

# SOCIO-ECONOMIC, TOURISM AND LAND USE POTENTIAL IMPACT REPORT

PROPOSED ESKOM KIMBERLEY STRENGTHENING PHASE 4:  
BOUNDARY – ULCO SUBSTATIONS 400kV POWERLINE  
& NEW ULCO TRANSMISSION SUBSTATION

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### List of abbreviations and acronyms

AFIS	Advanced Fire Information System
ASL	Above mean sea level
BeSS	Beta Substation
BoSS	Boundary Substation
CPA	Communal Property Association
CLN	Customer Load Network
DEAT	Department of Environmental Affairs and Tourism
DX	Eskom Distribution Power Lines
EIA	Environmental Impact Assessment
EMF	Electromagnetic Field
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
Eskom	Electricity Supply Commission
FSP	Free State Province
FSS	Ferrum Substation
ha	hectare
HV	High Voltage
I & AP's	Interested and Affected Parties
IDP	Integrated Development Plan
km	Kilometre
kV	kilo volts = 1 000V/volts
LDM	Lejweleputswa District Municipality
LV	Low Voltage
m	Metre
mm	Millimetres
MV	Medium Voltage
NASA	National Aeronautics and Space Administration
NCP	Northern Cape Province
NERA	National Energy Regulator Act (Act 40 of 2004)
NERSA	National Energy Regulator of South Africa
OHS	Occupational Health and Safety
p.	Page
PPE	Personal Protective Equipment
QRA	Quantitative Risk Assessment
SANRAL	South African National Roads Agency
SDF	Spatial Development Framework
SIA	Social Impact Assessment
TLM	Tokolologo Local Municipality
TX	Eskom Transmission Power Lines
USS	Ulco Substation

## EXECUTIVE SUMMARY

South Africa is experiencing a serious backlog in the upgrading and maintenance of its electricity network.

The proposed Kimberley Strengthening Project Phase 4 from Beta substation to Ferrum substation is one of the proposed solutions that Eskom Transmission has to assist in the elimination of this problem in the Northern Cape Province. The project will improve the electricity network in the area which will not only provide a better living environment for the local community but also offer investment opportunities which may indirectly increase job opportunities and economic growth.

Three alternative routes were proposed by Eskom from Boundary to Ulco Substation. Landscape Dynamics was appointed to consider the best alternative with regards to the environment. The relevant legal procedure is being followed to conduct the project scoping and environmental impact assessment which includes the involvement of public stakeholders.

## 1. INTRODUCTION

The Strategic Plan (2011-2015) of the Department of Energy's Mandate avows to “*ensure secure and sustainable provision of energy for socio-economic development*”.

Eskom is a South African public utility corporation, responsible for generation – of 95% of electricity used in South Africa - transmission and distribution of electricity. Electricity is primarily generated in coal-fired power stations across the country. The electricity is transported from these stations along high voltage Transmission power lines (usually 400kV, but also 220kV, 275kV, 533kV and 765kV lines) to Transmission substations or load centers. These substations then feed local Distribution substations with power lines from 132kV and smaller voltage, from where electricity is distributed to communities and other users.

The Eskom network in the province of Northern Cape requires expansion to meet the growing electricity demand, as well as to improve service quality and dependability. Eskom Transmission proposed to build a new 400kV Ulco substation (USS) which will include all relevant switchgear, 4 x 250MVA 400/132kV transformers as well as the installation and equipping of 4 x 400kV feeder bays and provision for 8 x 132kV feeder bays. A double circuit 400kV power line is proposed from the new BoSS Transmission Substation to the new USS the length is expected to be approximately 155km.

amp Property Management and Land Acquisition was appointed by Landscape Dynamics as an independent consultant to assist with the task of the Socio-Economic, Tourism And Land Use Potential Impact Report as part of the proposed Eskom Transmission - Kimberley Strengthening Phase 4 Project.

The proposed power line may have unfavorable effects on the local community and their property. Therefore it was important to undertake the assessment process to evaluate the possible impacts that may arise in the vicinity of the project.

SIA's are mainly conducted with two methods namely the Technocratic and Participatory approach. (Barnour 2007:10) It was decided to use a combination of these methods. The technocratic approach consists of the interpretation of secondary data, while the participatory approach considers the knowledge and experiences of individuals as part of the community that are most likely to be affected by the proposed project.

In this paper the possible socio-economic and land use impacts of the proposed Eskom Project is considered as experienced by the relevant impact assessor. The aim is to investigate and describe the potentially affected social, economical and utilization of property functions in the environment and the impact of the proposed project thereon.

## 2. PROJECT DESCRIPTION

Eskom proposes to construct the new USS 400kV MTS Substation, which will include 4 x 250MVA 400/132kV transformers as well as the installation and equipping of 4 x400kV feeder bays and make provision for 8 x 132kV feeder bays. A double circuit 400kV power line, of about 155km, is proposed from the new BoSS to the new USS. The project forms part of the Kimberley Strengthening Project’s fourth phase which is planned from BeSS to FSS to assist with the growing demand for electricity in the Northern Cape.

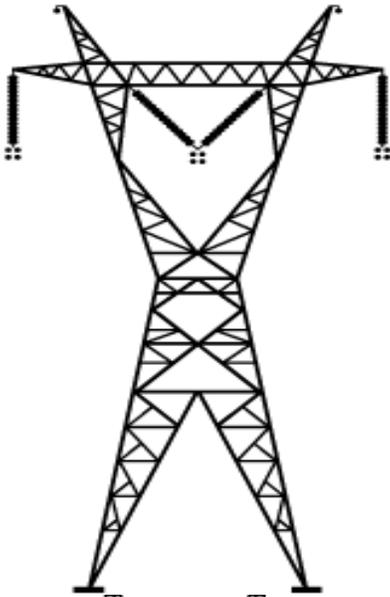
CLN	Forecast (MW)			Average Annual % load increase
	2013	2018	2022	
<b>Namaqualand</b>	136.3	263	266	7.5%
<b>West Coast</b>	12	13	13	1%
<b>Kimberley</b>	406	981	1 247	16.3%
<b>Karoo</b>	297	309	325	1.3%

*Table 1 – Northern Cape Province CLN load forecast and percentage load increases (Eskom 2013)*

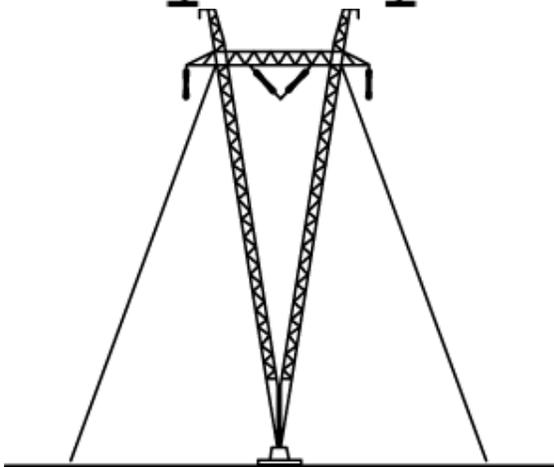
Three alternative corridors, with a width of 2km each, are being considered for the 400kV double circuit power line. Construction is expected to last eight – twelve months, which entails firstly the civil works to plant the structures followed by the stringing of the conductors. Therefore construction will not be on one property for the total duration. The whole Kimberley Strengthening phase four project is expected to run over the next eight years, where construction will take place where the demand requires.

The servitude will be 55m wide. The design of the 400kV power line pylons will only be finalised after the final route selection has taken place. Eskom mostly use Self Supporting, Guyed-V or Cross Rope Suspension pylons. Figure 1 below is only an indication of the

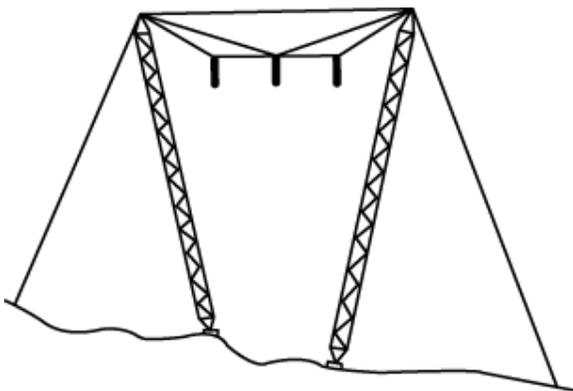
appearance of these pylons and are not to a scale. The average heights of these structures are between 27-40 meters, with an average span of 450m – 480m



*Figure 1 A Self Supporting Pylon*



*Figure 1 B Guyed-V Pylon*



*Figure 1 C Cross-Rope  
Suspension Pylon*

## 3. LEGISLATION

In South Africa there are several major legislation sources that refer to socio-economic impacts in terms of rights, principles and objectives.

### **3.1 THE CONSTITUTION OF SOUTH AFRICA (Act 108 of 1996)**

Chapter 2, The Bill of Rights refers to people's rights and the democratic values of human dignity, equality and freedom of religion, belief and opinion, healthy environment, right to own property, primary needs, own language and culture as well as access to information.

### **3.2 NATIONAL ENVIRONMENTAL MANAGEMENT ACT (Act 107 of 1998)**

NEMA principles that have an effect on the social issues – Environmental management must be integrated and address people's needs as the priority for economical and environmental sustainable development. Effective and equitable stakeholder participation must be promoted and all people must have the opportunity to influence the project scope, with disadvantages and benefits.

### **3.3 NATIONAL WATER ACT (Act 36 of 1998)**

This act provides guiding for social and economic development principles for sustainable water resources in South Africa which includes meeting basic needs for equitable access to water resources for present and future use.

### **3.4 PROMOTION OF ADMINISTRATIVE JUSTICE ACT (Act 3 of 2000)**

This act applies to the decision making process in all organs of state. Decisions that may impact individuals or communities must grant the opportunity to comment in order to make the ultimate decision lawful. This decision must also be explainable and justifiable in the case of social issues.

### **3.5 DEVELOPMENT FACILITATION ACT (Act 67 of 1995)**

Section 3 assesses proposed developments in terms of national planning requirements, which include the promotion of the integration of social, economic, institutional and physical aspects of development.

### **3.6 NATIONAL ENERGY REGULATOR ACT (Act 40 of 2004)**

NERSA was established as a juristic person in terms of the NERA, section 3. The main objective is to regulate electricity, gas and petroleum. According to section 10 of NERA all decisions made by NERSA must be in writing, consistent with related legislation, in public interest and promote fair opportunities for affected parties to submit their views and facts.

## 4. METHODOLOGY

Three alternative power line corridors were investigated. An aerial investigation was done to investigate the land use potential as well as to establish sensitive areas which will be less acceptable alternatives. A property list was compiled from the relevant properties Windeed information. This includes the property description, registered owner and contact details. Not all contact details could be traced and a field visit was done to obtain additional information. In some instances the neighbours were requested for contact details. They were generally very helpful. However a few owners could not be traced at all.

Affected land owners were contacted by telephone to obtain email, fax or postal address information. Documentation is sent to all land owners with contact information.

Invitations were sent out for the Public Participation dates and venues. For additional information regarding the interested and affected parties (I & AP's) see Appendix A.

Through more involvement of I & AP's in the public participation process, land use can be evaluated with greater accuracy which establish conditions for better resolution. Meaningful information is provided by the stakeholders who promotes sustainable decision making. Another important facet of public participation is the communication to stakeholders on how their input affects the project outcome.

## 5. BASELINE DESCRIPTION: ENVIRONMENT

### 5.1 LOCATION AND DEMOGRAPHICS

The proposed project is planned in the Northern Cape (NCP) and Free State (FSP) and will involve two district municipalities: Frances Baard District Municipality (FBDM) in the NCP and Lejweleputswa District Municipality (FBDM) in FSP area. The local municipalities in FBDM and LDM are Sol Plaatjie Local Municipality, Dikgatlong Local Municipality and Tokologo Local Municipality.

BoSS is located adjacent to the R64 on the eastern side of Kimberley (28°43'25"S, 24°52'49"E). The proposed power line is planned from BoSS to USS which is located west of the Afrisan Ulco Mine (28°19'55"S, 24°11'59"E)

The region has a variety of land uses varying from grazing for livestock and game farms to irrigated lands and mining. Agricultural farms which greatly consist out of cattle and sheep husbandry. There are several EIA's in process for Solar Energy Facilities.

### 5.2 LEJWELEPUTSWA DISTRICT MUNICIPALITY

Lejweleputswa District Municipality's (2006) mission states that it; "embraces a service delivery perspective through sound financial management, harnessing of a customer-centered culture, internal processes structured towards professionalism and the creation of a learning, growth and development environment."

### 5.3 TOKOLOGO LOCAL MUNICIPALITY

Part of TLM's vision & mission statement states that the municipality aims to progressively improve the lives of residents by creating conditions for economic growth and sustainability by improving access to basic services. (Tokologo Local Municipality 2012)

BOUNDARY – ULCO SUBSTATIONS 400kV POWERLINE  
& NEW ULCO 400kV SUBSTATION



Figure 2 –Lejweleputswa District Municipality and associated local municipalities (The Local Government Handbook n.d.)

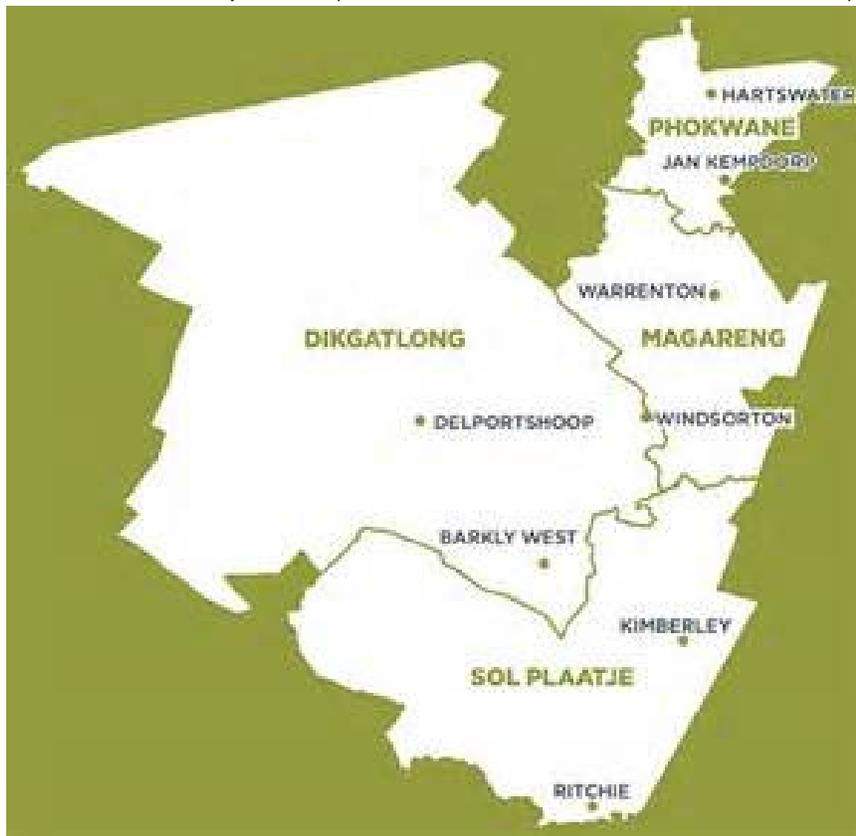


Figure 3 – Frances Baard District Municipality and associated local municipalities (The Local Government Handbook n.d.)

## 5.4 SOL PLAATJE LOCAL MUNICIPALITY (SPM)

The mission of SPM reads as follows:

- Focusing on institutional transformation and management systems
- Ensuring access to quality, reliable and affordable services
- Strengthening relations with all stakeholders
- Maximising income through responsible financial discipline
- Providing a challenging and rewarding working environment for all its employees. (SPM, n.d.)

## 5.5 CLIMATE

According to SA Explorer, the area has an average rainfall of between 256mm and 283mm per year. The lowest rainfall is in July and the highest in March. Midday temperatures vary from 18°C to 33°C. The Köppen-Geiger climate classification for the area is “bush” or hot semi-arid climate. (World Maps of the Köppen-Geiger Climate Classification, n.d.)

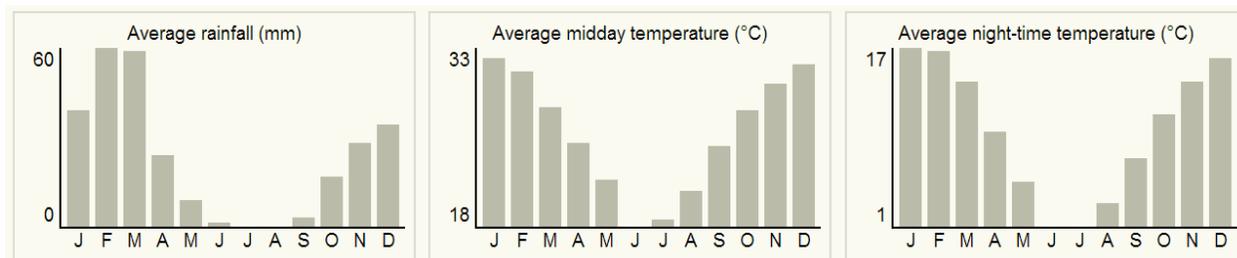


Figure 4 – The annual average rainfall, midday temperatures and night-time temperatures for Barkley West (SA Explorer n.d.)

## 5.6 PROJECT GEOGRAPHICS

The proposed 400kV power line will not directly affect the residential areas, but will influence rural farms in the area. The power line may cross inhabited farm land, tourist and mining areas. Denser residences are, however, found near the BoSS, close to the Vaal River and Delpoortshoop. The alternative routes cross over combinations of agricultural, tourist, game farms and mining properties.

BOUNDARY – ULCO SUBSTATIONS 400kV POWERLINE  
& NEW ULCO 400kV SUBSTATION



*Figure 5 – Boundary Eskom Distribution Substation*

Alternative 1: This is the most northern alternative and is mostly parallel to existing power lines. It passes through multiple game farms including the De Beers Dronfield Reserve, where it runs parallel to the Boundary – Olien 1 & 2 275kV power lines, it then crosses over the N12 on the northern side of Kimberley. It then runs parallel to the Kimberley – Holsdam 132kV and Kimberley Weir 132kV power lines and passes on the southern side of Droogfontein Solar Power (see Figure 5 below) and over several properties owned by communal property associations, followed by crossing the Vaal River. The route passes on the North of Barkley West and over the R374. The line keeps following a West and North-West route, crossing over game farms including Mattanu Private Game Reserve. It then runs parallel to the Kudu - Gong-Gong 132kV until it passes on the northern side of Delportshoop and Ulco and heads South towards where the new USS is proposed in the vicinity of the current USS. The length of this alternative is approximately 94km.



*Figure 6 – Droogfontein Solar Power north of Kimberley*

Alternative 2: The proposed corridor route follows the same route as in Alternative 1 until crossing the N12. It then continues west parallel to Boundary – Olien 1 & 2 275kV power lines over communal properties and bends in a North-West direction crossing over the state-owned property that was previously the Vaalbos National Park. After crossing over the Vaal River, the route then turns north and runs parallel to the Ulco – Herbert 132kV and the Douglas – KDS – Olien Tee 275kV power lines, to the area of the proposed USS. Most of the proposed alternative is parallel to existing power lines. The length is approximately 98km.

Alternative 3: The proposed corridor follows Alternative 2. Instead of crossing over the previous Vaalbos National Park, it crosses over Rooipoort Game Reserve and joins the same corridor after crossing the Vaal River. The length is approximately 102km.

For more detail on the affected farm portions please refer to Appendix A of this report.

## 6. SOCIAL ENVIRONMENTAL

### 6.1 SOCIAL CHANGE PROCESSES

The purpose of this section is to describe the social processes that the proposed BoSS - USS 400kV power line and new USS will entail. It is important to understand that social and economic change processes can evolve to relevant impacts. These processes originate during the life cycle of the power line which can be classified as follows:

- prior construction phase
- construction phase
- operational phase
- decommission phase

The following processes are predicted in the different phases of the project and will be discussed.

#### 6.1.1 DEMOGRAPHIC PROCESSES

In-migration: In small communities the movement of people looking for new opportunities is more visible. This may happen during the construction phase, where people of other areas will be looking for jobs. However job opportunities during the construction phase will be very limited since most contractors do not use many unskilled laborers. In the operational phase the greater electricity capacity may indirectly attract development of industries which may offer new work opportunities.

#### 6.1.2 ECONOMIC PROCESSES

Macroeconomic factors as well as the way that people make a living in the area will have an effect on the economic processes. There may be a possibility for a small amount of temporary jobs for unskilled workers during the construction phase, but the operational phase will be performed by Eskom employees.

### **6.1.3 GEOGRAPHIC PROCESSES**

These processes affect the land-use patterns of the community.

Most of the land is grazing for game and livestock, but there are areas with irrigated lands and pivots. There will be a time period during construction when the farms will be encroached upon, should there be structures on the properties. During the design phase, pylon placing will be done in a matter that has minimum encroachment on the property and is most economically sustainable.

In the case of game farms the power line will not only impact the farms in terms of esthetics but may also be a danger and inconvenience with regards to helicopters, which play a significant role in game farming in terms of game counting, capture and darting.

### **6.1.4 INSTITUTIONAL AND LEGAL PROCESSES**

These processes affect the efficiency of organisations, which include government and non-government agencies, as well as the commercial sector that is responsible for the supply of the services that the people depend on. The power line will not have a great affect on these processes with regards to normal livestock and agricultural farming. The negative esthetic value associated with power lines is found to be a major concern for game farmers, since they are often involved with international investors who may be discouraged from the area.

### **6.1.5 EMANCIPATORY AND EMPOWERMENT PROCESSES**

Emancipatory and empowerment processes lead to the ability of the local community to participate in the decisions that will have an effect on their lives.

The proposed power line will not have a direct benefit for the local people, since it will be between two substations, the influence is therefore of an indirect nature since the substations will feed the local electricity network with a better quality supply. Therefore it will be applicable in the operational phase. As discussed above it will provide the possibility for economic growth in the area.

### **6.1.6 SOCIO-CULTURAL PROCESSES**

The aspects in the culture and the way people live together are applicable in this section. During construction there may be an influx of people from other areas mainly for labour purposes.

## **6.2 SOCIAL ASSESSMENT MEASURES**

### **6.2.1 MAIN AFFECTED & INTERESTED PARTIES**

See appendix A for more for detail

### **6.2.2 SOCIAL IMPACT ASSESSMENT CATEGORIES**

#### **Health and Social Wellbeing**

- Future aspirations – Economic growth regarding farming, tourism and mining activities.
- Feeling in relation to project – great sense of fear and resistance was experienced initially, but with consultation and explanation it changed positive regarding many private land owners. It was established to rather work together in planning an environmentally acceptable route than to force a route on the land owners. Special consideration needs to be taken into account where crossing over game farms.

## Quality of living environment

- Quality of physical environment. There will be exposure to minimum dust and noise of vehicles in the construction phase. Construction workers will be fitted with PPE and be in the possession of identification when in the construction area.
- Aesthetic Quality. The visual impact of the structures was addressed. See the relevant report for more information.
- Adequacy of physical infrastructure. The route next to the existing roads as well as sections next to existing power lines will be preferred to minimize additional impacts. Gates should be closed at all times.
- Personal safety and risk exposure. This is a high risk to property owners. No unauthorized entrance will be acceptable. Staying on next to existing roads where possible will be more acceptable – not accessing the total farm. No fires on construction sites.
- Crime and violence. Eskom and the contractors are not welcome due to the perception that livestock thefts can increase.
- Fire risk prevention. Eskom Transmission implemented the AFIS system where three satellites monitor (two of which are MODIS by NASA) which together track fires. The system updates every 15 minutes and fires as small as 0.25ha can be picked up. If these fires come within 2.5km from transmission power lines, warnings are sent via text messages to relevant Eskom employees mobile phones. Where possible national control can temporarily isolate the circuit under threat. Fire suppression teams are sent out where available. (Frost, Josephine, Momberg & Vosloo. 2010)

Eskom registers servitudes for power lines. This means that the property still belongs to the relevant land owner, and Eskom owns the right to have a power line over the property. Since the property still belongs to the land owner, it is still the responsibility of the land owner. Eskom does however do maintenance of the vegetation under the power lines (in the servitude area) to decrease the fire risk under the lines.

### **Economic impacts and material wellbeing**

- Property values. There may be a negative effect on the property values pending on the utilization of the land. The influence will be taken into consideration during the valuation process where a valuation is to be done by a registered professional valuer and land owners is to receive market value compensation. This will form a part of the negotiation and land acquisition process, which will follow after environmental authorization has been granted.
- Employment. Only limited unskilled work opportunities may be available to local communities.
- Replacement costs of environmental functions. Land owners will be able to continue farming activities. Structure planning must be liaised with land owners in cultivated fields.

### **Cultural impacts**

- Loss of natural and cultural heritage. Refer to relevant report.

### **Family and Community impacts**

- Social networks. The proposed route is mostly over mining properties, agricultural and game farm - fair neighbouring relationships exist.

- Community connections. Social network exist in the community where a group will support each other. This is essentially in the form of farmers associations. (The relevant associations in the area have been informed about the proposed project and is considered part of the I & AP's)

### **Institutional, legal, political and equity impacts**

- Impact equity. There should be a fair distribution of the impacts across the community. This project will ensure a better supply of electricity and fewer interruptions to all.

Other institutions that will also possibly be affected are state owned organizations like SANRAL, Transnet as well as the relevant municipalities and provinces.

### **Gender relations**

- Gender division of labour. According to Statistics South Africa SLM have a greater than 51,5% female population (2011). There are normally not woman employed as unskilled labour for the construction of power lines.

## 7. LAND USE POTENTIAL

### 7.1 GAME FARMS AND NATURE RESERVES

Several game farms are located in the area of study. The following lists some of the possible game farms and nature reserves that may be affected:

**Dronfield:** was proclaimed a nature reserve in 2004 and is owned by De Beers. The reserve is significant for its birdlife. There has been breeding of white-backed vultures for the past two decades and the park is the home of more than 140 bird species. Other mammals include various species of antelope. The reserve offers accommodation to tourists. (De Beers Ecology Division, n.d.)

**Mattanu Private Game Reserve:** the reserve has been in the Kriek family since 1991. Dr Kriek, a veterinarian and owner, imported rare and endangered antelope from Malawi in 1991 and has since successfully bred various species of exotic wildlife including sable, buffalo, royal oryx, golden oryx, golden gnu, black impala, tsessebe and Livingstone eland. (Mattanu Private Game Reserve, n.d.)

**Rooipoort:** situated 63km west of Kimberley and bordering 32km of the Vaal River. The total extent of the reserve is 40 000ha, making it one of the largest privately owned nature reserves in South Africa. Several accommodation options are offered to guests. The park has 14 antelope species and has a progressive conservation policy. It is one of the largest suppliers of wildlife to game farms and reserves in South Africa. Rooipoort played a major role in the re-establishment of the swart wildebeest which was in danger of extinction in the 1940s. (De Beers Ecology Division, n.d.)

**Tarentaalrand Safari Lodge:** situated North/North-East from Kimberley, it caters exclusively to foreign hunters. Activities include trophy hunting, bow hunting and cull hunting. (Tarentaalrand Safari Lodge n.d.)

## 7.2 MINING

De Beers is still discovering diamonds from Kimberley's tailings dumps. (De Beers, n.d.) This, however, falls outside the scope of the BoSS – USS power line and the new USS.

**Elandslaagte mine:** falls within the corridor of alternative 1. According to Mining Atlas “the mine has been on care and maintenance for some time” and its status is suspended. InfoMine states that on the 25<sup>th</sup> of January 2008 there was reported that the reason for the suspension had been that the electricity supply in the NCP was increasingly unreliable, which impede the mine progress.

**Ulco:** is one of the largest cement mines and factories in the Southern Hemisphere (My Destination, n.d.). It is operated by Afrisam, who has made great leaps in running an environmentally friendly plant.

In the area of Delportshoop and Diamondveld there several diamond diggings, however this falls outside of the proposed corridors.

## 7.3 AGRICULTURAL

Agricultural activities consist out of cattle and sheep farming. There are a few areas with arable lands, most of which are irrigated with pivots systems from the Vaal River.



Figure 7 – Pivot irrigated lands in the vicinity of the Vaal River

#### **7.4 SOLAR ENERGY FACILITIES**

According to Savannah Environmental (Pty) Ltd, EIA's are being conducted for Solar Energy Facilities on the following properties:

- Droogfontein 62
- Portion 2 of Holsdam 229
- Plaas 217
- Plaas 278

#### **7.5 LAND USE**

Currently most of the farms in the area of study is used for grazing of livestock and/or game; many of the game farms are exclusive and cater for international hunters only.

## 8. CONCLUSION

The socially preferred route will have the minimum impact on individual properties. The area from the proposed new Boundary Substation, on the northern side of Kimberley, consists mainly of game farms including Dronfield Nature Reserve. This reserve has sensitive areas where the corridor was originally planned including Camel Thorn Trees and a vulture restaurant. There were no alternatives proposed by Eskom for this section.

Along the Vaal River, west from Kimberley, there are multiple irrigated lands. In these areas, special consideration is required regarding pylon placement.

South of Barkly West the farms are mostly owned by the state and CPA's and greatly utilized for grazing purposes. The impact of the power line will thus mostly be limited to the area of the foundations of pylons.

During consultation with land owners it became apparent that it will be preferred if the proposed power line can be as close as possible to farm boundaries and existing power lines and have the smallest possible impact on nature reserves.

The new Ulco Substation will have a similar impact on whichever side of the existing substation. The determining factor for the position is expected to be on a technical aspect

Through the desktop study and discussions with I&APs it became apparent that alternative 2 would be the preferred corridor since it has a minimum impact on conservation areas. The public participation open day to follow will be an opportunity to discuss specific land owner reservations.

The public participation meetings held in July 2014 provided an opportunity to discuss specific landowner reservations. There were also some individual visits conducted.

## 9. RECOMMENDATIONS

Considering the information available from research conducted through desktop studies, site visits and consultation with Eskom, land owners and other relevant individuals it became apparent that new alternative corridors need to be considered for the proposed power line.

amp would like to suggest the following two alternative routes:

**New Alternative 1:** This alternative heads west from the proposed new BoSS towards the N12. Through this route the sensitive vulture restaurant and Camel Thorn Tree area on Dronfield is avoided by running on the similar position as the original alternative 1, with the exception of deviations closer to farm boundaries as requested by the land owners in the area.

The route turns north parallel to the N12, after which it crosses the N12 and heads north west similar to the original alternative 1 route. The route then deviates to a more westerly direction and crosses the Vaal River parallel to an existing 66kV line. The route follows the Holsdam – Riverton 66kV power line bending in a south western direction, then turning north west parallel with the existing Weir – Gong-Gong 132kV power line Holsdam – Ulco 1 132kV power line. The alternative continues parallel to the last mentioned line, crossing over state owned properties. It bends parallel to the Kudu – Gong-Gong 132kV power line until it and continues straight until bending south towards the new proposed Ulco Tx Substation.

**Alternative 1A:** This alternative is similar to alternative 1 but deviates after crossing the Vaal River this route continues straight and only bends parallel to Holsdam farm boundaries. It then runs parallel to the Existing Weir – Gong-Gong 132kV and then parallel to the Kudu – Gong-Gong 132kV power line. The alternative then follows the same route as alternative 1 discussed above.

Advantages of the route adjacent to the road are that there is existing infrastructure; access will be simplified for construction. Game farms like Matannu is avoided.

Limitations there are sensitive areas that cannot be avoided as in the case of crossing the Vaal River.

**New Alternative 2:** This route follows the same route as suggested in the new alternative 1. After crossing the N12 it follows the same route as the original alternative 2.

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Advantages of this route are that most of the route is along existing Tx power line servitudes, access roads and gates have already been established. (ground already disturbed).

Limitations are that generally the land owners to the south of Ulco have had very negative experiences with Eskom and Eskom contractors.

Annexure C provides a Google image of suggested alternatives discussed above.

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**APPENDIX A**

**INTERESTED AND AFFECTED PARTIES**

**STAKEHOLDER DATABASE**

BOUNDARY – ULCO SUBSTATIONS 400kV POWERLINE  
& NEW ULCO 400kV SUBSTATION

<b>INTERESTED AND AFFECTED PARTIES</b>		
<b>FARM NAME, PORTION NUMBER: OWNER: CONTACT PERSON</b>	<b>Original alternative corridors applicable</b>	<b>New alternative corridors applicable</b>
Kareeboom 438, Restant: Andre Markgraaf	1, 2 & 3	1 & 2
Tablefarm 242: Silwerboom Eiendomme-Kuruman CC: Theuns Cloete	1, 2 & 3	1 & 2
Kareeboom 76, Remainde: Mr Alan Thompson	1, 2 & 3	1 & 2
Kareeboom 76, Portion 2: Mr Alan Thompson	N/A	1 & 2
Dorstfontein 77, Remainder: De Beers Consolidated Mines Pty Ltd	N/A	1 & 2
Samaria 75: De Beers Consolidated Mines (Pty) Ltd:	1, 2 & 3	1 & 2
Picardi 72: De Beers Consolidated Mines (Pty) Ltd:	1, 2 & 3	N/A
Kenilworth Estate 71: De Beers Consolidated Mines (Pty) Ltd:	1, 2 & 3	1 & 2
Kenilworth Estate 71, Portion 12: Sol Plaatje Municipality	N/A	1 & 2
Phoenix 184: Hendrik Jacobus Smith:	1, 2 & 3	1 & 2
Roodepan 70, Portion 14: Liebherr Trans Trust	N/A	1 & 2
Droogfontein 62, Restant: Droogfontein Communal Prop ACC:	1, 2 & 3	1 & 2
Droogfontein 62, Portion 1: Droogfontein Communal Prop ACC:	2 & 3	2
Droogfontein 62, Portion 2: ?Xu & Khwe Vereniging vir Gemeenskaplike Eiendom	2 & 3	2
Plaas 193: Droogfontein Communal Prop ACC:	1	1
Wildebeest Kuil 69, Restant: ?Xu & Khwe Vereniging vir Gemeenskaplike Eiendom:	2 & 3	2
Platfontein 68: ?Xu & Khwe Vereniging vir Gemeenskaplike Eiendom:	2 & 3	2
Nooitgedacht 66, Portion 6: Michael Patrick Hall:	2	2
Nooitgedacht 66, Restant: Michael Patrick Hall:	1, 2 & 3	1 & 2
De Hoop 65, Portion 15: Droogfontein Communal Prop ACC:	1	1

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De Hoop 65, Restant: Eridanus Agriculture (Pty) Ltd & Lazy Spade Ranches (Pty) Ltd:	1	1
De Hoop 65, Portion 5: Droogfontein Communal Prop ACC:	1	1
River Bend Estate 288:	1	1
Holsdam 229, Portion 2: Kenne Nicolaas de Kock: Kenne de Kock	1	1
Holsdam 229, Remainder: KELRN LANDGOED CC: Kenne de Kock	N/A	1
Rosalind 224, Restant: Basfour 730 (Pty) Ltd: Charlotte Potgieter	1	1
Rosalind 224, Portion 2: Peep Trust: Pieter A. Versluis of Pieter (Jnr)	1	N/A
Plaas 225: Springfit Estates Pty Ltd: Jannie Liebenberg	1	N/A
Le Grange 169, Portion 2: Johan Kriek Familie Trust	1	N/A
Barkly West 3010: Mun Van Barkly Wes	1	1
Greeffputs 169, Restant: Zelpy 2648 (Pty) Ltd: Willem Van Zyl	1	N/A
Greeffputs 169, Portion 1: Referendum Landgoed Pty Ltd	N/A	1
Plaas 222, Portion 1: Nasionale Regering Van Die Republiek Van Suid-Afrika	N/A	1
Plaas 230, Remainder: Nasionale Regering Van Die Republiek Van Suid-Afrika	N/A	1
Plaas 172: Van Der Westhuizen Estates (Pty) Ltd:	1	N/A
Plaas 173: National Government of the Republic of South Africa:	1	N/A
Rus en Vrede 220: Barend Jacobus Liebenberg / Fredrieka Elizabeth Liebenberg: BJ Liebenberg (Jnr) ?	1	N/A
Plaas 221: Melkvei Familie Trust:	1	1
Longlands 231, Portion 3: Melkvei Familie Trust	N/A	1
Longlands 231, Remainder: Republiek Van Suid-Afrika	N/A	1
Karolusdrift 219, Restant: Barend Jacobus Liebenberg: Bennie Liebenberg	1	1
Delpportshoop:	1	1
Likatlong 317, Remainder: Naude Greyling	1	1

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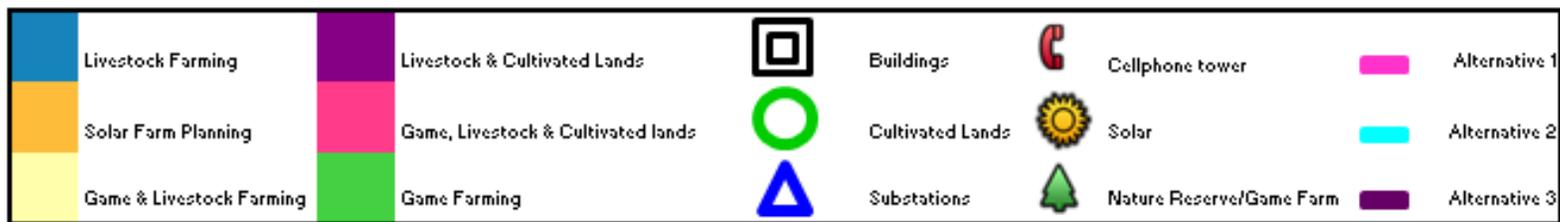
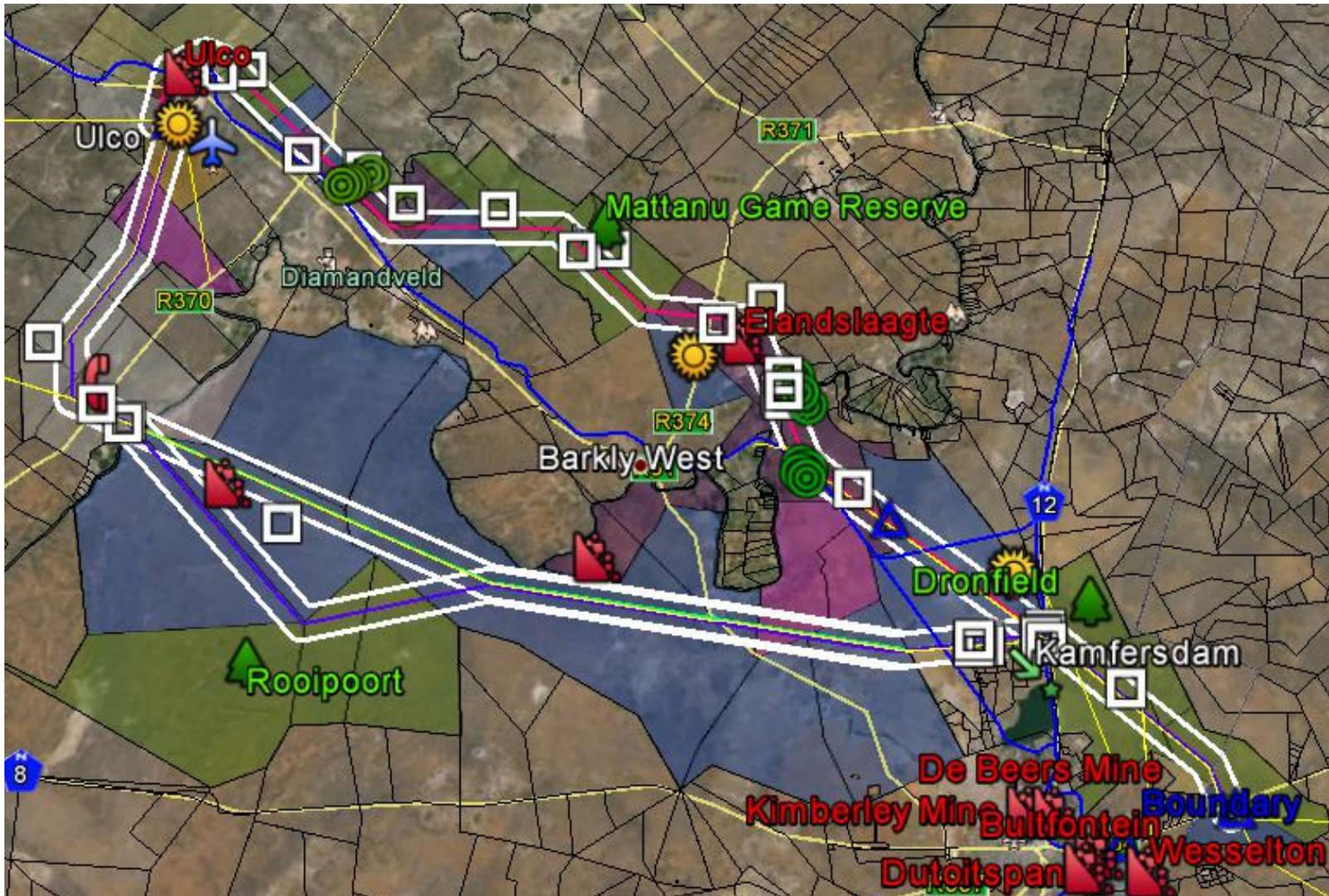
Likatlong 317, Portion 1: Naude Greyling	1	1
Likatlong 317, Portion 2: Naude Greyling	1	1
Likatlong 317, Portion 4: Schmidtsdrift II Claimants Trust: Bennie Beukes	1	1
Likatlong 317, Portion 9: Johannes Botha:	1	1
Likatlong 317, Portion 12: Friedrich Karl Rost: Maks Rost	1	1
Likatlong 317, Portion 5: Friedrich Karl Rost: Maks Rost	1	1
Likatlong 317, Portion 6: Neels du Preez Trust:	1	1
176, Portion 2: Holcim South Africa (Pty) Ltd: Angus Towel	1	1
Plaas 176, Restant: Vogelfontein Farming CC: Kenny Shaw	1	1
216, Portion 2: Soloprop 1200 (Pty) Ltd:	1	1
216, Portion 6: Holcim South Africa (Pty) Ltd:	1	1
216, Portion 3: Holcim South Africa (Pty) Ltd:	1	1
215, Portion 2: Holcim South Africa (Pty) Ltd:	1, 2 & 3	1
Plaas 215: Glen Steyn:	1	1
Pniel 281: National Government of the Republic of South Africa:	2 & 3	2
THAN 280, Portion 1: Republiek van Suid Afrika:	2	2
Waterkolk 95: De Beers Consolidated Mines Ltd:	3	N/A
Randt Plaats 96: De Beers Consolidated Mines Ltd:	3	N/A
Vogelstruis Pan 98: De Beers Consolidated Mines Ltd:	3	N/A
Klipfontein 99: De Beers Consolidated Mines Ltd:	3	N/A
Drooge Veldt 292, Restant: Republiek van Suid Afrika:	2	2
Mozib 279, Portion 1: Republiek van Suid Afrika:	2	2
Plaas 278: Dikgatlong Municipality	2 & 3	2
Plaas 293, Restant: Pamela Alwene Ford:	2 & 3	2

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Plaas 293, Portion 1:	2 & 3	2
Plaas 277:	2 & 3	2
Plaas 233, Portion 1: Dikgatlong Municipality:	2 & 3	2
Plaas 232: Lans Potgieter	2 & 3	2
Plaas 232, Portion 1: Gert Venter Faber: Gert Faber	2 & 3	2
Plaas 232, Portion 2: Ostiprop 1155 (Pty) Ltd: James Faber	2 & 3	2
Plaas 217: Broekskeur Boerdery CC & (Pty) Ltd: Japie Botma	2 & 3	2

MUNICIPALITIES	
Province	Municipality
Northern Cape	Frances Baard District Municipality
Northern Cape	Sol Plaaityje Local Municipality
Northern Cape	Dikgatlong Local Municipality
Free State	Lejweleputswa District Municipality
Free State	Tokologo Local Municipality

**APPENDIX B**  
**LAND USE ILLUSTRATION**  
**(ORIGINAL ALTERNATIVES)**



**APPENDIX C**  
**RECOMMENDED NEW ALTERNATIVE ROUTES**

BOUNDARY – ULCO SUBSTATIONS 400kV POWERLINE  
& NEW BOUNDARY 400kV SUBSTATION

