

ESKOM HOLDINGS SOC LIMITED

ENVIRONMENTAL IMPACT ASSESSMENT

FOR THE

**PROPOSED ISUNDU 765/400 KV SUB-STATION
AND TURN-IN TRANSMISSION LINES**

DEA EIA REF: 14/12/16/3/3/2/745

**Social Impact Assessment
Specialist Report (Final)**

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DEA EIA REF: 14/12/16/3/3/2/745; 12/12/20/1397/3/AM2

**Social Impact Assessment
Specialist Report (Final)**

Report prepared for:

ACER (Africa) Environmental Consultants
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Report prepared by:

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September 2015

EXECUTIVE SUMMARY

Introduction

Background

Eskom's KwaZulu-Natal (KZN) Strengthening Programme requires the construction of transmission lines from the Alpha Sub-station near the Thuthuka Power Station in Mpumalanga, to the Eros Sub-station near Harding in southern KZN. Following extensive environmental investigations between 2009 and 2011, the Sigma 1 Sub-station site, to the north-west of Wartburg, was identified as the preferred sub-station site. A preferred transmission line corridor for both the 765 kV and 2 x 400 kV transmission lines was also identified. Following the authorisation, the site underwent a more detailed geotechnical investigation. The investigation revealed that the earthworks and foundations for the proposed site will be exorbitantly expensive. Thus, Eskom initiated further investigations to identify if alternative, more cost-effective sub-station sites were available without needing to significantly alter the authorised VSHA transmission line corridor. The proposed Isundu 765/400 kV Sub-station is a replacement to the Sigma Sub-station which was previously authorised. If the Isundu Sub-station is authorised, the 765 kV transmission line from the Venus Sub-station will need to continue along the authorised transmission line corridor until the Isundu Sub-station. By implication, a single 765 kV transmission line rather than 2 x 400 kV transmission lines will be constructed in the corridor between the Sigma and Isundu sites. ACER (Africa) Environmental Consultants (ACER) has appointed an in-house specialist to undertake a social impact assessment for the proposed project. This report has also been externally reviewed.

Purpose and scope of this specialist study

The scope of work provided for this study is to identify and assess the social impacts that are likely to occur and identify possible mitigation measures in order to reduce negative impacts and enhance potential positive benefits all within the context of the receiving social environment.

Legal aspects

The following legislation and associated regulations are relevant to this social impact assessment:

- Constitution of the Republic of South Africa Act, 1996 (Act No. 108 of 1996) as amended.
- National Environmental Management Act, 1998 (NEMA) (Act No. 107 of 1998) as amended.
- National Heritage Resources Act, 1999 (Act No. 25 of 1999).
- Amafa, KwaZulu- Natal Heritage Legislation (Act No. 04 of 2008).

Project description

Project background

The purpose of a new sub-station in the network between Estcourt and Camperdown is to:

- Strengthen electricity supply to the greater Pietermaritzburg load area.
- Strengthen electricity supply to the KZN South Coast area via the Ariadne-Eros section of the overall KZN Strengthening Programme.
- Be able to establish transmission line linkages with load areas on the KZN North Coast, in particular the Empangeni/Richards Bay area.

Project components

The proposed Isundu Sub-station project comprises the following main components:

- ❑ 1 x Isundu 765/400 kV Sub-station on a 100ha site.
- ❑ 1 x 765 kV transmission line (the authorised VSHA transmission line).
- ❑ 2 x 400 kV double-circuit transmission lines from the sub-station to tie into the existing Hector-Ariadne 400 kV double-circuit transmission lines approximately 4 km away.
- ❑ 2 x 400 kV lines from the proposed Mbewu Sub-station near Empangeni¹.

In addition, the layout design allows sufficient space to accommodate an additional 765 kV transmission line or High Voltage Direct Current (HVDC) transmission line and two 400 kV transmission lines if required sometime in the future.

Methodology

Both qualitative and quantitative data analysis techniques were applied (using primary and secondary data sources) in order to successfully undertake the social impact assessment. Secondary data sources were used primarily to conduct the baseline socio-economic study of the area. The use of both secondary and primary data as well as quantitative and qualitative data allowed for the triangulation of findings. The impact assessment has been undertaken using conventions and criteria provided by ACER.

Study area

The Mkhambathini LM is located along the south-eastern boundary of the uMgungundlovu DM. The proposed Isundu Sub-station site is located to the east of Ashburton, and north of Camperdown, on land that is currently zoned 'Agriculture Tourism'. There are a number of existing and planned developments in close proximity to the proposed Isundu Sub-station site which may be affected by the project, including the African Bird of Prey Sanctuary and Raptor Rescue, Rainbow Farms (chicken breeding houses), the proposed Mayibuye Game Reserve, the Natal Zoological gardens, the Natal Lion Park and the proposed Wild Aloe Aero Estate.

Description of the receiving environment

There are numerous social and economic challenges being faced within the broader project area. While unemployment levels are lower than those experienced by the district and province, a large percentage of the population between the ages of 15 and 64 are economically inactive, while the economic base of the local municipality is heavily reliant on the agricultural sector. However despite this there has been a general increase in the average household income for the population. Access to education in the municipality has seen an improvement with a smaller percentage of the population reporting no access. However, levels remain below the district and provincial average while the percentage of the population completing Grade 12 levels and accessing tertiary education is poor. The lack of access to higher levels of education is seen to be a significant barrier to further economic development in the LM. Access to services (water, sanitation and electricity) has seen improvement, however levels are again below the district and provincial averages.

Description of findings

Social change processes

Changes to the following social processes are likely to occur as a result of the proposed project.

- ❑ Demographic processes
 - In-migration
- ❑ Economic processes
 - Waged labour

¹ These transmission lines are not being assessed in this social impact assessment.

- ❑ Socio-cultural processes
 - Deviant social behaviour
- ❑ Geographical processes
 - Conversion and diversification of land use

Social impacts – preconstruction and construction phase

It is anticipated that the following social impacts may occur during the preconstruction and construction phase of the proposed project.

- ❑ Health and social wellbeing
 - Increased spread of disease
- ❑ Quality of the living environment
 - Increased criminal activity
 - Increased dust
 - Reduced road safety
 - Increased pressure on existing infrastructure and services
 - Increased danger of fire
 - Aesthetic impacts
 - Increased noise
- ❑ Economic impacts and material wellbeing
 - Permanent loss of private land and housing
 - Increased employment opportunities
 - Increased opportunities for SMEs
 - Reduced property values

Social impacts – operational phase

It is anticipated that the following social impacts may occur during the operational phase of the proposed project.

- ❑ Quality of the living environment
 - Aesthetic impacts
 - Increased noise
- ❑ Economic impacts and material wellbeing
 - Increased opportunities for SMEs
 - Damage to private properties
 - Restrictions to future development
 - Loss of income

Cumulative impacts

The current EIA is assessing the potential impacts of the proposed Isundu Sub-station and the 4 km long 2x400kV transmission line linking into the existing Hector-Ariadne 2x400 kV double circuit line. However, the sub-station has been designed in such a way so as to allow for future transmission lines to be linked in, these future lines will be the subject of a separate assessment. While impacts created by the presence of the proposed sub-station and transmission lines addressed in this assessment may be able to be suitably mitigated, the cumulative impact of additional transmission lines may result in more significant social impacts on the Mayibuye Game Reserve and other tourism related activities in the area.

Decommissioning

In the event of the proposed project being decommissioned it is likely that the social environment will have changed significantly. As such it is recommended that at the time, in accordance with the prevailing legislation, any relevant studies are undertaken.

Conclusions and recommendations

It is well known that to sustain economic growth and development an efficient and effective electricity supply is vital. With this in mind Eskom's KZN Strengthening Program aims to improve the reliability of electricity supplies.

No fatal flaws were identified from a social perspective for the proposed Isundu Sub-station and turn-in transmission lines. There may be impacts of medium significance both as a direct or indirect result of the proposed sub-station and transmission lines. During both the construction and operation phase of the proposed project it is likely that the aesthetic nature of the area will be transformed. This is of specific concern as many of the existing enterprises and planned enterprises in the immediate area are tourism based and are thus reliant on the rural nature of the area. It has however been concluded, following the findings of the visual impact assessment report, that with suitable mitigation measures these impacts can be reduced to a level which should not have a significant impact on the local aesthetics of the area. In terms of social impacts the following recommendations are made:

Criminal activity: During the construction process, the possibility of crime escalating, especially poaching, in the study area is a concern. Eskom must liaise with the surrounding landowners and a protocol for gaining access to private land should be established and distributed to all parties involved. The impact of possible careless conduct by contractors must be acknowledged and the contractors should receive induction in terms of the relevant codes of conduct to which they should adhere. Construction teams should be clearly identified by wearing uniforms or identification cards that should be exhibited in a visible place on their body. Should any staff be caught in criminal activities of any kind, they should face instant dismissal and prosecution. The possibility of criminal opportunists moving through the area should also not be ignored and local police and community policing forums should be informed of this.

Employment: The study area is characterised by high levels of unemployment, particularly in the rural communities. As such, it is recommended that Eskom be required to source as much local labour as possible during the construction process.

SMEs: As is the case with employment, the proposed project has the potential to generate opportunities for locally based SMEs. It is recommended that, in conjunction with the local and district municipalities, a database be developed with details of services provided by local companies. As far as feasibly possible, Eskom should be required to make use of local service providers able to provide the required services during construction and operation processes.

Nuisance Disturbances: During the construction and operational phases of the proposed project, there should be measures put in place to prevent these nuisance disturbances from impacting the surrounding enterprises as far as reasonably possible. These nuisance disturbances include, noise, light, dust and fire (fire should also be regarded as an emergency).

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ABBREVIATIONS AND ACRONYMS

ACER	ACER (Africa) Environmental Consultants
CMMC	Community Management and Monitoring Committee
DEA	Department of Environmental Affairs
DM	District Municipality
EAP	Environmental Assessment Practitioner
EIA	Environmental Impact Assessment
EMFs	Electro-Magnetic Fields
Eskom	Eskom Holdings SOC Limited
HIV/AIDS	Human Immunodeficiency Virus/Acquired Immune Deficiency Syndrome
HVDC	High Voltage Direct Current
I&APs	Interested and affected parties
IFC	International Finance Corporation
IDP	Integrated Development Plan
KZN	KwaZulu-Natal
LM	Local Municipality
NEMA	National Environmental Management Act, 1998
PDA	KwaZulu-Natal Planning and Development Act (No. 6 of 2008)
SDF	Spatial Development Framework
SMEs	Small and Medium Enterprises
StatsSA	Statistics South Africa
VSHA	Venus-Sigma-Hector-Ariadne Project

AUTHORS

The Social Impact Assessment was undertaken by Mr DN Keal (ACER (Africa) Environmental Consultants) (ACER) who is also the principle author of this Specialist Study Report. The assignment was undertaken under the direction of Dr R-D Heinsohn (ACER) who also conducted an internal review of this report.

DECLARATION OF INDEPENDENCE



environmental affairs

Department:
 Environmental Affairs
REPUBLIC OF SOUTH AFRICA

DETAILS OF SPECIALIST AND DECLARATION OF INTEREST

	(For official use only)
File Reference Number:	12/12/20/
NEAS Reference Number:	DEAT/EIA/
Date Received:	

Application for authorisation in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended and the Environmental Impact Assessment Regulations, 2010

PROJECT TITLE

Proposed Isundu 765/400 kV sub-station and turn-in transmission lines

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The specialist appointed in terms of the Regulations

I **Duncan Keal** declare that --

General declaration:

- I act as the independent specialist in this application
- I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant
- I declare that there are no circumstances that may compromise my objectivity in performing such work
- I have expertise in conducting the specialist report relevant to this application, including knowledge of the Act, regulations and any guidelines that have relevance to the proposed activity
- I will comply with the Act, regulations and all other applicable legislation
- I have no, and will not engage in, conflicting interests in the undertaking of the activity
- I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing - any decision to be taken with respect to the application by the competent authority; and - the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority
- all the particulars furnished by me in this form are true and correct
- I realise that a false declaration is an offence in terms of Regulation 71 and is punishable in terms of section 24F of the Act



Signature of the specialist:

ACER (Africa) Environmental Consultants

Name of company (if applicable):

30 September 2015

Date:

1 INTRODUCTION

1.1 Background

Eskom Holdings SOC Limited (Eskom) is the largest generator and distributor of electricity in South Africa. Eskom transmits electricity countrywide via a network of high-voltage sub-stations and inter-connecting transmission lines (765 kV, 400 kV and 275 kV). From the transmission sub-stations, the electricity is distributed to end users through a network of smaller sub-stations and power lines (Eskom, 2013).

Eskom's KwaZulu-Natal (KZN) Strengthening Programme aims to increase and strengthen the electricity transmission network to the KZN midlands and southern KZN region. The programme involves strengthening the transmission network by constructing a number of new transmission lines and linking the main generating facilities in Mpumalanga with demand centres in KZN. This requires the construction of transmission lines from the Alpha Sub-station near the Thuthuka Power Station in Mpumalanga, to the Eros Sub-station near Harding in southern KZN.

Since 2009, Eskom has been investigating various options to bring a 765 kV transmission line from the Venus Sub-station, near Estcourt, to a new sub-station (Sigma) in the KZN midlands, with two 400 kV transmission lines from the new Sigma Sub-station linking into the existing Hector and Ariadne Sub-stations.

Following extensive environmental investigations between 2009 and 2011, the Sigma 1 Sub-station site, to the north-west of Wartburg, was identified as the preferred sub-station site. A preferred transmission line corridor for both the 765 kV and 2 x 400 kV transmission lines was also identified. The Department of Environmental Affairs (DEA) issued Environmental Authorisation on 11 June 2012 for the Venus-Sigma-Hector-(Ariadne) (VSHA) 765/400 kV Transmission Lines and the new Sigma Sub-station.

Following the authorisation, the site underwent a more detailed geotechnical investigation. The investigation revealed that the earthworks and foundations for the proposed site will be exorbitantly expensive. Thus, Eskom initiated further investigations to identify if alternative, more cost-effective sub-station sites were available without needing to significantly alter the authorised VSHA transmission line corridor. Over 25 alternative sites were investigated, all of which proved unsuitable except for the proposed Isundu site located to the east of Ashburton (Figure 1 and 2).

The proposed Isundu 765/400 kV Sub-station is a replacement to the Sigma Sub-station which was previously authorised. If the Isundu Sub-station is authorised, the 765 kV transmission line from the Venus Sub-station will need to continue along the authorised transmission line corridor until the Isundu Sub-station. By implication, a single 765 kV transmission line rather than 2 x 400 kV transmission lines will be constructed in the corridor between the Sigma and Isundu sites.

During scoping, it was noted that considering the nature and location of the proposed project it is likely that social impacts may occur during the construction and operation phases. Therefore, ACER (Africa) Environmental Consultants (ACER) has appointed an in-house specialist to undertake a social impact assessment for the proposed project. The assessment (detailed in this report) is being undertaken in order to identify and assess the social impacts that are likely to occur and identify possible mitigation measures in order to reduce negative impacts and enhance potential positive benefits.

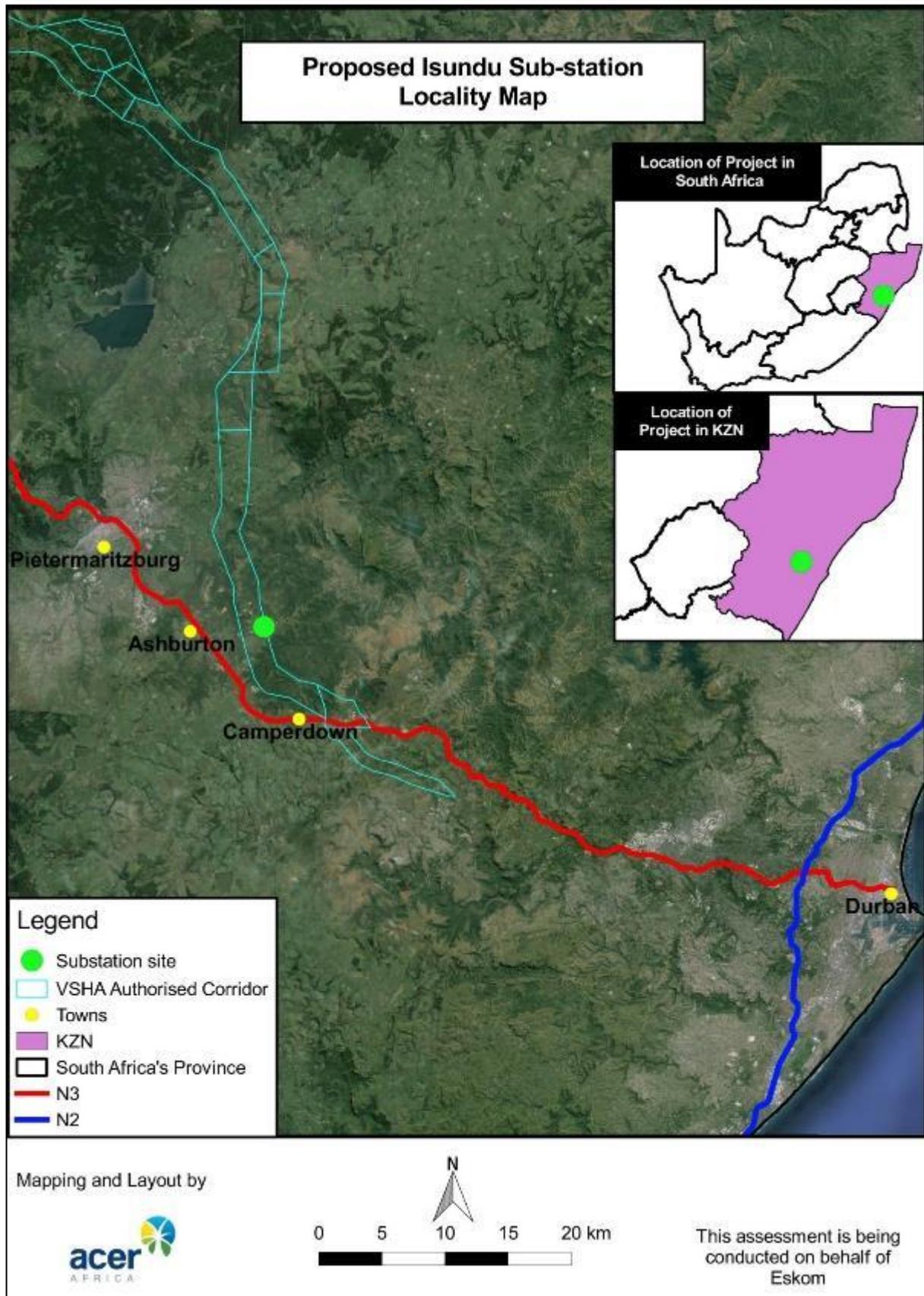


Figure 1 Proposed Isundu Sub-station Locality Map

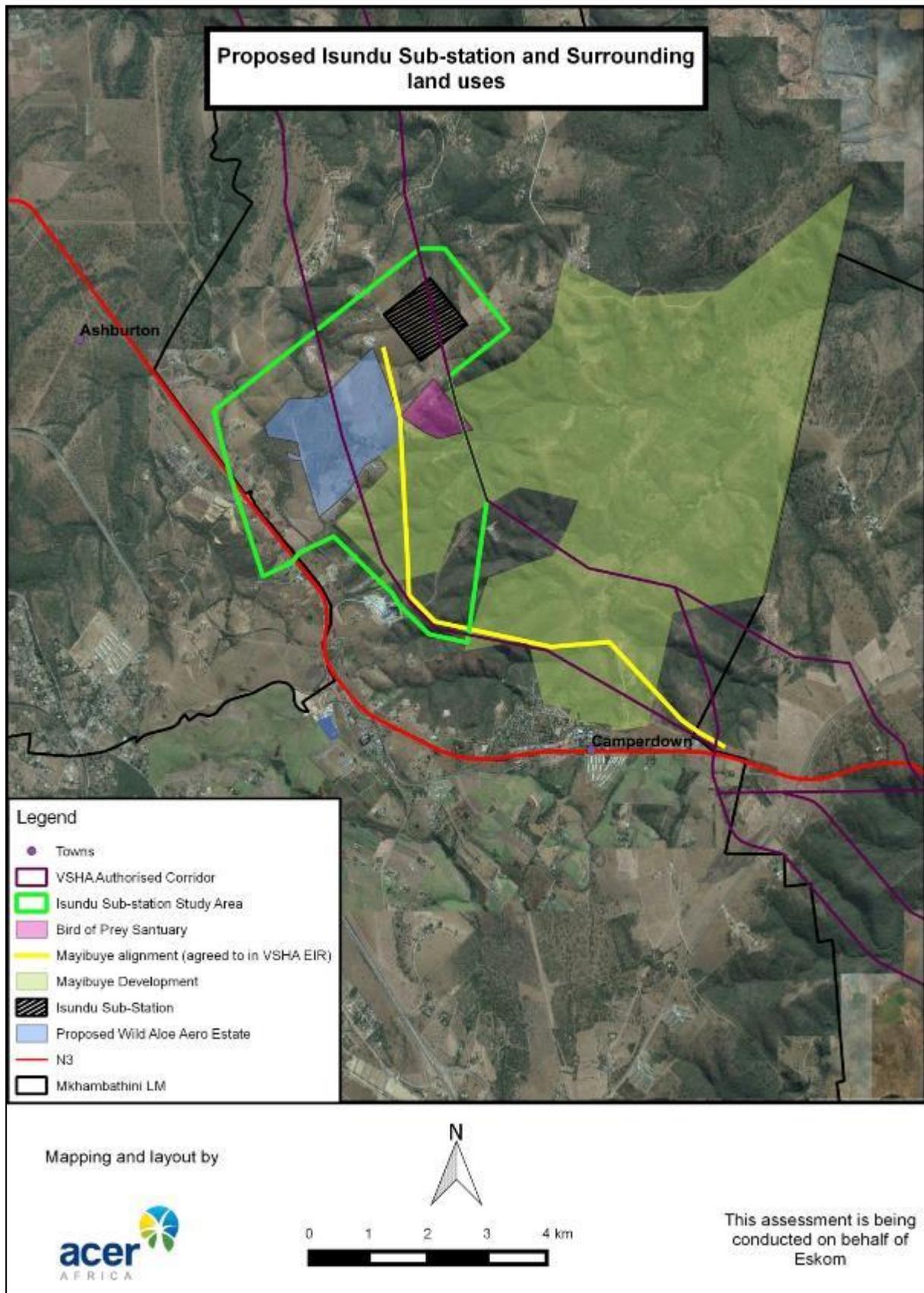


Figure 2 Proposed Isundu Sub-station and surrounding land use.

1.2 Qualifications and experience of the practitioners

ACER was established in 1991 and operates throughout Southern Africa. This investigation was conducted by Mr Duncan Keal who was assisted by Ms Mareike Straeuli. Duncan Keal has theoretical and practical experience in the assessment of social and socio-economic processes and issues involved in large, often complex projects. The investigation was carried out under the guidance and directorship of Dr Dieter Heinsohn. Dr Heinsohn has developed an impeccable reputation in environmental management. Of particular note is his experience in social impact assessments, the design and running of public involvement programmes, resettlement planning and implementation, and the management of large and/or complex environmental impact assessment processes.

Table 1 Qualifications and experience

EAP	Academic Qualification	Relevant Work Experience
Dr Dieter Heinsohn	PhD	Dieter Heinsohn has more than 25 years' experience in environmental management and social and socio-economic impact assessments. He is registered with the South African Council for Natural Scientific Professions in the field of environmental science (Registration No 400442/04) and is a certified Environmental Assessment Practitioner with the Interim Certification Board. He has worked across a wide variety of sectors and has contributed to various international publications.
Mr Duncan Keal	MA	Duncan Keal is a graduate of Rhodes University and has recently completed an Advanced Certificate in Social Impact Assessment through the University of Johannesburg. He has four years' experience in consulting, with a focus on social and socio-economic assessments.

1.3 Purpose and scope of this specialist study report

The scope of work provided for this study is as follows:

- Describe the current social environment within the Isundu study area.
- Identify and discuss potential impacts (positive and negative, local and regional, including cumulative impacts) of the proposed project on the social environment during construction, specifically considering:
 - Potential impacts on existing infrastructure, in particular, homesteads (and the need for resettlement).
 - Possible traffic impacts during construction.
 - Employment and population influx.
 - Nuisance, the transmission of diseases, in particular, HIV/AIDS, and health and safety impacts during construction.
 - Potential impacts from an increase in crime, including poaching and stock theft, during construction.
- The identification of mitigation measures for enhancing benefits and avoiding or mitigating negative impacts and risks (to be implemented during design, construction and operation of the proposed project).

1.4 Report structure

This specialist study report consists of 14 chapters. The report is structured as follows:

- Chapter 1 – Introduction.
 - Brief background to the project, details of practitioners and scope of work.
- Chapter 2 – Legal aspects.
 - Relevant legislation including international and national safeguards are discussed.
- Chapter 3 – Project description.
 - The project and all associated components are presented.
- Chapter 4 – Methodology.
 - The manner in which the research and assessment were conducted is discussed.
- Chapter 5 – Assumptions and limitations, and gaps in knowledge.
 - All assumptions made and limitations experienced in compiling this specialist study report are identified.
- Chapter 6 – Study area.
 - The area surrounding where the project will be taking place is described.
- Chapter 7 – Description of the receiving environment.
 - The socio-economic conditions prevailing in the study are discussed.
- Chapter 8 – Description of findings.
 - Possible socio-economic impacts are identified and discussed.
- Chapter 9 – Impact Assessment and mitigation.
 - All identified impacts both positive and negative are assessed according to the required methodology.
 - Mitigation and management measures are identified.
- Chapter 10 – Conclusions and recommendations.
 - Final comments on the socio-economic impacts are provided.

2 LEGAL ASPECTS

2.1 Applicable legislation

The following legislation and associated regulations are relevant to this social impact assessment:

- Constitution of the Republic of South Africa Act, 1996 (Act No. 108 of 1996) as amended.
- National Environmental Management Act, 1998 (NEMA) (Act No. 107 of 1998) as amended.
- National Heritage Resources Act, 1999 (Act No. 25 of 1999)
- Amafa, KwaZulu- Natal Heritage Legislation (Act No. 04 of 2008)

2.1.1 ***Constitution of the Republic of South Africa Act, 1996 (Act No. 108 of 1996) as amended***

The Constitution is the supreme law of South Africa, against which all other laws are measured. It sets out of a number of fundamental environmental rights, important ones of which are described hereunder.

The Environmental Clause

Section 24 of the Constitution outlines the basic framework for all environmental policy and legislation: It states:

“Everyone has the right –

- a) to an environment that is not harmful to their health or well-being; and*
- b) to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that –*
 - i) prevent pollution and ecological degradation;*
 - ii) promote conservation; and*
 - iii) secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development”.*

Access to Information

Section 32 of the Constitution provides that everyone has the right of access to any information held by the State or another juristic person, and that is required for the exercise or protection of any rights.

Fair Administrative Action

Section 33 of the Constitution provides the right to lawful, reasonable and procedurally fair administrative action.

Enforcement of Rights and Administrative Review

Section 38 of the Constitution guarantees the right to approach a court of law and to seek legal relief in the case where any of the rights that are entrenched in the Bill of Rights are infringed or threatened.

2.1.2 ***National Environmental Management Act, 1998 (Act No. 107 of 1998) as amended***

The National Environmental Management Act (NEMA) promotes citizens' right to an environment that is not harmful to their health and wellbeing. This right is closely linked to the Constitution where clause 32 of the Bill of Rights stipulates that current and future generations

have a right to a healthy environment. NEMA defines the environment as the natural environment as well as the physical, chemical, aesthetic and cultural properties that influences a person's health and well-being.

NEMA provides the legislative framework for Integrated Environmental Management in South Africa. Section 24 provides that all activities that may significantly affect the environment and require authorisation by law, must be assessed prior to approval. Section 2 of NEMA provides a set of principles that apply to the actions of all organs of state that may significantly affect the environment. These principles include the following:

- The sustainability principle.
- The life-cycle, cradle-to-grave principle.
- The 'polluter pays' principle.
- The precautionary principle.
- The duty of care principle.
- Fair and transparent public consultation.

2.1.3 National Heritage Resources Act, 1999 (Act No. 25 of 1999)

The National Heritage Resources Act aims to promote an integrated system for the identification, assessment, and management of the heritage resources of South Africa.

2.1.4 Amafa- KwaZulu-Natal Heritage Act, 2008 (Act No. 04 of 2008)

The KwaZulu-Natal Heritage Act aims to provide for the conservation, protection and administration of both the physical and the living or intangible heritage resources of KwaZulu-Natal.

2.2 International safeguards

There are a host of international safeguards that apply to a project of this nature where there may potentially be significant social and socio-economic impacts, in particular, resettlement. The accepted best practice safeguards for sustainable development are provided by the World Bank Group² and are documented in the International Finance Corporation's (IFC) Policy and Performance Standards on Social and Environmental Sustainability. Attention should also be given to the Equator Principles, which govern the manner in which subscribing private sector financial institutions undertake capital investment projects.

² Experience suggests that most international lenders apply the provisions of the World Bank Group.

3 PROJECT DESCRIPTION

3.1 Project background

Eskom's KZN Strengthening Programme aims to increase and strengthen the electricity transmission network to the KZN Midlands and southern KZN region. To do this Eskom needs to establish a link between the Venus Sub-station (near Estcourt, KZN) and the Hector and Ariadne Sub-stations (near Pietermaritzburg, KZN). At present the proposed transmission line that would be leaving the Venus Sub-station is a 765kV line, whereas the lines connecting the Hector and Ariadne Sub-stations are 400kV transmission lines. In order to allow these sub-stations to be linked voltage needs to be stepped down from 765kV to a 400kV line, thus creating the need for a new sub-station.

As part of the current project configuration, the proposed Isundu Sub-station will accommodate one incoming 765 kV transmission line and two double-circuit 400 kV outgoing lines that will tie-in to the existing Hector-Ariadne double-circuit 400 kV transmission line. The sub-station will include the associated switching, protection and control equipment.

The purpose of a new sub-station in the network between Estcourt and Camperdown is to:

- ❑ Strengthen electricity supply to the greater Pietermaritzburg load area.
- ❑ Strengthen electricity supply to the KZN South Coast area via the Ariadne-Eros section of the overall KZN Strengthening Programme.
- ❑ Be able to establish transmission line linkages with load areas on the KZN North Coast, in particular the Empangeni/Richards Bay area.

The position of sub-stations in the network, as well as the distance between sub-stations, is determined by the peculiarities of electricity transmission at extra high voltage. Added to this, load centres and demands change, therefore to get the electricity to the demand centres requires new infrastructure in different locations. Aspects such as these constrain planners as to where sub-stations need to be located within the grid (it is not simply a matter of moving to a different area if suitable sub-station sites are difficult to find).

The proposed Isundu Sub-station project is located near Ashburton, KwaZulu-Natal. The proposed project site falls within the Mkhambathini Local Municipality (LM) which is one of seven local municipalities which make up the uMgungundlovu District Municipality (DM). The proposed transmission line corridor falls within the Mkhambathini LM, Msunduzi LM and the uMshwathi LM.

3.2 Project components

The proposed Isundu Sub-station project comprises the following main components

- ❑ 1 x Isundu 765/400 kV Sub-station on a 100ha site.
- ❑ 1 x 765 kV transmission line (the authorised VSHA transmission line).
- ❑ 2 x 400 kV double-circuit transmission lines from the sub-station to tie into the existing Hector-Ariadne 400 kV double-circuit transmission lines approximately 4 km away.
- ❑ 2 x 400 kV lines from the proposed Mbewu Sub-station near Empangeni³.

³ These transmission lines are not being assessed in this social impact assessment.

In addition, the site and layout design allows sufficient space to accommodate additional transmission lines if required at some point into the future. The space allowed will potentially accommodate at an unknown time in the future the following additional transmission lines:

- 1 x 765 kV or High Voltage Direct Current (HVDC) transmission line.
- 2 x 400 kV transmission lines.

The project also entails the construction of a 750 m access road to the sub-station, a microwave radio communication mast and oil and fuel storage facilities, including an oil bund to contain any transformer oil spills.

The construction of the sub-station will take approximately three years. However, during this period there will be a period of more intense activity lasting approximately 18 months. There will be approximately 80 people working on the construction site at any given time (ACER, 2015). The construction of a sub-station and transmission lines require specialised skills, skilled personnel and construction teams will have to be brought in, thus the employment of local unskilled labour will be limited.

3.3 Operation and maintenance

During operation, Eskom will require access to the transmission line servitudes from time to time for maintenance purposes which is likely to require the traversing of private property. Maintenance is carried out at regular intervals, and is sometimes done by helicopter so that electricity supplies are not disrupted. Maintenance activities are highly specialised and are, therefore, carried out by Eskom employees/contractors.

The transmission line servitudes will need to be cleared occasionally to ensure that vegetation and trees, including the management of alien species, do not interfere with the operation of the transmission lines.

3.4 Decommissioning

The decommissioning of the sub-station is not envisaged at any point. Should this be required in the future the following are assumed:

- The physical removal of the sub-station and transmission lines would entail the reversal of the construction process.
- A rehabilitation programme would need to be agreed upon with the landowner before being implemented.
- The disposal of materials from the decommissioned sub-station and transmission lines (steel, cabling, concrete, rubble, glass, etc.) would be at an approved waste disposal facility. Alternatively, recycling opportunities should be investigated and implemented.
- Specific considerations regarding the servitude and landowner rights would need to be negotiated with the landowner at the time of decommissioning

3.5 Alternatives

Since 2009, Eskom has investigated various alternatives for a 765/400 kV sub-station site in the KZN midlands. More than 25 new potential sites, some prior to the VSHA environmental assessment process, were investigated, whilst further sites were identified after the authorized Sigma site was found to be financially unfeasible.

The only site currently considered feasible for further consideration is the proposed Isundu Sub-station site. In this context, the only site alternatives currently being investigated are the Isundu Sub-station on the proposed site or the no-development option.

The no-development option will mean that Eskom will need to further delay grid improvements and continue further investigations to try and identify other potential sub-station sites (which is unlikely considering the exhaustive investigations undertaken to date). New sites would need to be further away from the optimum position which is sub-optimal for the transmission network.

4 METHODOLOGY

Both qualitative and quantitative data analysis techniques were applied (using primary and secondary data sources) in order to successfully undertake the social impact assessment.

Primary data were gathered during field work which included a:

- ❑ Site visit to the proposed sub-station site in order to obtain an informed understanding of the receiving environment.
- ❑ Discussions with key stakeholder, including surrounding landowners and the planning department from the Mkhambathini Local Municipality.

Secondary data sources were used primarily to conduct the baseline socio-economic study of the area. Sources of qualitative data included:

- ❑ Mkhambathini Municipal Integrated Development Plan (IDP) (2014/2015).
- ❑ Isundu Sub-station Draft Scoping Report.
- ❑ Isundu Sub-station comments and responses report.

Secondary sources of quantitative data used in compiling the baseline socio-economic conditions of the study area included:

- ❑ 2011 National Census Data – Statistics South Africa (extracted from Census 2012 Municipal Report, KwaZulu-Natal, 2012).
- ❑ 2001 National Census Data – Statistics South Africa (extracted from Census 2012 Municipal Report, KwaZulu-Natal, 2012).

The use of both secondary and primary data as well as quantitative and qualitative data allowed for the triangulation of findings.

The impact assessment has been undertaken using conventions and criteria provided by ACER.

5 ASSUMPTIONS AND LIMITATIONS AND GAPS IN KNOWLEDGE

5.1 Assumptions

- All data provided by Eskom and ACER are as accurate as possible, based on current available information.
- All information provided by other specialists is as accurate as possible, based on current available information.

5.2 Limitations and gaps in knowledge

- The breakdown of skilled and unskilled labour has not been provided.

6 STUDY AREA

6.1 Local communities

The Mkhambathini LM is located along the south-eastern boundary of the uMgungundlovu DM. The municipality is bordered to the west by the Richmond LM and Msunduzi LM and to the north by the uMshwathi LM. To the east of Mkhambathini LM lies eThekweni Metropolitan Municipality (Mkhambathini IDP, 2014/2015). Camperdown is the primary urban node and administrative headquarters of the municipality, and is strategically located along the N3, the primary provincial corridor that adjoins Durban and Pietermaritzburg as well as the economic hub of Gauteng with the coast and Durban Port (Mkhambathini IDP, 2014/2015).

The only other formal settlement in the vicinity of the project area is Ashburton. Ashburton, which falls within the Msunduzi LM, is located to the west of the proposed Isundu Sub-station site. It is a peri-urban area characterised by a number of 'small holdings' (Msunduzi IDP, 2011/2016). Settlement patterns in the immediate vicinity of the proposed site are small holdings and farms with unplanned scattered settlements in the Traditional Authority areas to the north and north-east.

6.2 Isundu Site

The proposed Isundu Sub-station site is located to the east of Ashburton, and north of Camperdown, on land that is currently zoned 'Agriculture Tourism'. The zoning allows for the development of rural based tourism (Mkhambathini SDF, 2014). Presently the proposed sub-station site is being used almost exclusively for the production of hay, albeit on a small scale.

6.2.1 Existing infrastructure and services

Transnet has three existing fuel pipelines in the vicinity of the proposed Isundu Sub-station site. These are the Durban-Johannesburg Pipeline, 12 inches wide, (DJP 12"), the Durban-Witwatersrand Pipeline, 16 inches wide (DWP 16") and the New Multi-Product Pipeline PL1 Trunkline, 20 inches wide (NMPP PL1 Trunkline 20") . The existing pipelines cross the south-eastern portion of the proposed sub-station study area (Maharaj, D., 2015, Per. comm.). In terms of the transmission lines, the pipelines will only be affected by the crossing of the 2x400 kV double-circuit transmission lines which will connect the Sub-station to the existing Hector-Ariadne 400 kV double circuit line.

Umgeni Water has registered a 6m wide servitude for a 350mm diameter water pipeline that runs adjacent to the Lion Park road, within the study area. The construction of the pipeline is due to start in July/August 2015 (Jugath, R., 2015, Per. Comm.). This will need to be taken into consideration, particularly during the construction of access roads. The servitude will also cross the 2 x 400 kV double-circuit transmission lines servitude.

6.2.2 Surrounding land-use and enterprises

There are a number of existing and planned developments in close proximity to the proposed Isundu Sub-station site which may be affected by the project.

The African Bird of Prey Sanctuary and Raptor Rescue, hereafter referred to as 'The Sanctuary', is situated on the eastern side of Lion Park Road (P477). The Sanctuary is located approximately 800m to the south of the proposed sub-station site on 60 ha of land belonging to the Mayibuye Community who are partners in the project. The Sanctuary, which forms part of the African Raptor Trust, a non-governmental and non-profit organisation, houses the largest selection of African raptors in the Africa and aims to protect and promote the conservation of raptors. Daily flight demonstrations are conducted at the Sanctuary which are open to the public.

A number of chicken breeding houses owned by Rainbow Farms are located in the vicinity of the proposed sub-station site, some within 500m. Rainbow Farms are South Africa's largest marketer and producers of chicken while the industry is of significant importance in terms of employment and its contribution to the local economy for the Mkhambathini LM (Rainbow Chicken, 2015). The area has the second highest concentrated of poultry producers in the world (Mkhambathini IDP, 2014/2015).

To the south of the proposed Isundu Sub-station site, is the \pm 4 000 Ha proposed Mayibuye Game Reserve, the construction of which has just commenced. The land, which is handed back to the Mayibuye community through a successful land claim, is to be developed as a big five game reserve through a partnership between the local community and a private investor. The Reserve will include a combination of residential units, game lodges and a wildlife rehabilitation center (PMMB Trust, 2015). The main entrance to the Reserve will be on the Lion Park Road (P477), directly opposite the proposed sub-station site (ACER, 2015).

The Natal Zoological Gardens – hereafter referred to as Natal Zoo – and Natal Lion Park are just over 1 km to the north-east of the sub-station site (ACER, 2015). There is a collection of 44 different animal species of both local and foreign origin (SA-Venues, 2014).

To the south-west of the sub-station site is farmland where planning is being undertaken for the authorisation of the proposed Wild Aloe Aero Estate. According to comments received by the developers the proposed estate will include an airstrip and hangars for people who own their own planes, some retirement sites, an eco-estate with equestrian facilities as well as a housing section for labour tenants and subsidized state housing. Whilst the proposed Wild Aloe Aero Estate will not be affected by the proposed Isundu Sub-station, the 2 x 400 kV double circuit transmission lines are likely to cross the area being demarcated for labour tenants and subsidized state housing (ACER, 2015).

The location of a sub-station will invariably result in future transmission lines needing to reach the sub-station. Even though these future transmission lines are not part of this application (like the planned Mbewu-Isundu 2x400 kV transmission lines), they are likely to have a direct and indirect impact on both the current enterprises and planned developments in the area of the sub-station (Bozas, D., 2015, Per. comm.). For this reason the potential indirect and cumulative impacts as a result of the proposed sub-station location will be considered as part of this application (ACER, 2015).

7 DESCRIPTION OF THE RECEIVING ENVIRONMENT

This section provides insight into the socio-economic environment prevailing in the project area. This enables the proposed project to be placed in context, enabling the identification of potential issues and associated impacts that the project is likely to have on the socio-economic environment as well as the impacts which the socio-economic environment are likely to have on the project.

7.1 Population

In terms of area, KZN is the third smallest province in South Africa (94,361 square kilometres) accounting for 7.7% of the entire country. Despite being the third smallest province, KZN has the second largest population, with a total population of 10,267,300 people (StatsSA, 2012a). The relatively small land area and high population number implies KZN is densely populated in comparison with other provinces in South Africa with an average of 109 people per square kilometre ranking KZN as the second most densely populated province in the country behind Gauteng (StatsSA, 2012a).

uMgungundlovu DM covers an area of 9,513 square kilometres with a population of 1,017,763 (107 people per square kilometres), while the Mkhambathini LM covers an area of 891 square kilometres with a population of 63,142 (71 people per square kilometre) (StatsSA, 2012b). These figures show that the Mkhambathini LM is less densely populated than the uMgungundlovu DM and the province as a whole, indicative of the rural nature of the Mkhambathini LM.

The population growth rate in the Mkhambathini LM is reported to have fluctuated since 2001. The Mkhambathini IDP states that the growth rate decreased from 2001 to 2007 and increased between 2007 and 2011, with the average growth rate between 2001 and 2011 reported to be 0.7%. The unstable nature of the population growth rate could be due to the high levels of in and out-migration that is reported to have taken place in the area (Mkhambathini IDP, 2014/2015).

Between 2001 and 2011 the average household income within the Mkhambathini LM increased by 7.6% (higher than the annual inflation rate of 5.4%⁴). This trend was experienced throughout KZN and the district with the average household income per annum also increasing by 7.9% annually between 2001 and 2011. However, despite the increase the average income level for Mkhambathini LM remains well below the South African average annual household income of R 103 195 (StatsSA, 2012a). Table 2 presents the figures discussed above.

⁴ <http://www.inflationcalc.co.za/>

Table 2 Population indicators (StatsSA, 2011)

Description	KwaZulu-Natal		UMgungundlovu DM		Mkhambathini LM	
	2001	2011	2001	2011	2001	2011
Years						
Total Population	9 584 129	10 267 300	932 121	1 017 763	59 067	63 142
Population Density (people per km ²)	104	111	98	107	66	71
Average Population Growth Rate (%)	0.7		0.9		0.7	
Total Households	2 117 274	2 539 429	217 558	272 666	12 550	14 964
Average Household Size	4.4	3.9	4.1	3.6	4.4	4.0
Percentage Female Headed Households	46.5	46.6	45.8	45.9	46.8	45.5
Percentage Child Headed Households	0.8	0.9	0.6	0.6	1.2	0.7
Percentage Formal Dwellings	60.2	71.6	64.4	70.6	46	48.9
Average Household Income Per Annum	R 38 905	R 83 050	R 43 413	R 92 986	R 25 255	R 52 659

7.2 Education

Access to education within the Mkhambathini LM has improved. This is illustrated by a decrease in the percentage of the population over the age of 20 reported to not have received any formal education from 29.4% in 2001 to 18.7% in 2011 (StatsSA, 2012b). Despite this improvement access to secondary and tertiary education remains poor, with only 20.6% of the population reported to have a Grade 12 level of education and only 5.0% some form of tertiary education (StatsSA, 2012b). The decrease in the percentage of the population reported to have received 'some schooling' is the result of an increased number of people completing Grade 12. However, despite the improvements, the percentage of the population not completing their schooling remains high. While poor access to education, specifically higher education, this is not unique to the Mkhambathini LM, Umgungundlovu DM and KZN have experienced similar trends, the education levels within the Mkhambathini LM remain below the district, provincial and national levels (Table 3).

Poor education is seen to be a major stumbling block in the road to social and economic development. An educated population, especially in the age group 20 and older, their employability, labour participation and development can improve and so ultimately improve their and the country's economic status (Mkhambathini SDF, 2014).

Table 3 Education indicators (Stats SA, 2011)

Area	No School (%)		Some Schooling (%)		Grade 12 (%)		Tertiary Education (%)	
	2001	2011	2001	2011	2001	2011	2001	2011
Mkhambathini LM	29.4	18.7	58.5	55.7	9.4	20.6	2.7	5.0
uMgungundlovu DM	16.9	8.5	55.7	50.4	19.8	30.1	7.6	11.0
KwaZulu-Natal	21.9	10.7	51.6	49.2	19.6	31.1	6.9	9.0
South Africa	17.9	8.6	53.3	51.0	20.4	28.7	8.4	11.7

7.3 Economic sectors

Community Services are the biggest contributor to both the local economy and employment in the Mkhambathini LM and while growth in employment numbers are being seen in this sector reliance on community services suggests that government is a significant employer in the LM and which allows little room for independent economic growth (Mkhambathini IDP, 2014/2015). Agriculture, while experiencing a decline in its contribution to employment and the local economy, remains of vital importance and is the second biggest economic sector in the LM. The agricultural sector is based around sugarcane farming, forestry and in particular the poultry sector. The region has the second highest concentration of poultry producers in the world, and is also responsible for the employment of a network of service providers. Pig, beef and vegetable farming are also undertaken within the municipality, albeit on a far smaller scale. Other significant contributors to the local economy and employment include the manufacturing and finance sectors. (Mkhambathini IDP, 2014/2015).

7.4 Employment

Unemployment in the Mkhambathini LM decreased from 24.3% in 2001 to 12.1% in 2011, below both the provincial (15.2%) and district (15.6%) levels (StatsSA, 2012a). It should be noted however that reduced unemployment does not necessarily imply an improvement in formal employment. This is the case in the Mkhambathini LM where over the same time period the percentage of the population reporting formal employment also decreased from 31.3% in 2001 to 28.9% in 2011 (StatsSA, 2012a). These figures show that while unemployment may be relatively low within the local municipality there is a high percentage (59%) of non-economically active people which implies a high level of dependency within the municipality.

The percentage of the population within Mkhambathini LM that are non-economically active is higher than that for the DM and province as a whole. In addition, while the DM and province experienced an increase in the percentage of the population between 15 and 64 reporting to be formally employed, the Mkhambathini LM experienced a decrease. These figures are displayed in Table 4.

Table 4 Official unemployment rates (StatsSA, 2001 & 2011)

Area	Unemployment		Employment		Non-economically active	
	2001	2011	2001	2011	2001	2011
Mkhambathini LM	24.3%	12.1%	31.3%	28.9%	44.4%	59.0%
UMgungundlovu DM	28.6%	15.6%	33.1%	35.3%	38.3%	49.1%
KwaZulu-Natal	26.6%	15.2%	27.7%	30.5%	45.7%	54.3%

7.5 Access to basic services

7.5.1 Access to piped water

Access to piped water within the Mkhambathini LM is below levels reported for both the DM and the province. In the Mkhambathini LM, 34.0% of households reported no access to piped water, while 8.9% and 14.0% reported no access in the uMgungundlovu DM and KZN Province, respectively (StatsSA, 2012b). Even though there has been an increase in the

access to piped water in dwellings at the local level, the rate at which it is occurring is almost half of the rate experienced at provincial level. Table 5 provides details of changes in the level of access within the local and district municipalities and the province between 2001 and 2011.

Table 5 Access to piped water (%) (StatsSA, 2001 & 2011)

Area	Piped water inside dwelling/yard		Piped water at communal stand		No access to piped water	
	2001	2011	2001	2011	2001	2011
Mkhambathini LM	45.6	52.9	13.1	13.5	41.3	33.6
UMgungundlovu DM	63.5	78.3	20.8	12.8	15.7	8.9
KwaZulu-Natal	48.7	63.6	23.8	22.4	27.5	14.0

7.5.2 Access to sanitation

Access to sanitation within the Mkhambathini LM is worse than the overall levels experienced by households within the uMgungundlovu DM and KZN. It is of particular concern that access to flush or chemical toilets in the LM in 2011 is reported to have decreased since 2001. Despite improvements in the percentage of households reporting no access to sanitation, the percentage of the population without access to sanitation still remains above the district and provincial averages. The improvement in access has seemingly been due to an increase in households with pit latrines. The use of pit latrines is likely due to the rural location of the settlements in the local municipality making the provision of services to more remote and unplanned areas difficult. The Mkhambathini IDP (2014/2015) indicates that approximately 25% of households have owner-built pit latrines, which in most cases do not meet the health regulations. Overall access to sanitation is detailed in Table 6.

Table 6 Access to sanitation (%) (StatsSA, 2001 & 2011)

Area	Access to flush or chemical toilets (%)		Pit Latrines (%)		Bucket System (%)		None (%)	
	2001	2011	2001	2011	2001	2011	2001	2011
Mkhambathini LM	31.1	21.3	47.6	70.4	0.8	0.6	20.5	7.7
UMgungundlovu DM	49.9	56.1	43.2	39.8	1.1	0.9	5.8	3.2
KwaZulu-Natal	46.1	55.3	36.7	36.4	1.2	1.8	16.0	6.5

7.5.3 Access to electricity

The households within the Mkhambathini LM are reported to experience significantly less access to electricity than generally experienced in the uMgungundlovu DM and the KZN Province. The number of households that have access to electricity has improved at all levels, with the most drastic reported improvement being within the local municipality from 42.5% in 2001 to 65.2% in 2011 (StatsSA, 2012b). Details of improvements in access to electricity for lighting are detailed in Table 7.

Table 7 Access to electricity for lighting (StatsSA, 2001 & 2011)

Area	Access to Electricity for lighting (%)	
	2001	2011
Mkhambathini LM	42.5	65.2
UMgungundlovu DM	74.1	86.1
KwaZulu-Natal	60.1	77.9

7.6 Access to healthcare

Mkhambathini LM is poorly supplied in terms of access to healthcare with four fixed clinics, a mobile clinic that operates once a month and no hospitals. The lack of access to health care is likely due to the rural nature of the municipality. The four fixed clinics are found in wards 1, 2, 5 and 7; which are the more densely populated areas. Based on the statistics taken from the four clinics in the Mkhambathini LM, it has been estimated that the HIV infection rate is 24% (Mkhambathini IDP, 2014/2015).

7.7 Summary

From the aforementioned information, it is evident that there are numerous social and economic challenges being faced within the broader project area. While unemployment levels are lower than those experienced by the district and province, a large percentage of the population between the ages of 15 and 64 are economically inactive, while the economic base of the local municipality is heavily reliant on the agricultural sector. However despite this there has been a general increase in the average household income for the population. Access to education in the municipality has seen an improvement with a smaller percentage of the population reporting no access. However, levels remain below the district and provincial average while the percentage of the population completing Grade 12 levels and accessing tertiary education is poor. The lack of access to higher levels of education are seen to be a significant barrier to further economic development in the LM. Access to services (water, sanitation and electricity) has seen improvement however levels are again below the district and provincial averages.

8 SOCIAL CHANGE PROCESSES

“Social change processes are set in motion by project activities or policies. Depending on the characteristics of the local social setting and mitigation processes that are put in place, social change processes can lead to social impacts” (Vanclay, 2003).

This section of the report aims to provide insight into social change processes that are likely to occur as a result of the proposed Isundu Sub-station and the associated power lines. The social change processes identified in the following sections are based on an indicative list of processes described by Van Schooten *et al.*, (2003); however, only the social processes relevant to this study have been included. It should be noted that the social change processes discussed below are not social impacts themselves but, in the event of these social change processes taking place, social impacts may occur. The social impacts which are likely to occur as a result of social change processes are detailed in Section 8.2.

Social change processes have been identified as occurring in three different categories:

- Social change processes originating during planning and pre-construction.
- Social change processes expected during construction.
- Social change processes expected during operations.

The phase at which a social change process is likely to occur is assessed in a table at the end of each section.

8.1.1 Demographic processes

Demographic processes relate to the movement and composition of people in the region affected by the proposed project.

8.1.1.1 In-migration

According to the World Bank, the induced population increase associated with a development initiative is estimated to equal the number of people employed on the project (World Bank, 2001). The movement of people can be associated with job seekers moving into an area in search of both direct and indirect economic opportunities created by the proposed development as well employees moving into the area for the proposed development. In order to predict the possible in-migration of people to an area, the geographical location, social and socio-economic conditions of the surrounding areas and the nature of the development need to be taken into account.

In the case of the proposed project, the location close to a major transport route as well as its relative close proximity to rural areas characterised by high levels of unemployment, will likely result in in-migration of unskilled job seekers to the area while there will also be the movement of contracted employees into the area for the duration of the project.

In the case of job seekers moving into the area, it is likely, considering the proximity to major transport routes and urban centres, that the movement will be transient in nature with job seekers moving on to the next area or alternatively returning home in the event of not finding employment. The process of people moving into the project area, albeit in a transient manner, may result in various social impacts, including but not limited to increased criminal activities, increased spread of disease, and pressure on existing infrastructure and services.

Table 8 Project phase at which demographic processes are relevant

Process	Phase at which demographic processes are relevant		
	Prior to construction	Construction	Operation
In-migration	x	✓	x

8.1.2 Economic processes

Economic processes are those processes that affect the economic activity in a given area. This includes the way people make a living, employment rates as well as macro-economic factors which affect society as a whole (Van Schooten *et al.*, 2003). The following economic processes may be altered as a result of the proposed project.

8.1.2.1 Waged labour

During construction it is likely that there will be changes to the existing waged labour processes in the area. Changes in the waged labour processes may result in social impacts occurring such as increased employment opportunities (it has been estimated that in the region of 80 people will be employed on site at any one time during the construction process) or alternatively job losses as a result of the proposed project affecting other economic activities in the area. Both of these direct social impacts will have secondary impacts.

Table 9 Phases at which economic process are relevant

Process	Phase at which demographic processes are relevant		
	Prior to construction	Construction	Operation
Waged labour	x	✓	✓

8.1.3 Socio-cultural processes

Socio-cultural processes are those that affect the culture of a society, including all aspects of the way that people live together (Van Schooten *et al.*, 2003).

8.1.3.1 Deviant social behaviour

The movement of construction workers and job seekers into the project area and surrounding communities, coupled with an increase in expendable income, may lead to an increase in deviant social behaviour. Possible deviant social behaviour includes prostitution, excessive alcohol consumption, illegal drug use and other types of risk taking. All of these types of behaviour may result in social impacts such as an increase in the spread of disease, unwanted pregnancies, and increased criminal activity.

Table 10 Phases at which socio-cultural processes are relevant

Process	Phase at which demographic processes are relevant		
	Prior to construction	Construction	Operation
Deviant social behaviour	x	✓	x

8.1.4 Geographical Processes

Geographical processes are those that affect the land use patterns of a society (Van Schooten *et al.*, 2003).

8.1.4.1 Conversion and Diversification of land use

The conversion and diversification of land use refers to the way land is utilised, the intensity of utilisation of land and the type of land use activities and the pattern or mix of those activities (Van Schooten *et al.*, 2003). In the case of the proposed project, the site will be converted from open grassland, which is currently being used for grazing and the sale of hay, to the land being used for the housing of electrical infrastructure. This conversion in use may impact the sense of place of the area and may lead to social impacts, particularly for surrounding land owners currently or planning to use their land for tourism and lifestyle purposes.

Table 11 Phases at which geographical processes are relevant

Process	Phase at which demographic processes are relevant		
	Prior to construction	Construction	Operation
Conversion and Diversification of land use	x	✓	✓

9 SOCIAL IMPACTS

9.1 Preconstruction and construction phase

The purpose of this section is to identify anticipated social impacts that may occur during the preconstruction and construction phase of the project as a result of the social change processes identified in Section 8.1. Social impacts can be positive or negative and occur within the context of human behaviour, which is often unpredictable, varying according to cultures, traditions, political and religious beliefs, and which are influenced by perceptions. It should be noted that all of the social impacts identified and discussed below apply to the project in its entirety and are inclusive of all infrastructure and possible alternatives unless otherwise specifically stated.

9.1.1 Health and social wellbeing

9.1.1.1 Increased spread of disease

Any development which causes the migration of people has the potential to lead to the spread of disease; in particular, HIV and AIDS in the case of South Africa. Research suggests that the presence of migrant construction workers leads to an increase in activities such as prostitution. In addition promiscuity is often associated with groupings of construction workers. This could lead to scenarios where infected construction workers coming into the area spread the disease through unprotected intercourse with sex trade workers or local individuals, who, in turn, spread it locally. Alternatively, an uninfected construction worker could become infected through unprotected intercourse and, on return to his/her place of origin spread the disease.

An increase in the spread of diseases and, in particular, HIV and AIDS, is also likely to be caused by the movement of trucks carrying construction materials in and out of the project site. Research suggests that the areas with the highest prevalence of HIV and AIDS are situated adjacent to the major transport routes due largely to transmission between sex workers and truck drivers (<http://www.nra.co.za>). While it has not been confirmed where the required construction materials will be sourced, it is likely that they will be transported via truck along the N3. While almost impossible to quantify, research suggests that the movement of the trucks associated with the proposed project will lead to the spread of disease, in particular, HIV and AIDS. However, in comparison to the large volume of trucks which already make use of existing road networks close to the project site, in particular the N3, the increase in trucks associated with the proposed project will be relatively insignificant. In light of this, it is not anticipated that there will be a noticeable increase or change in the HIV and AIDS infection rate as a direct result of trucks associated with the proposed project.

While it is anticipated that the majority of unskilled labour will be sourced from the surrounding communities skilled labour is likely to be sourced from outside the immediate area or alternatively brought into the area by the appointed contractors. In addition, as noted in Section 8.1.1.1, although not significant it is anticipated that there is likely to be a small influx of job seekers into the project area as well.

The potential always exists that the movement of people into a project area is likely to increase the spread of disease, in particular HIV and AIDS. However, in the case of the proposed project it is thought that construction workers moving into the area are at greater risk than the population currently residing in the area. This is based on the understanding that the number of construction workers moving into the area will not be significant in relation to

the receiving population and the fact that the area cannot be considered isolated and is already believed to exhibit relatively high HIV and AIDS infection rates.

9.1.2 Quality of the living environment

9.1.2.1 Increased criminal activity

During construction, there will be numerous people moving through the area including Eskom employees, employees of the appointed contractors, job seekers and potential criminal opportunists. The presence of a large number of people moving freely on private property in the study area increases the likelihood of criminal activity. Of particular concern is the poaching of wild animals. Poaching has already been identified by key stakeholders as occurring in the project area and of particular concern considering the vicinity of the proposed project in relation to the Mayibuye Game Reserve and other conservation areas surrounding the proposed site. It should be noted that the Eskom and contractor employees are not seen as the security threat but rather the criminal opportunists moving through the area who are likely to have easy access to areas where they wouldn't otherwise.

9.1.2.2 Increased dust

During construction of the proposed sub-station, large areas of soil will be exposed which will lead to increase dust during times of strong winds. In addition, the presence of construction vehicles and construction equipment will also lead to an increase in dust. The presence of increased dust may be a nuisance impact for people residing in and businesses located in the vicinity of the project. Of particular concern is the impact that the increased dust may have on Rainbow Farms, the Natal Zoo and the Sanctuary all of which have breeding programs in place for birds. These impacts have been considered in a separate Air Quality/Dust Specialist Study and it is believed that with suitable mitigation and good construction site practices it will be possible to reduce the impact of dust during construction to an acceptable level.

9.1.2.3 Reduced road safety

The presence of construction vehicles and heavy duty trucks transporting the required infrastructure for the sub-station and transmission lines is likely to reduce road safety. While it is anticipated that the impact will be negligible on the N3 due to the existing high levels of traffic, access roads such as the P477 between the Lynnfield Park off ramp and the proposed project site are of concern. In addition access roads to the transmission line corridor, which are likely to be in worse condition, are also of concern. The presence of construction vehicles as well as heavy duty trucks will reduce road safety for other road users including local residents, employees of local businesses such as Rainbow Farms and people making use of tourism activities such as the Lion Park, the Sanctuary and the Natal Zoo. It should be noted that reduced road safety is of concern for motor vehicles users as well as pedestrians and cyclists.

9.1.2.4 Increased pressure on existing infrastructure and services

The increase in vehicle traffic, in particular heavy duty vehicles, as a result of the construction process will lead to increased pressure on existing road infrastructure and the likely deterioration of the road quality. The P477 between the Lynnfield Park off ramp and the Natal Lion Park is the main concern and area of impact. A reduction in road quality will result in reduced road safety for road users (*Section 8.2.2.3*) and have financial implications for the

responsible authority (the Mkhambathini LM). In addition a reduction in the quality of the roads may become a deterrent for people wishing to access existing tourism activities in the area.

9.1.2.5 Increased danger of fire

During construction there is likely to be an increase in the likelihood of uncontrolled, accidental veld fires. The increased risk of fire may result from exposed fires for cooking and warmth, cigarettes, burning of fire breaks, etc. The proposed project area is located on Hinterland Thornveld which falls in to the Savannah Biome, which can be easily burnt (SANBI, 2015). This is especially the case during the dry winter months when there is likely to be an increased threat of uncontrolled fires. The proposed sub-station is surrounded by a number of Rainbow Farms (chicken houses), tourist activities and conservation areas that will negatively impacted upon, should an uncontrolled fire occur.

9.1.2.6 Aesthetic impacts

During construction areas previously covered with natural vegetation will be cleared which is likely to reduce the aesthetic appeal of the area. These areas will become characterised by equipment associated with a construction site, including but not limited to earth moving equipment, construction vehicles, construction materials, large steel structures, security lighting at night, etc. Receptors most likely to be impacted by a reduced aesthetic appeal and the resultant change in sense of place will be local residents, surrounding enterprises as well as people travelling on the P477. While the timeframes for the construction of the proposed sub-station have not be confirmed, in the event of the Mayibuye Game Reserve being in operation when construction of the proposed project commences, it is likely that the presence of a construction site will negatively affect the visual appeal of the area for visitors. The same applies to residents of the Wild Aloe Aero Estate, who, in the event of the estate being developed, may have their view negatively affected during the construction process. It should however be noted that on route to the Mayibuye Game Reserve, the proposed Wild Aloe Aero Estate and other tourist establishments in the area, the route is characterised by a transformed environment (chicken houses and transmission lines) and cannot be considered a pristine area. Concerns have been raised by various parties including the local municipality that the visual impacts of the sub-station and associated transmission lines may affect the viability of existing and planned tourism developments in the area. However, a visual impact assessment which was conducted as part of the EIA, suggests that with suitable mitigation the impacts should be reduced to a negligible level and thus have little impact.

9.1.2.7 Increased noise

At present the area can be described as being generally very quiet and exhibiting a rural/agricultural character (Jongens Keet Associates, 2015). During the construction process the project area and immediate surrounds are likely to experience an increase in noise associated with a construction site. Noise is likely to be generated by construction machinery such as excavation equipment, jackhammers, vehicle reverse alarms, blasting, etc. as well as heavy duty trucks delivering materials.

Likely sensitive receptors include adjacent land owners, local residents and business owners. Of particular concern is the possible impact on the Mayibuye Game Reserve (in the event of the reserve being in operation when construction commences) and Rainbow Farms. In the case of the Mayibuye Estate an increase in noise associated with a construction site is likely to impact on the sense of place and thus detract from the experience which visitors would

expect. This concern has been noted in the noise impact assessment report undertaken as part of the EIA. In the case of Rainbow Farms, it has been reported that the chickens are sensitive to disturbances with one of the criteria for the location of laying farms being isolation from activities that generate noise (Metamorphosis, 2015). However findings from the specialist noise impact assessment note that there is not anticipated to be a significant impact on Rainbow Farms operations as a direct result of the construction activities (Jongens Keet Associates, 2015).

9.1.3 Economic impacts and material wellbeing

9.1.3.1 Permanent loss of private land and housing

As a result of the sub-station being constructed there will be a loss of privately owned land as well as the house and associated infrastructure on the land. While it is understood that the landowner is not opposed to the sale of the land there is currently a tenant living on the land who will lose access to his existing place of residence. In addition much of the land is currently grazed by zebra and antelope. The loss of the land as a result of the construction of the proposed sub-station may necessitate the removal and relocation of these animals.

9.1.3.2 Increased employment opportunities

As a result of the proposed project there will be both direct and indirect employment opportunities created during construction. The Scoping Report states that there will be approximately 80 people working on the site at any one time during construction, with most of the positions requiring specialised skills. Limited positions will be available for unskilled workers (the exact number of positions likely to be created has not been confirmed). While only a limited number of temporary jobs are likely to be created for people from the surrounding community. It needs to be considered that with the high levels of unemployment currently existing in the LM, any formal employment opportunities should be seen as positive. In addition the increase in employed people in the area, be they skilled or unskilled, will also increase the amount of disposable income which may have indirect positive impacts for other local businesses.

9.1.3.3 Increased opportunities for SMEs

During construction, there will be various opportunities created for local SMEs providing various goods and services such as road construction and maintenance, security, accommodation, catering, training, etc. Such opportunities will have knock-on effects which will lead to secondary impacts, such as increased employment opportunities and more disposable income.

9.1.3.4 Reduced property values

It is a common perception that as a result of the proposed sub-station and associated transmission lines, it is possible that the property values in the surrounding area may decrease. This is a concern raised by the developer of the proposed Wild Aloe Aero Estate. At present, sections of the property overlook open land used for grazing. In the event of the proposed sub-station going ahead this section of the property will overlook a construction site and ultimately a sub-station and transmission lines.

In addition, in the event of the transmission lines being routed through the proposed Wild Aloe Aero Estate, sections on the land will become 'sterilised', which would thus limit further development. However, this alignment was agreed to previously by the developer during the VSHA study when the proposed development (called Kingsthorpe Estate at the time) was smaller, but not taken into account during the current planning. With the development of the sub-station the landowner may decide to re-evaluate his development plans.

9.2 Operational phase

The following section identifies the social impacts the proposed project is likely to have during its operational phase.

9.2.1 Quality of the living environment

9.2.1.1 Aesthetic impacts

While some electrical infrastructure already exists in the area, the presence of a 60 ha sub-station is likely to alter the current aesthetics of the area. The proposed location of the Isundu Sub-station is in a rural area that is characterised by open grassland, conservation areas and poultry farming. The proposed project site is currently zoned in the municipal spatial development framework as agricultural and tourism.

Concerns have been raised by the local municipality and surrounding landowners that the visual impact of the proposed sub-station and associated transmission lines will affect the sense of place of the area and thus the viability of existing and proposed tourism activities in the area. In this regard the Mayibuye Game Reserve is of particular concern as the planned entrance to the reserve is directly across the road from the proposed sub-station site. While it is likely that the presence of the sub-station will have a visual impact on visitors to the reserve, two factors need to be considered.

Firstly, on approaching the reserve, visitors will already be driving through a transformed area characterised by the Rainbow Chicken houses, and secondly on turning into the reserve the proposed sub-station site will be behind the visitors and visitors will have views across the valley, and the sub-station will not be visible. Findings from the visual impact assessment which was conducted as part of the EIA suggests that with suitable mitigation the visual impacts associated with the proposed development can be reduced to a low level for all of the sensitive receptors.

9.2.1.2 Increased noise

During the operational phase of the proposed project it is anticipated that there may be an increase in noise created by the sub-station. It is understood that the biggest emitter of noise from the sub-station will be from the transformers, in particular the cooling fans. A specialist noise impact assessment has been conducted as part of the EIA, and has concluded that it is not anticipated that there will be significant impacts as a result of the increase in noise.

9.2.2 Economic impacts and material wellbeing

9.2.2.1 Increased opportunities for SMEs

During the operational phase of the project, various services will be required including the clearing of servitudes and road maintenance. There is potential that such activities could be

conducted by locally based subcontractors. Measures should be taken by Eskom to ensure that, wherever possible, local subcontractors are appointed. The appointment of locally based subcontractors will help with employment creation for local people.

9.2.2.2 Damage to private properties

During the operational phase of the project, Eskom employees and/or subcontractors will be required to access the 400 kV and 765 kV transmission line servitudes for maintenance purposes. During this time it is possible that damages may occur to private properties through which the servitudes run. Damages may include discarded materials or refuse being left on the property, potential fire (section 8.3.1.1), damage to natural bush, or the leaving open of cattle gates. In the event of damages occurring there may be financial implications for the affected land owners while there is also likely to be an increased animosity towards Eskom staff and contractors.

9.2.2.3 Restrictions to future development

The presence of the proposed sub-station and transmission lines may curtail future development plans for the tourism industry in the area, of particular concern is the Mayibuye Game Reserve. During discussions with representatives from the reserve it emerged that there are plans to extend the existing planned reserve. The presence of a sub-station in the proposed location is likely to limit this expansion and limit the ability to create corridors between the Mayibuye Game Reserve and other conservation areas.

9.2.2.4 Loss of Income

The Sanctuary relies on funding from outside sources and on flying displays to generate the income to undertake the other functions – such as rescue, rehabilitation of injured birds, breeding, and awareness through education – which the Sanctuary provides. The presence of the proposed sub-station and transmission lines may compromise this income. This could be through the loss of funding, as investors may no longer agree that the Sanctuary can accomplish its goals due to the changes to the surrounding area as well as the inability of the Sanctuary to conduct flying displays due to the presence of additional transmission lines. Other losses of income could be incurred by the Natal Lion Park and Natal Zoo with the presence of the sub-station and transmission lines negatively affecting the experience people have at these centres and over time reducing the flow of tourists to these areas.

9.3 Cumulative impacts

The presence of additional future transmission lines, over and above those covered by the current EIA, is likely to further affect the aesthetic nature of the area and transform the sense of place. Of particular concern is the impact that additional transmission lines may have on the Mayibuye Game Reserve and their planned expansion as well as the other tourism activities in the area.

However, the routes for the planned Isundu-Mbewu 2x400 kV transmission lines have not been planned and can conceivably also avoid the Mayibuye Game Reserve. It should be noted that the areas to the northeast are more densely populated and thus routing transmission lines through these areas may prove difficult.

Furthermore, it needs to be considered that the planned tourism projects in the area, in particular the Mayibuye Game Reserve, are potentially a major source of sustainable employment in an area characterised by high unemployment and poor levels of development. If the viability of these projects is negatively affected, possible employment opportunities will not come to fruition. While various factors may influence the viability of a project of this nature, the cumulative impact of the sub-station and planned and future transmission lines would undoubtedly have a negative contribution to the aesthetics and tourism potential of the area.

9.4 Decommissioning

Although it is considered unlikely that Eskom will decommission the proposed infrastructure in the medium- to long-term, decommissioning activities will be accompanied by potential social impacts. Potential positive impacts are considered likely to be of a similar nature to those during construction, for example, job creation and local economic stimulation. Similarly, some negative impacts, for example, the spread of disease, especially sexually transmitted diseases such as HIV and AIDS, are also likely to occur. In contrast, some negative impacts are likely to be reversed, for example, visual affects, and the effects of electromagnetic fields. However, considering decommissioning is unlikely to take place in the medium- to long-term the assessment of social impacts will need to be undertaken at the time in accordance with prevailing legislation.

10 IMPACT ASSESSMENT AND MITIGATION

10.1 Social impacts during construction

An assessment of anticipated social impacts during construction, without and with mitigation, is provided in Table 12.

Table 12 Assessment of social impacts during construction

Impact	Mitigated /Managed	Nature	Spatial Extent	Duration	Intensity	Frequency	Probability	Irreplaceability	Reversibility	Significance	Confidence
Increased spread of disease	Unmitigated	Negative	Regional	Short term	Medium	Once off	Definite	N/A	Moderate	Medium	High
	Mitigated	Negative	Regional	Short term	Low	Once off	Highly Probable	N/A	High	Low	Medium
Increased criminal activity	Unmitigated	Negative	Regional	Short term	Medium	Periodic	Highly Probable	N/A	High	Medium	High
	Mitigated	Negative	Local	Short term	Low	Intermittent	Probable	N/A	High	Low	High
Increased dust	Unmitigated	Negative	Regional	Short term	Medium	Intermittent	Highly Probable	N/A	High	Medium	High
	Mitigated	Negative	Local	Short term	Low	Once off	Probable	N/A	High	Low	High
Reduced road safety	Unmitigated	Negative	Regional	Short term	High	Periodic	Highly Probable	N/A	High	Medium	High
	Mitigated	Negative	Local	Short term	Medium	Periodic	Probable	N/A	High	Low	Medium
Increased pressure on existing infrastructure and services	Unmitigated	Negative	Local	Short term	Medium	Intermittent	Highly Probable	N/A	Moderate	Medium	Medium
	Mitigated	Negative	Local	Short term	Low	Intermittent	Probable	N/A	High	Low	Medium
Increased danger of fire	Unmitigated	Negative	Regional	Short term	Medium	Continuous	Highly Probable	Moderate	High	Medium	Medium
	Mitigated	Negative	Local	Short term	Low	Periodic	Probable	Moderate	High	Low	Medium
Aesthetic impacts	Unmitigated	Negative	Regional	Permanent	High	Continuous	Definite	Low/Moderate	Low	High	High
	Mitigated	Negative	Local	Long term	Medium	Continuous	Definite	Low	Medium	Low	Medium
Increased noise	Unmitigated	Negative	Local	Permanent	Medium	Continuous	Definite	Moderate	High	Medium	High
	Mitigated	Negative	Local	Long term	Low	Intermittent	Definite	Low	High	Low	Medium
Permanent loss of private land and housing	Unmitigated	Negative	Local	Permanent	Medium	Once off	Definite	High	Non-reversible	Low	High
	Mitigated	Negative	Local	Permanent	Medium	Once off	Definite	High	Non-reversible	Low	High
Increased employment opportunities	Unmanaged	Positive	Local	Short term	Low	Once off	Probable	N/A	High	Low	Medium
	Managed	Positive	Local	Long-term	Medium	Once off	Highly Probable	N/A	High	Medium	Medium
Increased opportunities for local SMEs	Unmanaged	Positive	Local	Short term	Low	Once off	Probable	N/A	High	Low	Medium
	Managed	Positive	Local	Long-term	Medium	Continuous	Highly Probable	N/A	High	Medium	Medium
Reduced property values	Unmitigated	Negative	Local	Permanent	High	Once off	Highly Probable	Low	Low	Medium	Medium
	Mitigated	Negative	Local	Permanent	High	Once off	Highly Probable	Low	Low	Medium	Medium

10.1 Mitigation and management of social impacts during preconstruction and construction**10.1.1 Increased spread in disease**

- All construction staff should go through an HIV and AIDS education awareness course as part of the project induction.
- Education material regarding general hygiene, HIV and AIDS and sexually transmitted diseases should be easily available.
- Condoms should be easily available.

10.1.2 Increased criminal activity

- All Eskom employees and subcontractors should be easily identifiable.
- Affected land owners should be consulted well in advance prior to anyone entering their land.
- Any Eskom employee or contractor found to be breaking the law should be dismissed immediately.
- Security personal should be employed on the construction sites.
- Access to farms where construction is taking place should be controlled.

10.1.3 Increased dust

- Dust on the construction sites should be controlled by means of water spray vehicles.
- Dust on access roads should be controlled by means of water spray vehicles, especially prior to movement of heavy duty or haulage vehicles.
- Farmers should be consulted on a case by case basis to discuss likely impacts and to determine if preventative measures are required.

10.1.4 Reduced road safety

- Include a traffic management section within the EMP, including maximum speed limits dependent on the type of vehicle.
- Ensure that the road is maintained in a good condition at all times.
- All drivers should be briefed regarding the traffic management plan.
- Eskom employees and/or Eskom contractors should face disciplinary action if caught violating the traffic management plan.

10.1.5 Increased pressure on existing infrastructure and services

- Eskom are to ensure that all roads are left in the same or better condition than they were in prior to construction commencing.

10.1.6 Increased danger of fire

- No open fires should be allowed on site.
- Firefighting equipment should be available on all construction sites and in all construction vehicles.
- Smoking should only be allowed in designated areas.

10.1.7 Aesthetic impact

- Implement mitigation measures proposed by the visual specialist.

10.1.8 Increased noise

- Avoid construction after daylight hours.
 - Advanced warning should be provided to landowners prior to any blasting taking place.
 - Implement mitigation measures proposed by the noise specialist.
-

10.1.9 Permanent loss of private land and housing

- Compensation should be paid to the affected landowner in accordance with recognised land evaluation and legislated norms.

10.1.10 Increased employment opportunities

- Consult with local government and community organisations regarding the hiring of local labour.
- Employ a community liaison officer to assist in the communication between the local communities and the project proponent.

10.1.11 Increased opportunities for SMEs

- Identify which services could be supplied by local SMEs and contractors.
- In consultation with local government and community organisation, identify SMEs and contractors who could supply the required services.
- Endeavour to employ local contractors and SMEs as far as is feasibly possible.

10.1.12 Reduced property values

- No mitigation measures are possible.

10.2 Social impacts during operation

An assessment of social impacts during operation, without and with mitigation, is provided in Table 13

Table 13 Assessment of social impacts during operation

Impact	Mitigated /Managed	Nature	Spatial Extent	Duration	Intensity	Frequency	Probability	Irreplaceability	Reversibility	Significance	Confidence
Aesthetic impact	Unmitigated	Negative	Local	Long-term	Medium	Continuous	Definite	Moderate	High	High	Medium
	Mitigated	Negative	Local	Long-term	Low	Continuous	Definite	Moderate	High	Low	Medium
Increased noise	Unmitigated	Negative	Local	Permanent	Medium	Continuous	Definite	N/A	Low	High	High
	Mitigated	Negative	Local	Short term	Low	Periodic	Probable	N/A	Medium	Medium	Medium
Increased opportunities for SMEs	Unmanaged	Positive	Local	Short-term	Low	Once off	Improbable	N/A	High	Medium	Medium
	Managed	Positive	Local	Long-term	Medium	Continuous	Probable	N/A	High	Medium	Medium
Damage to private land	Unmitigated	Negative	Local	Permanent	High	Intermittent	Highly Probable	Moderate	Low	Medium	Medium
	Mitigated	Negative	Local	Long term	Medium	Once off	Probable	Moderate	Low	Low	Medium
Restrictions to developments	Unmitigated	Negative	Regional	Permanent	High	Continuous	Highly Probable	Moderate	Low	High	Medium
	Mitigated	Negative	Local	Long term	Medium	Continuous	Probable	Moderate	Low	Medium	Medium
Loss of income	Unmitigated	Negative	Local	Long term	Medium	Continuous	Definite	High	Non-reversible	Medium	High
	Mitigated	Negative	Local	Short term	Low	Once off	Definite	High	Non-reversible	Medium	High

10.3 Mitigation and management of social impacts during operation

10.3.1 Aesthetic impacts

- Ensure that all components of the project which may be visible are designed in such a manner so as to reduce the visual impact.
- Where possible use trees and natural bush along property boundaries to screen the sub-station.
- Implement mitigation measures proposed by the visual specialist.

10.3.2 Increased noise

- Ensure that sound proofing is installed on all components of the project likely to make a significant noise.
- Implement mitigation measures proposed by the noise specialist.

10.3.3 Increased opportunities for SMEs

- Identify and develop a database of all local SMEs which provide the identified services.
- Ensure that, as far as possible, Eskom and its subcontractors employ local SMEs.

10.3.4 Damage to private land

- Prior to entering private land, Eskom employees and all Eskom subcontractors are to ensure that land owners are informed.
- Eskom employees and Eskom subcontractors are to inform landowners as to where they will be working, when they will be working in the area and for what time period.
- All Eskom employees and Eskom subcontractors are to remain on existing access roads and within existing servitudes.
- Eskom should be held accountable for any damages incurred to the property of landowners during site visits or maintenance.
- Any Eskom employees or Eskom subcontractors seen to be damaging privately owned land should be suitable disciplined.

10.3.5 Restrictions to future developments

- It is not believed that mitigation is possible.

11 CONCLUSIONS AND RECOMMENDATIONS

No fatal flaws were identified from a social perspective for the proposed Isundu Sub-station and turn-in transmission lines. There are, however, various impacts of a medium significance that are likely to occur both as a direct or indirect result of the proposed sub-station and transmission lines. Of greatest concern is the manner in which the proposed project will affect the sense of place of the area through visual and noise impacts. During both the construction and operation phases of the proposed project, it is likely that the aesthetic nature of the area will be transformed while there is a perception that there could also be a significant increase in noise. This is of specific concern as many of the existing enterprises and planned enterprises in the immediate area are tourism based and are, therefore, reliant on the existing sense of place and rural nature of the area for their product. It has, however, been concluded, following the findings of the visual and noise impact assessments, that with suitable mitigation measures these impacts can be reduced to a level which should not have a significant impact on the sense of place of the area. As such, it is recommended that the findings from the visual and noise impact assessments be considered and the mitigation measures implemented so as to ensure that the sense of place of the area is not significantly impacted.

Recognising existing Eskom protocols for all of its construction and operational activities, other recommendations relating to the social environment include:

Criminal activity. While the significance of this impact is not considered high during construction, if not mitigated it may lead to dissatisfaction among local residents with potential negative implications for the success of the project. During the construction process, the possibility of crime escalating, especially poaching, in the study area is a concern. Eskom must liaise with the surrounding landowners and a protocol for gaining access to private land should be established and distributed to all parties involved. The impact of possible careless conduct by contractors must be acknowledged and the contractors should receive induction in terms of the relevant codes of conduct to which they should adhere. Construction teams should be clearly identified by wearing uniforms or identification cards that should be exhibited in a visible place on their body. Should any staff be caught in criminal activities of any kind, they should face instant dismissal and prosecution. The possibility of criminal opportunists moving through the area should also not be ignored and local police and community policing forums should be informed of this.

Employment. The study area is characterised by high levels of unemployment, particularly in the rural communities. As such, it is recommended that Eskom be required to source as much local labour as possible during the construction process in order to maximise potential positive impacts during construction.

SMEs. As is the case with employment, the proposed project has the potential to generate opportunities for locally based SMEs. It is recommended that, in conjunction with the local and district municipalities, a database be developed with details of services provided by local companies. As far as feasibly possible, Eskom should be required to make use of local service providers able to provide the required services during construction and operation processes.

Nuisance Disturbances. During the construction and operational phases of the proposed project, there should be measures put in place to prevent nuisance disturbances from

impacting the surrounding enterprises. These nuisance disturbances include, noise, light, dust and fire (with fire also constituting an emergency).

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