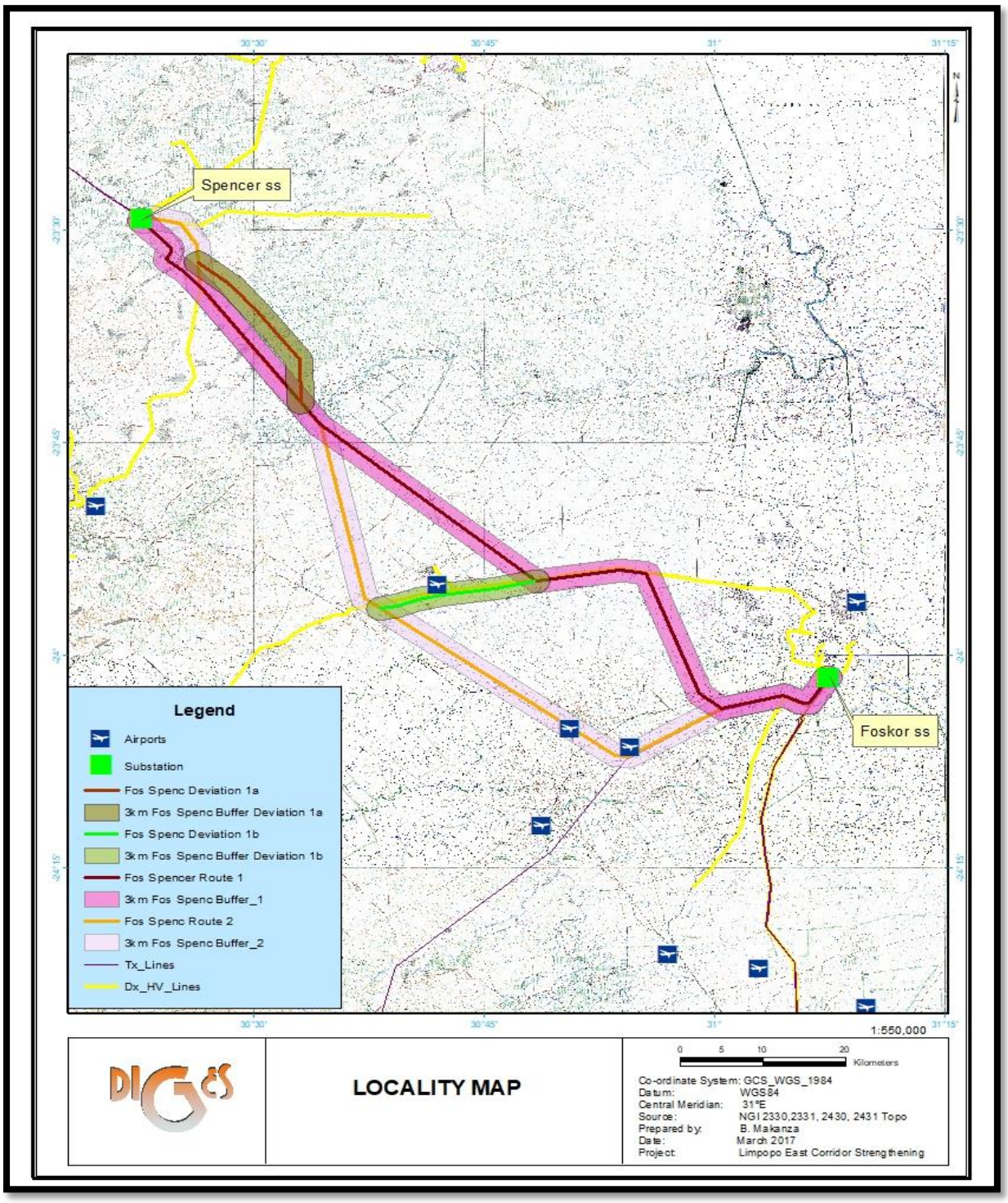

Figure 1: An overview of the Topographical map of the proposed area (Courtesy Diges Group).

3. METHODOLOGY AND APPROACH

A systematic methodological approach was applied in order to maximise understanding of the tourism of the area, as well as to what extent it can be endangered by the proposed development. This was however based on a generic framework of what should be covered in an assessment of effects on tourism for any linear development. Firstly, a desktop study was undertaken, this was followed by a field survey and then analysis of findings. Below is the detailed explanation of activities conducted and their main purpose:

A desktop study entailing observing the South African tourism industry from both a Provincial and National perspective, taking into consideration trends and potentials, as well as evaluation of tourists destinations found in the area such as nature reserves, private game reserves, private game farms and lodges, as well as eco-tourism attractions within the study area.

A site inspection of the area was undertaken with an aim of verifying tourist's destinations and locating any new ones which could have been missed during desktop study. Furthermore, the desktop visual impact assessments was undertaken using Google Earth View-shed tools. Eventually, the assessment for this study was compiled and includes the following aspects:

- Identification of tourism attractions and potential impacts;
- The Tourism Status Quo;
- Identification of mitigation measures;
- Discussion on impact significance; and
- Final recommendations.

4. ASSUMPTION AND LIMITATION

Several limitations were noted during the study, these limitations have thus opened the room for assumptions. Thus, below are the assumptions and limitations of this study:

- The length and width of the alignment, as well as the time frames made it almost impossible to identify and visit every facility along the respective corridors and in the surrounding areas. As such, the area was research in a more broad approach with the main focus on desktop studies;
- Tourism is very diverse, as a result, certain aspects of ecotourism experience, specifically "sense of place" is subjective by nature and could be viewed in a very different light by different stakeholders;

- Given the precinct of some of the area, it is possible that some of the area could have been used for/ and or earmarked for tourism activities such as mountain biking, hiking and fishing;
- It is noteworthy that the ecological assessment would take into consideration the impacts on sensitive habitats/ ecological features which may attract visitors; and
- As aforesaid, this study was largely desktop, and the actual tourism trends of the area are difficult to estimate since they are not readily available, and will require in-depth interviews with product owners. In depth interview was thus not possible.

5. PURPOSE OF THE STUDY

Ecotourism is a very diverse both in definition and application, its definition also does not help the situation. For example, The International Union for Conservation Nature (IUCN) has defined it as "Environmentally responsible travel to natural areas, in order to enjoy and appreciate nature (and accompanying cultural features, both past and present) that promote conservation, have a low visitor impact and provide for beneficially active socio-economic involvement of local peoples", on the other hand, the International Ecotourism Society (TIES) had defined it as "responsible travel to natural areas that conserves the environment, sustains the well-being of the local people, and involves interpretation and education". This diversity calls for a more focus South African definition. Thus, in South Africa, ecotourism can be defined as travel to natural areas, which conserves the environment and improves the welfare of local people. Examples will include photography, stargazing, birdwatching, hunting, fishing, camping, hiking, and visiting natural attractions. Thus, South Africa tourism is multi-sectoral in nature and includes amongst others, issues of infrastructure and use of natural spaces as tourism products, and involves several stakeholders such as resort owners, tour operators and tourists, and communities who live in the vicinity of tourism destinations. Tourism has social, economic, cultural, environmental and political implications for these stakeholders, and it is in that view that their concern should be considered. This study seeks to make provisions for the development and promotion of sustainable tourism in line with the Tourism Act No. 3 of 2014, and will considers amongst others the following:

- Nature reserves and protected areas;
- Game lodges;
- Hiking trails;
- Mountain Bike Trail;

- Nature based activities such as birdwatching;
- Scenic attractions;
- Cultural attractions, and
- Equestrian activities

The study will further observe how the project will have an impact on the above mentioned activities, and it will highlight and provide possible mitigation measures on negative impacts that are likely to arise with the coming of the project. In short, the aim of this assessment is the following:

- To identify and evaluate any resources within the specified development project area (s);
- To identify and assess all impacts on tourism resources imposed by the development;
- To recommend viable alternatives or options for managing unavoidable adverse impacts.

6. POLICY AND LEGISLATIVE FRAMEWORKS

The legislation indicates that the proposed development has a number of regulations and guidelines that apply to both the construction and operation phases. The tourism related legislation and guidelines encourage environmentally responsible tourism with an emphasis on sustainability. The current legislative and policy context guides the study and include but not limited to the following:

6.1 The Tourism Act No. 3 of 2014

Replacing the Tourism Act of 1993, this Act makes provisions for the development and promotion of sustainable tourism for the social, economic and environmental benefit of South African citizens. The process to review the Tourism Act of 1993 began in 2009 in consultation with all spheres of government; tourism stakeholders; the private sector and the South African Public. More than 450 comments were received from discussions relating to the voluntary provision of information by tourism businesses, Tourism Norms and Standards and the role of the Tourism Complaints officer.

The challenge was that the tourism sector could have different pieces of legislation and policies that may not fall within the mandate of the National Department of Tourism (NDT). There was therefore a need for coordination. Some of the provisions contained in the Tourism Act attempted to deal with aspects that fell within the mandate of the NDT, as well as with aspects covered by other pieces of legislation. It was therefore prudent for the NDT to check on whether the

environment was sufficient or not. The old Tourism Act of 1993 mainly covered the SA Tourism Board. There was thus a need for a new Act as tourism was a concurrent function.
The main objectives of the new Act are the following:

- Promotion of responsible tourism practices;
- Provisions for the effective marketing of South Africa, both domestically and internationally through South African Tourism (SAT);
- Promotion of quality tourism products and services;
- Promotion of economic growth and development of the sector;
- Establishment of concrete intergovernmental relations to develop and manage tourism.

Tourism Act No. 3 of 2014 embraces the National Tourism Sector Strategy (NTSS) as part of the legislative framework for the management and development of tourism. The Act will enable the sector to address gaps identified during the review process pertaining to the lack of knowledge and information about the sector; the lack of adequate structures for the management of tourism, failure for the drastic SMME transformation and the lack of service excellence in the sector. The Act will come with the introduction of a Tourism Complaints Officer who will be based at the National Department of Tourism (NDT). The Tourism Complaints Officer will receive and refer tourist's complaints to relevant authorities nationally. The officer will also play an advisory role of recommending the accreditation of tourism schemes and monitoring their effectiveness.

6.2 The National Tourism Sector Strategy (NTSS)

The NTSS is the main policy frame work of the tourism sector, it aims to grow both the overall contribution of tourism to South Africa's GDP, as well as the specific contribution of domestic tourism, and specifically focuses on the promotion of a greater "culture of travel" in South Africa.

6.3 The Domestic Tourism Growth Strategy (DTGS)

DTGS focuses on sustainable tourism, promoting a culture of travel, encouraging greater industry stakeholder participation, and developing innovative, diverse and affordable packages that meet the needs of a wide range of domestic travellers.

6.4 The White Paper on the Development and Promotion of Tourism in South Africa, 1996

The White Paper provides a broad framework to guide the development, planning and management of tourism in South Africa. The context is set through a discussion on the potential

and economic role of tourism in the country and the identification of constraints that hinder the realisation of this potential. Some of the key constraints relate to inadequate funding, limited community integration, inadequate education and training, poor environmental management, lack of infrastructure, increased levels of crime, and a lack of national, provincial and local tourism structures. Identifying tourism as an engine for economic growth, the White Paper builds a rationale and sets a clear vision for responsible tourism development. The vision is supported by a set of guiding principles for responsible tourism development and is underpinned by economic, social and environmental objectives.

In addition to its recommendations on specific policy development that will smooth the progress of tourism development, the White Paper broadly defines the roles to be played by various stakeholders involved in tourism, and provides a framework for institutional arrangements for tourism in South Africa. Although the White Paper was developed at national level, it provides an overarching framework to guide tourism development across South Africa. In this respect it allows for the alignment of National, Provincial and Local tourism development to ensure "that everyone pulls in the same direction". The White Paper does not address specific requirements on Provincial or Local level, nor does it provide the required strategic direction. Provincial and Local governments therefore need to align to, and take guidance from the National White Paper when developing their own tourism development strategies as it pertains to the current specific dynamics.

6.5 The Tourism Bill 2012

This bill was passed into law by the National Council of Provinces (NCOP) to formulate the Tourism Act of 2014. The Bill replaced the Tourism Act of 1993 and enacts the NTSS as the main policy framework for the sector. It also introduces new norms and standards, tourism grading systems, and measures to offer greater protection to customers. In this policy and legislative context, there is significant government support for the development of new tourism facilities.

6.6 Institutional Guidelines for Public Sector Tourism Development and Promotion in South Africa, 1999

The Inter-provincial Technical Committee of MINMEC (a joint forum of ministers responsible for tourism matters) compiled the Institutional Guidelines, published by the then Department of Environmental Affairs and Tourism (DEAT) in 1999. It seeks to formulate the institutional system and mechanisms to facilitate synergy in the management of tourism between the various tiers of government. The document further provides clarity on the roles, responsibilities and allocation of

funding at National, Provincial and Local Government level to inform intergovernmental coordination on matters regarding tourism. It is recognised in the institutional guidelines that historical development trends, macro conditions, constitutional dispensation and existing tourism structures differ at the various levels of government. Three models of institutional structures have therefore been proposed to accommodate the relevant circumstances at each level. These include:

- Differentiated model;
- Mainstream model; and
- Independent model.

One set of guidelines is proposed to ensure effective monitoring and control regardless of the model followed. Specific guidelines and conditions with regards to the roles and responsibilities at each level of government had also been provided.

7. TOURISM INDUSTRY AND TRENDS IN LIMPOPO PROVINCE

To understand the tourism potential and trends currently evolving in South Africa, with specific relevance to the Limpopo Province, a detailed evaluation was undertaken of current tourism conditions, currently prevailing in the Limpopo Province tourism industries. These will be discussed briefly below:

7.1 Trends

Limpopo experienced increases in growth of domestic tourism between 2007 and 2012, while growth in international tourism declined over the same period as a result of the global economic meltdown (Molokomme & Mashile, 2014). In 2010, the tourism sector's contribution to the GDP was higher for both the national as well as the provincial economy, as a result of the gains from the FIFA World Cup in South Africa (Molokomme & Mashile, 2014). In 2014, Limpopo received a total of 1,6 million international arrivals which accounts for a growth of 15,3% as compared to 1 472 173 arrivals in 2013. Research goes further to show that 68% of these international tourist who visited our shores, did so for holiday purposes and are involved in wildlife activities. Kruger National Park remains the biggest attraction, as well as, Provincial Parks, Private Game Reserves and Flea or craft markets (Limpopo Tourism Agency, 2015).

Limpopo was the biggest beneficiary of domestic trips in 2014 receiving 7.4 million domestic trips, a growth of approximately 32% and beating all eight (8) Provinces in the country. This is an improvement from 5.6 million trips in 2013 at the growth of 20%, which accounts for an increase of 12% in 2014 (Limpopo Tourism Agency, 2015). Most of the trips to Limpopo are generated

from within the Province that is intra-provincial travel. VFR's (Visiting Friends and Relatives) still proved to be a very important source market for trips to and within Limpopo, this further tells us that our people are travelling within their Province and becoming brand ambassadors for the Province (South African Tourism, 2011).

During the period July to September 2016, the total revenue created from domestic tourism market amounted to R3,5 billion in 2016 which was a decrease compared to 2015. Limpopo continued to receive the most number of trips, followed by Gauteng and Eastern Cape (South African Tourism, 2011).

Table 1: Table showing Domestic Tourism trends from the year 2014 to 2016

Metrics	2014	2015	2016
Total Trips	5.1 million	5.7 million	4.5 million
Total Revenue	R4.9 billion	R5.8 billion	R3.5 billion
Total Bed nights	22.5 million	19.7 million	18.2 million
Provincial Share of Trips	Lim:29% GP:18% KZN:17%	Lim:23% KZN: 22% EC: 14% MP: 13%	Lim:35% GP:14% EC: 13% KZN: 11%

Source: South African Tourism Domestic Tourism Survey 2016

Based on research conducted in 2003 and 2011, South African Tourism (SAT) has segmented the domestic tourism market into 14 main categories of travellers. The focus of this study, guided by the SAT segmentation, is on the low- and middle-income groups. These are:

i. low-incomes singles and couples
ii. low-income families
iii. Black single parent families;
iv. Low-income black singles;
v. Up-and-coming singles; and
vi. New horizon families.

Analysis of these segments shows a number of commonalities. Most domestic tourists in these categories are black, and between the ages of 25 and 40. Some are married and other single, and some have dependent children. Most have a high-school education, and have been described by SAT as working in "blue collar", "white collar" or unskilled jobs, and personally earn between R3,000 and R10,000 per month. This segmentation, identified by SAT as under-served in the

current domestic tourism market, has determined the assumption on the tourists target market in the project area and the whole of the Limpopo province as it forms part of the South African domestic tourism.

7.2 Tourist Attractions in Limpopo

Tourism has been identified as one of the sectors on which the province enjoys a competitive advantage. Since the whole province offers unique tourism attractions, eight sub-clusters have been identified and are listed here as follows:

- Special interest activities, such as Mapungubwe and Nyslvlei Birding;
- The game industry value-chain;
- Golf and game tours;
- Biospheres, such as Waterberg, Soutpansberg, Kruger to Canyon and Lowveld;
- Family entertainment (including resorts, sport and picnic places);
- Polokwane business tourism (Anchor projects would be the International Convention Centre, sporting complex and the airport);
- Mountain adventure on escarpments, and
- Transfrontier Parks.

Limpopo's cultural heritage pathways can be traced back to Bakone Malapa Open Air Museum. Rock carvings indicate the presence of San people thousands of years ago. Stone Age implements were also found. Stone wall complexes, cattle kraals and pottery remains suggest that Northern Ndebele people lived here between 1600 and 1650, followed by the Bakone ba Matlala in 1700. Shangaan people joined them later approximately 1850. Traditional cooking, dancing, woodcraft and basketry are demonstrated to visitors. The Polokwane Municipal Game reserve is also another attraction, conserved Pietersburg plateau False Grasslands with its associated plant and animal species. It has granite outcrops, acacia trees and Aloe Marlothii forest. More than 300 bird species have been recorded. There are 58 mammal species including (including tsessebe and sable antelope) as well as 41 and 14 frog species. The Zion Christian Church which is located on mount Moria, this church draws millions of pilgrims to the annual Easter worship ceremonies that extend over three days (Limpopo Tourism Agency, 2016).

Near Modimolle in the south is the sacred flat topped mountain known as the Mountain of God. The Bakgatla, Bantwane and Langa Ndebele clan are associated with this mountain. It is seen as a sacred place where people still sacrifice food and snuff to the ancestors. The mountain is also used

extensively by traditional healers for training and collection of medicinal plants. It is believed that a very large snake *mamogaswa* lives on the mountain (Limpopo Tourism Agency, 2016). Limpopo Nature Reserve in South Africa's Limpopo Province, also include many esteemed parks and reserves such as the Kruger National Park, Welgevonden and the Waterberg area close to the hot springs of Bela-Bela, is Nylsvlei, an international RAMSAR wetland site. It is renowned for its birdlife and more than 365 bird species have been recorded there. Some of the 104 water birds breed nowhere else in South Africa. Birders also seek the 250 odd woodland species therefore levelling the seasonal dependence on the wetland, there are rare species of birds throughout Limpopo. The wildlife is abundant with perhaps even mamogaswa or the woolly headed snake at the Sagole hot springs (Limpopo Tourism Agency, 2016). Limpopo is also home to some of the biggest trees in South Africa, like the Mighty baobabs in Sagole and also near Modjadjiskloof. At Gravelotte, there is another baobab tree which had found a place in the history books because it had a large hollow inside its trunk, this was used by the prospectors and miners from goldfield at Leydsdorp to store their beer. The temperature inside was just a few degrees cooler than outside (Limpopo Tourism Agency, 2016).

There are also huge yellowwood and matami trees, and other extensive indigenous forests in the Wolkberg and Blouberg mountain ranges, rare grasslands endemic chameleons, butterflies and lizards. In Bela Bela, there are several family entertainment with hot springs and refreshing pools with as well as at Eiland and Tshipise the list is extensive (Limpopo Tourism Agency, 2016).

8. TOURIST ATTRACTION IN THE MOPANE DISTRICT

The Industrial Development Corporation IDC, established in 1940 by an Act of Parliament (Industrial Development Corporation Act, No. 22 of 1940) has identified the development of a new budget tourism destination chain as a social tourism initiative. Social tourism is defined as a collection of initiatives that aim to promote greater participation in tourism and leisure activities, particularly among low-income people and families, in recognition of the social benefits that ensue for communities and society. In order to make social tourism a reality in South Africa, the IDC has also begun a process of identifying under- and un-utilised public recreation facilities owned by provinces, municipalities and government departments, which could be acquired, used and redeveloped for budget tourism destination sites, while reducing upfront investment costs. The project electrification of villages and small towns in Limpopo is likely to aid the development for the tourism destination in the towns; the Eskom electrification project goes hand in hand with the IDC idea of developing social Tourism.

The Mopane region is known for its abundance of wildlife (including the Big Five), craggy mountains, huge man-made and indigenous forests, trout streams and cascading waterfalls. The region provides easy access to the northern section of the Kruger National Park, and its major towns includes Phalaborwa, Tzaneen, Modjadjikloof and Giyani. The area also has the Kruger Getaway Airport that connect Phalaborwa with International Airports. It is also home to the legendary Rain Queen of the Balobedu people, referred to as Modjadji, which means ruler of the day. The road to this magical area is a must 4x4 enthusiast. A hiking trail amongst 800 year old cycads is a particular rewarding for those with a botanic bent (South African Tourism, 2011).
In Phalaborwa, you can visit Foskor Museum and experience the mining history of Phalaborwa and ancestral living in the area. The Big hole open cast mine considered the widest man made hole in Africa. Phalaborwa is also home to the Marula tree, which seasonally provide a drink in the form of juice, beer and liqueur according to fermentation. The nut from the fruit is used as a snack and also a base product of cooking oil and skin products. A well-attended Marula festival is held annually in February (Limpopo Tourism Agency, 2016).

Maruleng Local Municipality boost some of Limpopo prime tourist attractions, including the Kruger National Park, Timbavati Private Reserve and Blyde River Canyon. In Maruleng a number of tourism related activities exist as well as various private lodges and guest houses. The existing airport plays a significant role in increasing tourist traffic and establishing the area as a gateway to the Kruger and surrounding area. This area is known as the wildlife haven with the high concentration of the Big Five and many other wildlife species. The Drakensberg Escarpment is pronounced in this area (Limpopo Tourism Agency, 2016).

Further down there is the Greater Tzaneen which include Magoebaskloof, Haenertsburg and Letsitele, home to the Makgoebaskloof and Georges Valley routes which boasts tea estates, waterfalls, the Ebenezer Dam, Bluegum and Pine tree plantations, restaurants and the only cheese factory in this area. This area also offers adventure tourism packages including horse riding, quad biking, and river rafting and canopy tours. Tzaneen is also the biggest producer of bananas, paw-paw, citrus, mango and macadamia nuts (South African Tourism, 2011).

Figure 2: Pictures of some of the main tourist attractions in Limpopo (from top left) Hoedspruit Endangered Species Centre, Kruger National Park, Magoebaskloof and Modjadji cad forest (Pictures courtesy of SA-venues.com).

The Mopani district cements its position as a tourism harbour in Limpopo with the Modjadji Cycad Forest. This is the largest concentration of a single cycad species in the world. It is home to some of the largest and oldest cycads in the world (Mopani District Municipality, 2014). The nutrition of tourists is balanced by the Mopani Worm which is known for its high nutrition qualities and is an essential element of the local cuisine. The Giyani are largest display of Shangaan and Tsonga culture in the form of food, clothes and music. The area also boasts a plethora of historical, cultural and ethnic attractions. The contrasts in climate, scenery and landscape within this region are very striking and dramatic.

9. IDENTIFIED TOURISM FACILITIES IN THE PROJECT AREA

Although ecotourism in the study area is mostly "nature-based tourism", most vacationers to these areas place a high value on the natural environment and want to contribute to the environment and the local populations in a positive ways. Furthermore, these tourists are socially consciousness

and largely have a responsible attitude to environmental issues. Below is the description of some of the major tourists' destination known to exist in the area proposed for development:

Hans Merensky Nature Game Reserve

The Hans Merensky Nature Reserve, also known as the Hans Merensky Wilderness is a protected area in Limpopo Province which was proclaimed a nature reserve in 1953. This approximately 5200 hectare reserve was named after the German South African Geologist, Prospector and Conservationist Hans Merensky. The reserve lies approximately 70km northeast of Tzaneen toward the Kruger National Park, an hour's drive from the Phalaborwa Gate and is located on the banks of the Great Letaba River, a tributary of the Olifants River, which offers great bird-watching opportunities. The terrain is mostly flat low-veld grasslands dotted with shrubby mopane and combretum trees, quite lush in the rainy season, but dying back in winter to provide excellent game viewing at waterholes. The terrain also provides an ideal habitat for hundreds of interesting bird species, including the White-breasted Cuckoo shrike, Brown-headed Parrot, Raptors and Wood Sandpipers.

Selati Game Reserve

The game reserve has 30500 hectares of privately owned Lowveld Bushveld situated north of the Olifaths River between Mica, Gravelotte and Palaborwa. It was formally constituted in Septermber 1993 when the seven founder members signed agreements committing their properties to the single management unit governed by a constitution and set of rules and regulations aimed at conserving and enhancing the biodiversity of the ecosystem in order to realise its full economic potential on a sustainable basis.

Ndzalama Wildlife Reserve

With animals including four of the Big Five (everything but buffalo is represented) and klipspringer antelopes roaming its 80-plus sq km, Ndzalama Wildlife Reserve is named after a locally revered rock formation, which couldn't be more phallic.

Lekkersmaak Game Reserve

Lekkersmaak is a farm and is located in Mopani District Municipality, Limpopo, South Africa. The estimate terrain elevation above sea level is 467 metres. It is a game reserve conserving different kinds of wildlife and is privately owned.

Leopard rock Cap

Leopard Rock Game Breeders are situated in the prime African bushveld in close proximity to the Kruger National Park with towering boulders and lush vegetation, Rock Fig trees anchored by tentacle like roots on top of huge Granite Rocks. Approximately 700 hectares of the farm has been

fenced off and divided into different camps for the breeding of scarce species. Wildlife such as Saddledback Impala (Saalrug Rooibok, Swartrug Rooibok, Saddleback Impala, Saddled Impala), Sable Antelope, Black Impala, Cape Buffalo, Nyala, Kudu Golden Wildebeest, and Livingstone Eland can be found there.

Jeune Elephant

It offers way more than the usual touch and feed elephant experience, It offers unique intimate hands-on educational elephant interactions, elephant-back safaris, swims on elephants as well as tailor-made events such as weddings, teambuilding, corporate functions, filming and starlight safaris.

Grietjie Private Nature Reserve

Grietjie Private Nature Reserve is 30km south of Phalaborwa, and encompasses some 2 800ha including 6km of impressive river frontage on the perennial Olifants River. The reserve encompasses some stunning landscapes with bergs and rocky outcrops to plains and riverine bush. The varied habitat supports a healthy diversity of wildlife and an impressive birding list of over 280 species sighted, including the rare Pels Fishing Owl. Big 5 species are encountered frequently on the reserve, but it is a special honour to be privy to the secret lives of the lesser known species.

Inyanga Safari Lodge

Inyanga Safari Lodge is a small Bush Lodge, located in the lovely unspoiled Bush of Greater Kruger Park, It is only 20 minutes' drive from Phalaborwa. Here you can explore the African Bush with wild animals in "The Back Yard". There are more than 300 species of Birds and over 40 different kinds of mammals in this Big-5 area.

10.IMPACT STATEMENT AND DESCRIPTION

The study area is diverse and consists of variety of activities which will have an influence on the visual impact assessment, and in turn influence the eco-tourism of the area. Furthermore these activities coupled by the proposed transmission line will contribute towards a negative impact on of the area. Amongst others activities in the areas are farming, infrastructure, businesses, mining and residential sites. For the purpose of this study, it is possible to look at the visual resource associated with the environment and study area and it can be rated as follows:

- High – the majority of the study area is devoid of infrastructure elements;
- Moderate – area shows some development, erosion, alterations or degradation;
- Low – the area is severely modified or altered, erosion is prevailing and there is little scope for positive enhancement of the area.

Furthermore, the rating of impact can be used in the following exposure ratings, see Table 2.

Table 2: Visual exposure ratings

Description	High	Medium	Low
Tourists	0-1.5km	1.5-3km	3-10km
Farms	0-1.5km	1.5-3km	3-10km
Motorists	0-1.5km	1.5-3km	3-10km

The following are indicators that could suggest the need for ecotourism input based on the nature of the receiving environment and the nature of the project and these includes:

- Areas with protection status, such as national parks or nature reserves;
- Areas with proclaimed heritage sites or scenic routes;
- Areas with sites of cultural or religious significance;
- Areas with intact wilderness qualities, or pristine ecosystems;
- Areas with intact or outstanding rural or townscape qualities;
- Areas with a recognised special character or sense of place;
- Areas lying outside a defined urban edge line;
- Areas of important tourism or recreation value;
- Areas with important vistas or scenic corridors;
- Areas with visually prominent ridgelines or skylines.

The proposed area currently includes mining, settlements, wood harvesting, cultivation, cattle farming, game farming, ecotourism and other associated infrastructure. Tourism is an important activity in sectors of the total power line corridor and include travelling of visitors to local residents to a number of tourism destinations in the area. Some of the roads are tarred, but the majority of roads are not. A number of 132kV powerlines are present in the area and there are telephone lines present and recently the cell-phone communications masts are dotting the landscape. Two broader alternatives (1 and 2) were investigated for this proposal, and during discussions with all role-players, two deviations for Alternative 1 where added in order to address certain concerns raised.

Alternative 1

The first sector of the power lines from the existing Spencer substation is in an area of severe natural modification with the visual resource in a low state. The area is severely overgrazed in areas with the natural vegetation in a poor condition. The northern sector of the proposed route (Alternative 1 and Deviation 1a, and a short sector of Alternative 2) follows a corridor to the

southeast from the Spencer substation to the Foskor area crossing of the Groot Letaba River and include the deviation (Deviation 1a) to the east. For it to be linked to Alternative 1, the first section of Alternative 2 is included. To the north of the Spencer MS the settlements of Mohlabaneng is present, while the R529 (Phalaborwa-Giyani Road) is in the south of the study area. The undulating landscape can screen the pylons. Existing impacts include development (residential, fences and existing power lines), small businesses and agriculture (grazing and cultivation). The visual resource rating will be low due to the fact that the area is highly modified with extensive settlement development, cultivation and grazing, other infrastructure such as roads and with medium to high erosion

The sector for Alternative 1 (following the R71) is in areas of medium to high scenic value (game and cattle farms) but high impacts occur. These modifications to the landscape include fences, some limited cultivation, road infrastructure, farm houses, stores and related buildings, telephone line and cellular telephone infrastructure. The northern section of the corridor crosses the Groot Letaba River and the land use both north and south of the river is intensive fruit farming and cash crop production. The landscape is more flat compared to the areas to the north. Current developments associated with the intensive farming includes roads, power lines, high boundary fences, houses and other farming infrastructure and no extensive settlements are present. South of the river, the Hans Merensky Nature Reserve is near the corridor, the visual impact rating will be medium to high as the current activities have some visual impacts.

Alternative 2

This proposed corridor is made up of different subsections differing in sections from Alternative 1. In this discussion, only the longer section to the south will be discussed, as the small section east of the Spencer MTS was covered with the first sector of Alternative 1. The sector south of the Groot Letaba River has a high impact. Apart from the mining infrastructure and mine dump having a negative impact on the visual character, the modified vegetation contributes to the high visual impact rating. South of the river, a narrow band of intensive cultivation (orchards and cash crops) are the main activities. Here the impacts are similar to that described for Alternative 1. Further south to the crossing with the R71, the majority of land use is agricultural in nature and dominated by cattle and game farming with ecotourism.

When evaluating the visual impacts, it will be clear that the visual resource rating will be low to moderate near the crossing of the Groot Letaba River, as the current impact lower the visual cues

include roads, fences, power lines, telephone lines and some building structures. South of the river the area is used for cattle and game farming where the visual impact rating will be medium to high as the current activities have some visual impacts. This include game fences, cattle management facilities, cellular telephone towers, roads and houses. When looking at the visual exposure rating for this sector associated with the farming area it can be rated as medium to high [(0 – 3km sighting) houses, lodges and the land owners]. The developments near the powerline corridor can be described as low to medium density developments with little additional visual impacts expected when compared to the existing developments and visual cues.

Current developments on the farms (roads, fences, buildings and power line) will have a negative impact, but in close proximity (0 – 3 km), the new powerline will have a higher impact. Where the corridor swings east (south of the R40), the main land use is farming (cattle and game farms) with ecotourism on some of the properties. Just before the point where Alternative 2 joins Alternative 1, the power line will have a low visual impact on the activities at the Antares facilities. This will differ as some activities closer to the corridor will result in higher visibility.

11. ASSESSMENT IMPACTS OF THE PROJECT ON TOURISM

The following table is used to determine rating system on the receiving environment.

Table 3: Rating and evaluating criteria of impact assessment

NATURE		
Including a brief description of the impact of the parameter being assessed in the context of the project.		
EXTENT		
This is defined as the area over which the impact will be expressed.		
1	Site	The impact will only affect site.
2	Local/district	Will affect the local area or district.
3	Province/region	Will affect the entire province or region.
4	International and National	Will affect the entire country.
PROBABILITY		
This describes the chance of occurrence of an impact		

1	Unlikely	The chance of the impact occurring is extremely low (Less than 25% chance of occurrence).
2	Possible	The impact may occur (Between a 25% to 50% chance of occurrence).
3	Probable	The impact will likely occur (Between 50% to 75% chance of occurrence).
4	Definite	Impact will certainly occur (Greater than 75% chance of occurrence).
REVERSIBILITY		
This describes the degree to which an impact on a parameter can be successfully reversed upon completion of the proposed activity.		
1	Completely reversible	Impact is reversible with implementation of minor mitigation measures.
2	Partly reversible	Impact is partly reversible but more intense mitigation measures are required.
3	Barely reversible	Impact is unlikely to be reversed even with intense mitigation measures.
4	Irreversible	Impact is irreversible and mitigation measures exist.
IRREPLACEABLE LOSS OF RESOURCES		
This describes the degree to which the resources will be irreplaceably lost as a result of proposed activity		
1	No loss of resource	The impact will not result in the loss of any resources.
2	Marginal loss of resource	The impact will result in marginal loss of resources.
3	Significant loss of resource	The impact will result insignificant loss of resources.
4	Complete loss of resource	The impact is result in a complete loss of all resources.

DURATION		
Duration indicates the lifetime of a result of the proposed activity.		
1	Short term	The impact and its effects will either disappear with mitigation or will be mitigated through natural process in span shorter than the construction phase (0-1 years)
2	Medium term	The impact and its effects will continue or last for some time after the construction phase but will be mitigated by direct human action or by natural processes thereafter (2-10 years).
3	Long term	The impact and its effects will continue or last for entire operational life of the development, but will be mitigated by direct human action or by natural processes thereafter (10-50 years).
4	Permanent	The only class of the impact that will non-transitory. Mitigation either by man or natural process will not occur in such a way or such a time span that the impact can be considered transient (Indefinite).
CUMULATIVE EFFECT		
A cumulative effect/impact is an effect, which in itself may not be significant but may become significant if added to other existing or potential impacts emanating from similar or diverse activities as a result of the project activity in question.		
1	Negligible Cumulative Impact	The impact would result in negligible to no cumulative effects.
2	Low Cumulative Impact	The impact would result in insignificant cumulative effects
3	Medium Cumulative Impact	The impact would result in minor cumulative effects

4	High Cumulative Impact	The impact would result in significant cumulative effects.
MAGNITUDE		
Describes the severity of an impact.		
1	Low	Impact affects the quality, use and integrity of the system/component in a way that is barely perceptible.
2	Medium	Impact alters the quality, use and integrity of the system/component but system/ component still continues to function in a moderately modified way and maintains general integrity (some impact on integrity).
3	High	Impact affects the continued viability of the system/component and the quality, use, integrity and functionality of the system or component is severely impaired and may temporarily cease.
4	Very High	Impact affects the continued viability of the system/component and the quality, use, integrity and functionality of the system or component permanently ceases and is irreversibly impaired (system collapsed).Rehabilitation and remediation often impossible
SIGNIFICANCE		
It provides an indication of the importance of the impact in terms of both tangible and intangible characteristics. (S) is formulated by adding the sum of numbers assigned to Extent (E), Duration (D), and Intensity (I) and multiplying the sum by the Probability. $S= (E+D+M) P$		
<30	Low	Mitigation of impacts is easily achieved where this impact would not have a

		direct influence on the decision to develop in the area.
30-60	Medium	Mitigation of impact is both feasible and fairly easy. The impact could influence the decision to develop in the area unless it is effectively mitigated.
>60	High	Significant impacts where there is difficult. The impact must have an influence on the decision process to develop in the area.

The four major impacts likely to result from the transmission line include Visual impacts, land use change impacts, change or alteration of hunting calendars and corporate demand. These are elaborated more below.

11.1 Visual and Cultural Impacts of the project on Tourism

The proposed power lines will run through some scenically beautiful areas where leisure tourism is practiced. These areas are more likely to be visually affected by power lines and this could affect negatively on tourism as some tourists visit these areas just to enjoy the beautiful views. Most of the game reserves are largely natural, this plays an important role in attracting tourists to these areas. The same can be said about scenic rural areas, a new tourism trend is slowly developing whereby visitors visit the rural areas to enjoy the visual natural character of the area. Visitors to villages such as Maruleng and Phalaborwa, may perceive power lines as a visual intrusion that could degrade the areas' natural character and scenic beauty. Furthermore, this visual intrusion could potentially compromise the practising of tourism activities in these areas.

Table 4: Rating of visual impacts

IMPACT TABLE VISUAL IMPACTS ON TOURISM	
OBJECTIVE: **The overall goal is to identify and mitigate Impacts within the proposed development area.**	
Project component/s	**Construction Phase**
Potential Impact	Disturbances of the scenic natural environment and animal eye sight
Project component/s	**The Operational Phase**

Potential Impact	Permanent disturbance of the scenic natural environment
Activity/risk source	Exclusion of the mitigation measures aimed at mitigating impacts to tourism
Extent	The impact will only be expected along the power line route and neighbouring areas.
Duration	The impact and its effects will be permanent
Magnitude	The impact will alter the scenic natural environment, however it can still be used/ function in a moderately modified way and maintains general integrity
Probability	The likely hood of the impact occurring is, between a 50% to 75% chance of occurrence given the fact that the power lines will traverse via a number of tourist attractions
Reversibility	The visual impact on tourism facilities is partly reversible but more intense mitigation measures are required this can be done through vegetation screening or avoiding the areas of the tourism facilities completely
Irreplaceable loss of resources	The visual impact on tourism facilities will result in marginal loss of resources
Cumulative effect	The impact would result in cumulative effects should other lines be introduced in the area.

11.2 Land Use Changes Impacts on Tourism

The power lines routes and the servitude cuts across natural undisturbed wildlife reserves where the scenic beauty plays tremendous role in attracting leisure tourists. The mere fact that these areas are undisturbed to a large extent, introducing power lines would be viewed as a change in land use or a change in natural character. This would therefore spoil the scenic value of these areas and potentially affect tourism activities. Conversely the proposed power lines are not perceived as a change in land use in already visually degraded areas like Gravellote, Phalaborwa and other parts of Mohlabaneng due to the presence of other linear structures such as roads, other power lines and buildings. Eskom should ensure that the towers are not established in parts of the reserves that have a special use by farm owners, as this may affect land use.

Table 5: Rating of Land-use Changes

IMPACT LAND USE CHANGES	
OBJECTIVE: **The overall goal is to identify and mitigate Impacts within the proposed development area.**	
Project component/s	**Construction Phase**
Potential Impact	Alteration of the natural character and possible changes of use to some parts of the land where the towers will be laid.
Project component/s	**The Operational Phase**
Potential Impact	Permanent changes to land use.
Activity/risk source	Exclusion of the mitigation measures aimed at mitigating impacts to tourism.
Extent	The impact will only be expected along the power line route and on the Spenser substation extension site.
Duration	The impact and its effects will be permanent.
Magnitude	The impact will alter the land-use, however it can still be used/ function in a moderately modified way and maintains general integrity
Probability	There is a high chance of the Impact occurrence given the fact that the power lines will traverse via a number of areas that are currently in use for other purposes.
Reversibility	The impact cannot be reversed but can be mitigated by avoiding placing the towers directly on the portions of land that are being used for other special purposes.
Irreplaceable loss of resources	The impact of land use changes on tourism facilities will result in marginal - minimal loss of resources considering the fact that the towers will not take much space.
Cumulative effect	The impact would result cumulative effects should additional electrical infrastructure be introduced.

11.3 Corporate demand

Assuming that the development will be given the green light to proceed by the relevant authorities, the corporate demand for tourism facilities is likely to increase in the area as a result of the proposed development. Various professional persons such as technical surveyors, engineers,

environmental specialists, access negotiators, rehabilitation teams as well as the management/ maintenance teams are likely to spend nights at various accommodation facilities in the study area. This is expected during the pre-construction, construction, operation and decommissioning phases of the project. Furthermore the above teams are expected to visit various restaurants (which is a component of leisure tourism) while they are in the area. In general, the impact of the proposed transmission lines on corporate demand for tourism facilities is anticipated to be huge as the power lines will insure many other development projects in future that will increase the need for tourism. It is however very debatable whether this positive impact on tourism demand in the area would offset possible losses to the existing eco-tourism or possible development opportunities in this regard.

Table 6: Rating of impact corporate demand

IMPACT CORPORATE DEMAND	
OBJECTIVE: **The overall goal is to identify and mitigate Impacts within the proposed development area footprint.**	
Project component/s	**Construction Phase**
Potential Impact	Tourism boom due to the need for tourism by construction teams
Project component/s	**The Operational Phase**
Potential Impact	Possible permanent compromise of the eco-tourism due to industrialisation, will also lead to access roads being created in various parts of the development footprint.
Activity/risk source	Exclusion of the mitigation measures aimed at mitigating impacts to tourism.
Extent	The impact will be extended to the areas around the power line routes the, towns of Tzaneen, Palaborwa, Giyani and villages like Mohlabaneng.
Duration	The impact and its effects will be have a long term.
Magnitude	The impact will slightly alter the number of tourists expected
Probability	Low
Reversibility	Irreversible impacts

Irreplaceable loss of resources	The project will have an irreplaceable impact on eco tourism due to industrialisation
Cumulative effect	The impact would result in immeasurable to cumulative effects

11.4 Change or alteration of hunting calendars

During the Public participation meetings held, some villagers from the Mashishimale CPA raised concerns about the disruption of the hunting seasons due to the fact that seasonal professional hunters will not be able to hunt during the construction phase. They raised concern over the issues of poaching and also the safety of the developers against dangerous wild animals during the construction phase. This would mean that their usual hunting calendar of May to September will have to be altered in the event that the developer is in their territory during this period. However, expectations of economic benefits from tourism may be positively impacted with the coming of a better and improved electricity supply after the construction phase.

The construction phase of the project may also disturb wildlife by altering their eating habits and feeding patterns. Feeding patterns are altered directly by the construction of utility towers on graving/feeding lands, and indirectly by littering caused by construction workers on site, which encourages wildlife to scrounge for food (Mathieson & Wall, 1982). Wildlife habitat is also altered by trampling and by the use of off-road vehicles during construction phase.

12. RECOMMENDATIONS AND MITIGATIONS

Mitigation measures are given in relation to the impacts of the proposed project on the tourism of the area. The noted Visual and Land use impacts (of the power lines and substation extension) on the tourism of the affected area indicate a medium to high impacts. The proposed project will alter the face of the study area, as well as bring industrialisation. This will disturb the natural environment and change the status core. Below are the main recommendations:

- Eskom should try and avoid placing towers on areas of scenic natural beauty;
- The flood-line needs to be determined, and tower structures should be avoided below the 1:50 years flood line;
- Eskom should ensure that construction does not contradict with the hunting season. There should also be communication between Eskom and game reserves owners in relation to working hours during construction phase so as to avoid disturbing animal feeding times, and curb poaching concerns raised during public participation meetings;

- Developments must be sensitive to the landscape and to the other users by limiting negative impact to the landscape's visual qualities and sense of being undisturbed. This may be achieved by placing the towers on the backdrop of the reserve, such must be discussed with the landowners.

In addition, the following mitigation measures are recommended:

- Eskom must screen construction activity to reduce the impact on tourism, and utilise existing screening features such as dense vegetation stands or topographical features to place the construction camps and laydown yards out of the view of sensitivity visual receptors;
- Construction sites must be kept tidy and litter free to reduce the potential visual impact. Rehabilitation of construction camps and laydown yards must be addressed adequately in the EMPr. An attempt should be made to locate construction camps in areas that are already disturbed or where it is not necessary to remove established vegetation, for example, naturally bare areas. Construction hours are to be strictly adhered to when in close proximity to ecotourism products. Avoiding construction over weekends will reduce the severity of dust, noise and visual impacts on tourists.
- Where new access roads are required, disturbance should be minimized by keeping roads narrow and using two-track dirt roads wherever possible. Road verges must be avoided at all times.
- It must also be noted that, smaller towers or those with a more compact design (e.g. cross-rope suspension towers) should be used. By keeping the proposed lines as straight as possible, fewer strain towers will be required. This is preferable as strain towers are visually obtrusive compared to the suspension towers used when alignments are straight. The galvanising of the pylon should be allowed to weather a matt grey finish rather than be painted silver, as is often the case. This allows the structures to blend in with the existing environmental colours more readily than the silver that is highly reflective especially early morning and late afternoon. Should it be necessary to paint, it is recommended that a neutral matt finish be used;
- Avoid placing the transmission line in close view of restaurants and accommodation facilities where the visual beauty of the area is the main attraction;
- Avoid placing the transmission line across properties used for eco-tourism and leisure. Should avoidance not be possible, the alignment should avoid the main activity areas and preferably be placed on the border of the properties;
- Avoid placing the transmission line across nature reserves at all costs. Thus, placement of a new transmission line away from numerous tourism establishments, could limit the negative impacts on the tourism industry rather than placing the new proposed transmission line in

close proximity to these tourism establishments. This could be considered as an option in the central section of the study area.

13.CONCLUSIONS

It should be noted that there is a high positive impact after construction phase since the project will be of great use to the industrial sector, and will also contribute to the tourism boom of the province. However, it should be noted that industrialisation should not be at the expense of current state and success of tourism. As such, where possible, this proposal should be confined to the already degraded/developed parts of the area to limit altering precinct areas.

From a tourism point of view, the proposed construction of a 400kV transmission power line from Foskor Substation (Phalaborwa) to Spencer Substation (near Giyani) and Spencer MTS Upgrading, Limpopo Province is expected to have a medium to high negative significance in the vicinity of sensitive receptors and a low negative significance in the vicinity of less sensitive receptors.

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