environmental affairs

Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

DETAILS OF SPECIALIST AND DECLARATION OF INTEREST

	(For official use only)
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Application for integrated environmental authorisation and waste management licence in terms of the-

(1) National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended and the Environmental Impact Assessment Regulations, 2010; and

(2) National Environmental Management Act: Waste Act, 2008 (Act No. 59 of 2008) and Government Notice 718, 2009

PROJECT TITLE

Proposed 30-year Ash Disposal Facility at Kendal Power Station, Mpumalanga

Specialist:	Equispectives Research and Consulting Services		
Contact person:	San-Marie Aucamp		
Postal address:	PO Box 11019, Erasmuskloof, PRETORIA		
Postal code:	0048	Cell:	082 923 9687
Telephone:	N/A	Fax:	086 689 8875
E-mail:	sanmarie@equispectives.co.za		
Professional affiliation(s) (if any)	HPCSA: PS0097942		

Project Consultant:	Zitholele Consulting (Pty) Ltd		
Contact person:	Tania Oosthuizen		
Postal address:	PO Box 6002, Halfway House		
Postal code:	1682	Cell:	083 504 9881
Telephone:	011 207 2060	Fax:	086 676 9950
E-mail:	taniao@zitholele.co.za		

4.2 The specialist appointed in terms of the Regulations_

I, San-Marie Aucamp , 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; and
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:

Equispectives Research and Consulting Services ~~Ltd~~

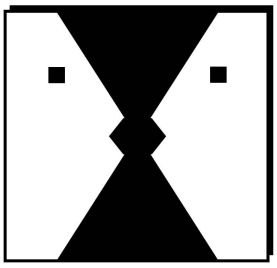
Name of company (if applicable):

20/05/2016

Date:

Kendal 30 year ash disposal facility

Social Impact Assessment



Prepared by:

Equispectives Research and Consulting Services

PO Box 11019

Erasmuskloof

0048

Contact person: Ilse Aucamp

Prepared for: Zitholele Consulting

Updated June 2016

Executive Summary

The current ash disposal facility at Kendal Power Station will not be able to meet the future needs of the power station, therefore there is a need to establish additional ash disposal facilities. The proposed site for the ash disposal facility falls within Ward 30 of the Emalahleni Local Municipality. A number of stakeholders that might be affected by the proposed project have been identified. The stakeholder groups are:

- Residential communities;
  - Eskom Triangle community;
  - Khayalethu Village;
  - Olympic community;
  - Makhosi community;
  - Van Biljon residents.
- Agriculture groups;
  - Commercial farmers (Truter Boerderye and Torero);
  - AFGRI.
- Government;
  - Mpumalanga Provincial Government;
  - eMalahleni Local Municipality;
  - Mpumalanga Province Department of Public Works, Roads and Transport.
- Mining groups;
  - Eyethu Coal/Kusile Mining;
  - Other mining groups in the area.
- Parastatal organisations;
  - Transnet;
  - Eskom.

The nature and severity of the impacts on each of these groups differ. Given that Kendal Power Station is a working facility, there are existing impacts, and in some instances these impacts will continue. The existing social impacts that are experienced in the area include:

- Health impacts;
- Concerns about quality of crops due to the impact of ash;

- Nuisance impacts related to dust;
- Lack of social and physical infrastructure related to a historical influx of people;
- Issues surrounding water quality (both surface and ground water);
- Security of current employment (positive impact for current employees, as no new employment will be created);
- Electricity generation (positive national impact).

These impacts influence the quality of the living environment of the affected stakeholders, and some might become long term and chronic, unless managed properly. Failure to manage these impacts may result in an area unsafe for permanent human habitation, which would call for the relocation of all the communities living in a 1km radius of the proposed project, so it is in the interest of all stakeholders to ensure appropriate management measures are implemented. In addition to the existing impacts, the project will also cause new impacts. These impacts include:

- Impacts on food security due to loss of agricultural land;
- Loss of income in the farming community;
- Potential economic impact on users of the D1390 road;
- Resettlement of the Triangle community, which is seen as a severe social impact.

The report suggest a number of mitigation measures, of which the following are key recommendations:

- If communities are not relocated, conduct a human health study to determine the real risks to communities living in the area. Once the results of this study are known, recommendations regarding the future of these communities can be made.
- Appoint a relocation expert to handle the relocation of the Triangle community, and commence with the process as soon as the Environmental Authorisation is issued.
- Establish an environmental forum to monitor cumulative impacts and share resources to address existing impacts.
- Appoint a community liaison officer and implement a grievance mechanism.

The energy sector in South Africa are faced by certain challenges, and this can potentially have a severe negative impact on the South African economy. These challenges cannot be resolved overnight, and it will take some years to solve the challenges. Without an Ash Disposal Facility (ADF),

Kendal Power Station will not be able to operate. It is therefore in the interest of the country that this project continues. The severe negative social impact and environmental injustice experienced by vulnerable communities residing in the area must be considered and mitigated. The wellbeing of these communities should not be sacrificed in the interest of the broader public. It is recommended that the project proceed only if the interests of the vulnerable parties can be protected as suggested in the mitigation measures.

Declaration of Independence

Equispectives Research and Consulting Services declare that:

- All work undertaken relating to the proposed project were done as an independent consultants;
- They have the necessary required expertise to conduct social research, including the required knowledge and understanding of any guidelines or policies that are relevant to the proposed activity;
- They have undertaken all the work and associated studies in an objective manner, even if the findings of these studies were not favourable to the project proponent;
- They have no vested interest, financial or otherwise, in the proposed project or the outcome thereof, apart from remuneration for the work undertaken under the auspices of the relevant regulations;
- They have no vested interest, including any conflicts of interest, in either the proposed project or the studies conducted in respect of the proposed project, other than complying with the relevant required regulations;
- They have disclosed any material factors that may have the potential to influence the competent authority's decision and/or objectivity in terms of any reports, plans or documents related to the proposed project as required by the regulations.

Record of Experience

This report was compiled by Ilse Aucamp and San-Marié Aucamp.

Ilse Aucamp has more than 12 years of experience in Social Impact Assessment (SIA). She holds a D Phill degree, a Masters degree in Environmental Management and a Social Work degree. Dr Aucamp is frequently a guest lecturer in pre- as well as post-graduate programmes at various tertiary institutions. She has conducted more than 100 SIA studies. Her expertise includes social impact assessments, social management plans, social and labour plans, social auditing, social development, social monitoring, training and public participation. She is the past international chairperson of the Social Impact Assessment section of the International Association of Impact Assessment (IAIA) and a past member of the National Executive Council of IAIA South Africa. She is a co-author of the *Social Impact Assessment: Guidance for assessing and managing the social impacts of projects* document published by the IAIA in April 2015. She is register with the South African Council for Social Service Professionals.

San-Marié Aucamp is a registered Research Psychologist with extensive experience in both the practical and theoretical aspects of social research. She has more than 15 years experience in social research and she occasionally presents guest lectures on social impact assessment. Her experience includes social impact assessments, social and labour plans, training, group facilitation and social research. She is a past council member of the Southern African Marketing Research Association (SAMRA).

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GLOSSARY OF TERMS

Sense of place: Defining oneself in terms of a given piece of land. It is the manner in which humans relate or feel about the environments in which they live.

Social impact: Something that is experienced or felt by humans. It can be positive or negative. Social impacts can be experienced in a physical or perceptual sense.

Social change process: A discreet, observable and describable process that changes the characteristics of a society, taking place regardless of the societal context (that is, independent of specific groups, religions etc.) These processes may, in certain circumstances and depending on the context, lead to the experience of social impacts.

Social Impact Assessment: The processes of analysing, monitoring and managing the intended and unintended social consequences, both positive and negative, of planned interventions (policies, programs, plans, projects) and any social change processes invoked by these interventions. Its primary purpose is to bring about a more sustainable and equitable biophysical and human environment.

Social license to operate: The acceptance and belief by society, and specifically local communities, in the value creation of activities.

Social risk: Risk resulting from a social or socio-economic source. Social risk comprises both the objective threat of harm and the subjective perception of risk for harm.

LIST OF ABBREVIATIONS

ADF	Ash Disposal Facility
CPA	Communal Property Association
CLF	Community Liaison Forum
CRR	Comments and Response Report
DM	District Municipality
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
ESOMAR	European Society for Opinion and Marketing Research
GDP	Gross Domestic Product
IDP	Integrated Development Plan
IFC	International Finance Corporation
LED	Local Economic Development
LM	Local Municipality
NEMA	National Environmental Management Act
NGO	Non Government Organisation
RAP	Relocation Action Plan
RPF	Resettlement Policy Framework
SAMRA	Southern African Marketing Research Association
SAPS	South African Police Service
SIA	Social Impact Assessment
UNEP	United Nations Environmental Programme

1 Introduction

The purpose of this report is to provide baseline information regarding the social environment, to identify possible social impacts that may come about as a result of the proposed project, and to suggest ways in which these impacts can be mitigated and managed. This will assist decision-makers on the project in making informed decisions by providing information on the potential or actual consequences of their proposed activities. The process undertaken entailed the following:

- A baseline socio-economic description of the affected environment;
- Identification of potential social change processes that may occur as a result of the project;
- Identification of potential social impacts; and
- Identification of social mitigation measures.

Social impact assessment (SIA), a form of social research, can assist with identifying possible social impacts and risks. Disregarding social impacts can alter the cost-benefit equation of a development and in some cases even undermine the overall viability of a project. A proper SIA can have many benefits for a proposed development (UNEP, 2002) such as:

- Reduced impacts on communities of individuals,
- Enhanced benefits to those affected,
- Avoiding delays and obstruction – helps to gain development approval (social license),
- Lowered costs,
- Better community and stakeholder relations,
- Improved proposals.

Zitholele Consulting appointed Equispectives Research and Consulting Services to investigate potential social impacts as part of the Environmental Impact Assessment study for the proposed project. This report represents the findings and recommendations of the SIA.

2 Project overview

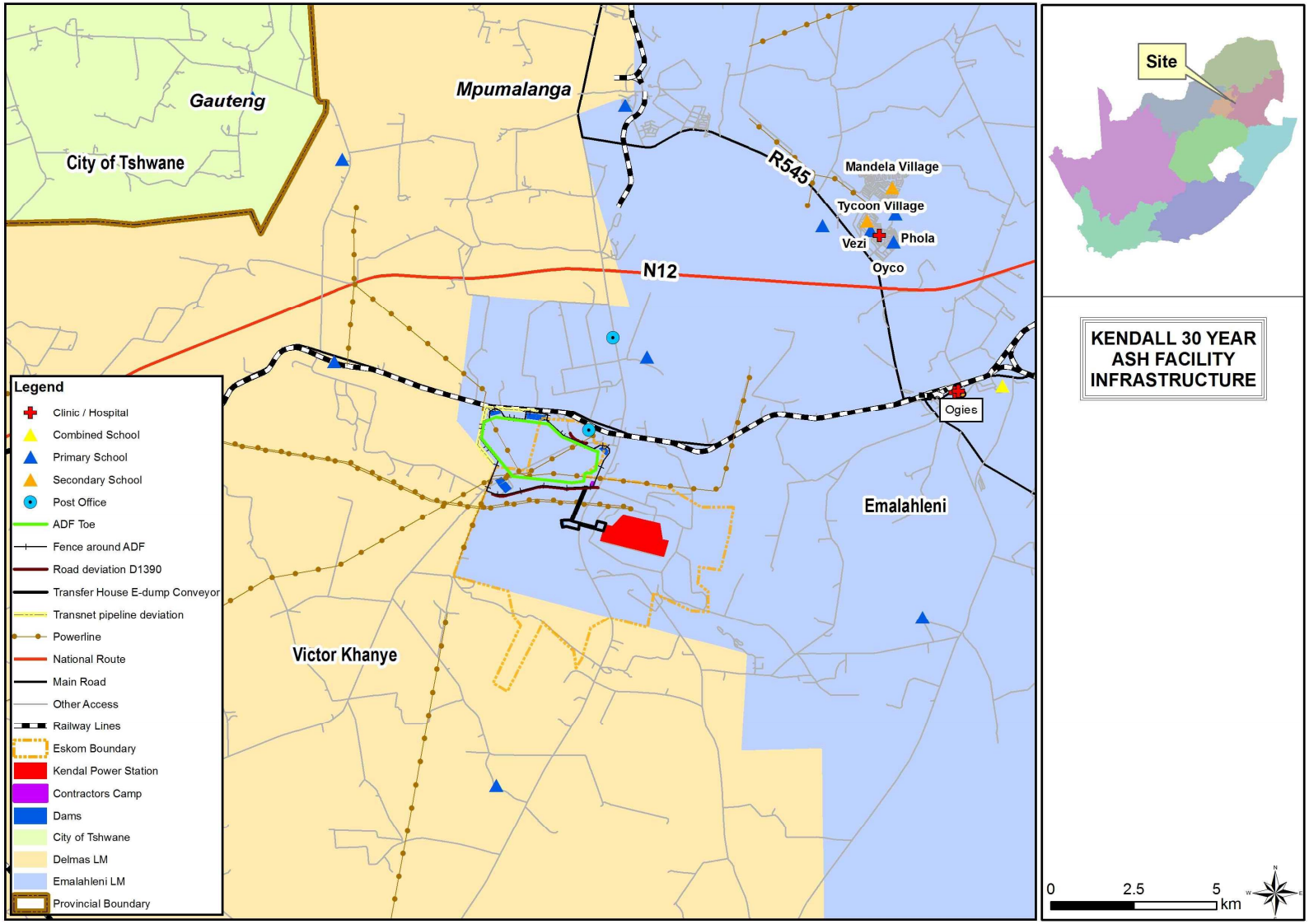
Kendal Power Station was commissioned in the mid 1980's with a forty-year operating life. The initial dry ash disposal site was designed to have a capacity for the operating life with an eight year contingency period. The life of the power station has since been extended to sixty years, and with some other contributing factors, such as the dry density and the load factor, the initial dry ash disposal facility is now under capacity. The total additional capacity required for the ash disposal facility is 176.2 Mm^3. It is expected that the life of project will extent to December 2053, with a five year contingency taking it up to December 2028. Due to the current boundary and operating machinery limitations this capacity cannot be reached on the current ashing site. A suitable site for the remaining ash to be deposited has been identified. The size of the new ash disposal facility is approximately 404.7 hectares.

The following infrastructure components are required:

- Ash Disposal Facility to be constructed
- Fixed conveyors that will transport ash to the ash disposal site;
- Diversion of several power lines;
- A ring access road constructed around its perimeter together with storm water canals intercepting impacted runoff and directing to a pollution control dam;
- Five proposed new pollution control dams and two clean and dirty water dams are to be constructed;
- Road D1390 which runs through the proposed new ash disposal facility footprint needs to be diverted;
- The Transnet fuel pipeline needs to be diverted; and
- Three access points to the proposed new ash disposal facility.

Figure 1 shows the proposed location of the two site options in municipal context.

Figure 1: Location of the proposed site (Site H) for the 30 year ash disposal facility



3 Study approach

3.1 Information base

The information used in this study was based on the following:

1. A literature review (see list provided in the References);
2. Interviews with key stakeholders; and
3. Professional judgement based on experience gained with similar projects.

3.2 Assumptions and limitations

The following assumptions and limitations were relevant:

1. Not every individual in the community could be interviewed therefore only key people in the community were approached for discussion. Additional information was obtained using existing data.
2. The social environment constantly changes and adapts to change, and external factors outside the scope of the project can offset social changes, for example changes in local political leadership or economic conditions. It is therefore difficult to predict all impacts to a high level of accuracy, although care has been taken to identify and address the most likely impacts in the most appropriate way for the current local context within the limitations.
3. Social impacts can be felt on an actual or perceptual level, and therefore it is not always straightforward to measure the impacts in a quantitative manner.
4. Social impacts commence when the project enters the public domain. Some of these impacts will occur irrespective of whether the project continues or not. These impacts are difficult to mitigate and some would require immediate action to minimise the risk.
5. There are different groups with different interests in the community, and what one group may experience as a positive social impact, another group may experience as a negative impact. This duality will be pointed out in the impact assessment phase of the report.
6. Social impacts are not site-specific, but take place in the communities surrounding the proposed development.

3.3 Methodology

Scientific social research methods were used for this assessment. In order to clarify the process to the reader, this section will start with a brief explanation of the processes that have been used in this study.

3.3.1 Defining of concepts

The theoretical model used for this impact assessment was developed by Slootweg, Vanclay and Van Schooten and presented in the International Handbook of Social Impact Assessment (Vanclay & Becker, 2003). This model identifies pathways by which social impacts may result from proposed projects. The model differentiates between social change processes and social impacts, where the social change process is the pathway leading to the social impact. Detail of how the model works is not relevant to this study, but it is important to understand the key concepts, which will be explained in the following paragraphs.

Social change processes are set in motion by project activities or policies. A social change process is a discreet, observable and describable process that changes the characteristics of a society, taking place regardless of the societal context (that is, independent of specific groups, religions etc.) These processes may, in certain circumstances and depending on the context, lead to the experience of social impacts (Vanclay, 2003). If managed properly, however, these changes may not create impacts. Whether impacts are caused will depend on the characteristics and history of the host community, and the extent of mitigation measures that are put in place (Vanclay, 2003). Social change processes can be measured objectively, independent of the local context. Examples of social change processes are an increase in the population, relocation, or the presence of temporary workers. Social change processes relevant to the project will be discussed before the possible social impacts will be investigated.

For the purpose of this report, the following social change process categories were investigated:

- Demographic processes;
- Economic processes;
- Geographic processes;
- Institutional and legal processes;
- Emancipatory and empowerment processes;
- Socio-cultural processes; and
- Other relevant processes.

The International Association for Impact Assessment (2003) states that Social Impact Assessment includes the processes of analysing, monitoring and managing the intended and unintended social consequences, both positive and negative, of planned interventions (policies, programs, plans, projects) and any social change processes invoked by these interventions. Its primary purpose is to bring about a more sustainable and equitable biophysical and human environment. The Inter-organizational Committee on Principles and Guidelines for Social Impact Assessment (2003) defines Social Impact Assessment in terms of "efforts to assess, appraise or estimate, in advance, the social consequences likely to follow from proposed actions".

A **social impact** is something that is experienced or felt by humans. It can be positive or negative. Social impacts can be experienced in a physical or perceptual sense. Therefore, two types of social impacts can be distinguished:

- **Objective** social impacts – i.e. impacts that can be quantified and verified by independent observers in the local context, such as changes in employment patterns, in standard of living or in health and safety.
- **Subjective** social impacts – i.e. impacts that occur "in the heads" or emotions of people, such as negative public attitudes, psychological stress or reduced quality of life.

It is important to include subjective social impacts, as these can have far-reaching consequences in the form of opposition to, and social mobilisation against the project (Du Preez & Perold, 2005).

For the purpose of this SIA, the following social impact categories were investigated:

- Health and social well-being;
- Quality of the living environment;
- Economic impacts and material well-being;
- Cultural impacts;
- Family and community impacts;
- Institutional, legal, political and equity impacts; and
- Gender impacts.

Relevant criteria for selecting significant social impacts included the following:

- Probability of the event occurring;

- Number of people that will be affected;
- Duration of the impact;
- Value of the benefits or costs to the impacted group;
- Extent to which identified social impacts are reversible or can be mitigated;
- Likelihood that an identified impact will lead to secondary or cumulative impacts;
- Relevance for present and future policy decisions;
- Uncertainty over possible effects; and
- Presence or absence of controversy over the issue.

For the purpose of this study, the model was adapted to suit the South African context, and where processes and impacts were not relevant to the study, it was omitted. Each category has a number of sub-categories, which also have been investigated. The Equator Principles, International Finance Corporation Performance Standards and World Bank Environmental, Health and Safety guidelines were consulted in the writing of this report and the mitigation suggested adheres to these requirements.

3.3.2 Literature study

A detailed literature search was undertaken to obtain secondary data for the baseline description of the socio-economic environment. The information in this report was acquired via statistical data obtained from Statistics South Africa, SIA literature (see References) as well as information from reputable sources on the World Wide Web.

3.3.3 Research approach

Traditionally there are two approaches to SIA, a technical approach and a participatory approach. A technical approach entails that a scientist remains a neutral observer of social phenomena. The role of the scientist is to identify indicators, obtain objective measures relevant to the situation and provide an expert assessment on how the system will change (Becker, Harris, Nielsen & McLaughlin, 2004). A participatory approach uses the knowledge and experiences of individuals most affected by the proposed changes as the basis for projecting impacts. In this case the role of the scientist is facilitator of knowledge sharing, interpretation and reporting of impacts (Becker et al, 2004).

The findings presented in this report are based on secondary (desk) research and primary research. A qualitative approach was followed for the primary research, while qualitative and quantitative data were used for the secondary research.

The layperson sometimes criticises qualitative research as “subjective” or “not really that scientific”. For this reason it is vital to understand the distinction between qualitative and quantitative research as well as their respective areas of application.

Qualitative research as a research strategy is usually characterised by the inference of general laws from particular instances, forms theory from various conceptual elements, and explains meaning (David & Sutton, 2004). It usually emphasise words rather than quantification in the collection and analysis of data. Data collection takes place by using methods such as unstructured or semi-structured interviews, focus groups, observations, etc. Data is not recorded in any standardised coding format, but are usually reported according to themes. Qualitative data express information about feelings, values and attitudes. This approach is used where insight and understanding of a situation is required (Malhotra, 1996). Participants are selected based on their exposure to the experience or situation under review. The aim of qualitative research is to understand, not to quantify and as such is extremely suitable for assessing social impacts. A potential impact has to be understood before it can be assessed appropriately.

Quantitative research as a research strategy usually makes inferences of particular instances by reference to general laws and principles and tends to emphasize what is external to or independent of the mind (objective) and incorporates a natural science model of the research process (David & Sutton, 2004). This usually makes it easier for a person with a natural or physical sciences background to relate to. This approach usually emphasises quantification in the collection and analysis of data. Data collection take place by using methods such as structured questionnaires and data is recorded in a numeric or some other standardised coding format. Data is expressed in numerical format and statistical techniques are usually used to assist with data interpretation. This approach is used when information needs to be generalised to a specific population and participants are usually selected using probability sampling techniques (although non-probability methods can be used depending on the characteristics of the target population).

Although in theory the qualitative phase of this project could be followed by a quantitative phase, for a number of reasons it was not done. A quantitative phase would be more resource intensive in terms of labour, time and cost and the incremental precision obtained in terms of generalisability would not warrant the additional investment. Due to the strong emotional component relating to

the perceived impacts, respondents may intentionally magnify the intensity of the impacts or indicate all impacts are equally severe in an attempt to bias the results in their favour, which will reduce the utility of quantitative results as part of the primary research process.

3.3.4 Ethical issues

The fact that human beings are the objects of study in the social sciences brings unique ethical problems to the fore. Every individual have a right to privacy which is the individual's right to decide when, where, to whom, and to what extent his or her attitudes, beliefs and behaviour will be revealed (Strydom, 2002). Every person interviewed for the purposes of this report has been ensured that although the information disclosed will be used, their names will not be disclosed without their permission. Therefore, to protect those consulted and to maintain confidentiality, the people interviewed for this report will not be named in the report. Records of the interviews have been kept. This is in line with international as well as national research practice such as the European Society for Opinion and Marketing Research (ESOMAR) and SAMRA codes of conduct.

4 Baseline description of the social environment

According to the National Environmental Management Act (NEMA, 1998) environment refers to the surroundings in which humans exist. When viewing the environment from a social perspective the question can be asked what exactly the social environment is. Different definitions for social environment exist, but a clear and comprehensive definition that is widely accepted remains elusive. Barnett & Casper (2001) offers the following definition of human social environment:

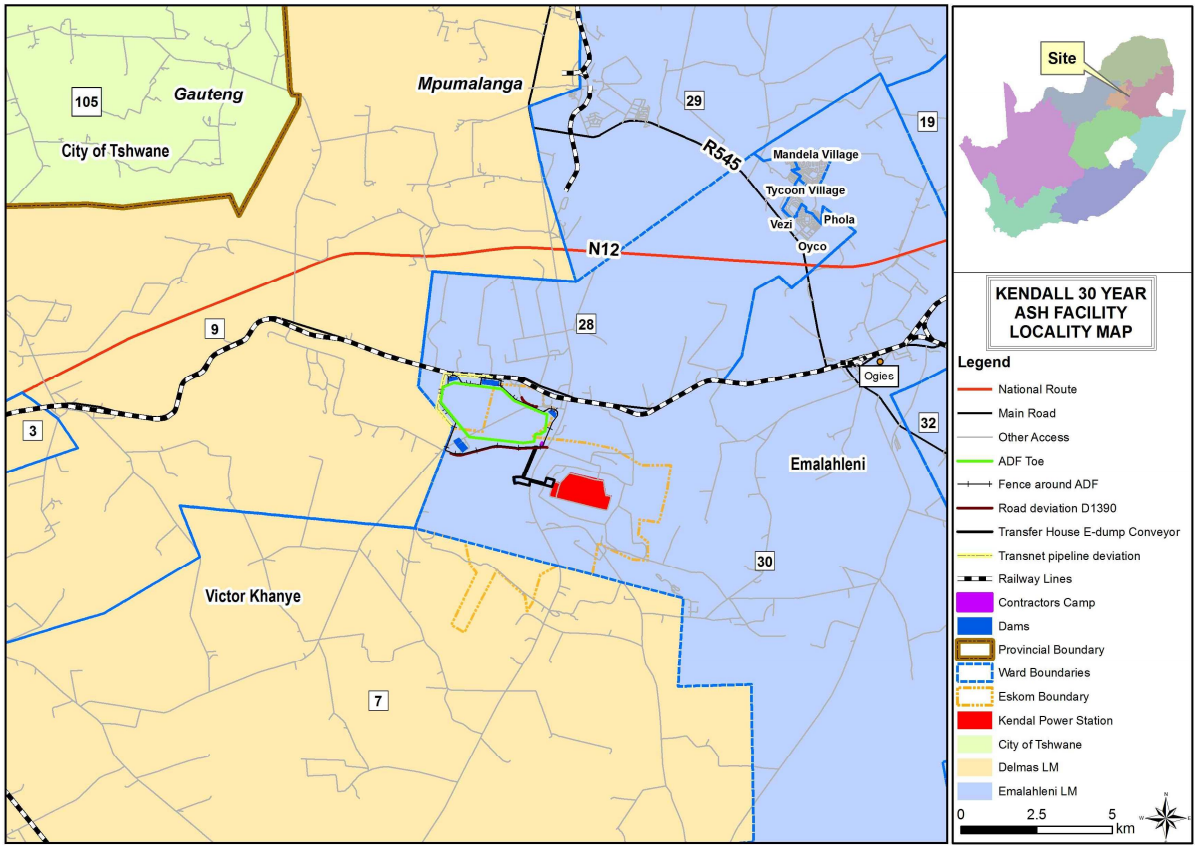
> *"Human social environments encompass the immediate physical surroundings, social relationships, and cultural milieus within which defined groups of people function and interact. Components of the social environment include built infrastructure; industrial and occupational structure; labour markets; social and economic processes; wealth; social, human, and health services; power relations; government; race relations; social inequality; cultural practices; the arts; religious institutions and practices; and beliefs about place and community. The social environment subsumes many aspects of the physical environment, given that contemporary landscapes, water resources, and other natural resources have been at least partially configured by human social processes. Embedded within contemporary social environments are historical social and power relations that have become institutionalized over time. Social environments can be experienced at multiple scales, often simultaneously, including households, kin networks, neighbourhoods, towns and cities, and regions. Social environments are dynamic and change over time as the result of both internal and external forces. There are relationships of dependency among the social environments of different local areas, because these areas are connected through larger regional, national, and international social and economic processes and power relations."*

Environment-behaviour relationships are interrelationships (Bell, Fisher, Baum & Greene, 1996). The environment influences and constrains behaviour, but behaviour also leads to changes in the environment. The impacts of a project on people can only be truly understood if their environmental context is understood. The baseline description of the social environment will include a description of the area within a provincial, district and local context that will focus on the identity and history of the area as well as a description of the population of the area based on a number of demographic, social and economic variables.

4.1 Description of the area

The proposed site is situated on the farms Heuvelfontein 215 IR portions 20, 28, 29, 36, 38, 58, 74, 79, 92 and 93 and Schoongezicht 218 IR portions 24m 38 and 39. It is located in Ward 30 of the Emalahleni Local Municipality and borders Ward 28 of the Emalahleni LM and Ward 9 of the Victor Khanye Local Municipality. Ward 7 of the Victor Khanye LM is included in the analysis as part of the Eskom property of the Kendal power station falls in this ward. Ward 31 of the Emalahleni LM is also included in the analysis as it includes Phola, which will be a labour-sending area. The Victor Khanye LM and the Emalahleni LM are both situated in the Nkangala District Municipality in the Mpumalanga. Figure 2 shows the location of the proposed project.

Figure 2: Locality map of the proposed project



4.1.1 Mpumalanga Province

The Mpumalanga Province is located in the north eastern part of South Africa and covers an area of approximately 82 333 km^2 (www.mputopbusiness.co.za). It borders the Limpopo Province, Gauteng, the Free State, KwaZulu Natal and internationally Swaziland and Mozambique. The word Mpumalanga means “place where the sun rises”.

The province consists of three district municipalities, namely Gert Sibande, Nkangala and Ehlanzeni. Nelspruit is the provincial capital and other major towns include Barberton, Delmas, Ermelo, Hazyview, Komatipoort, Malelane, Mashishing (Lydenburg), Middelburg, Piet Retief, Sabie, Secunda, Standerton, Volksrust, White River and Emalahleni (Witbank) (www.mpumalanga.com).

Mpumalanga is South Africa's major forestry production area and is also the world's largest producer of electrolytic manganese metal. Six major industrial clusters have been identified in Mpumalanga (Mpumalanga PGDS) in which numerous investment opportunities exists, namely stainless steel; agri-processing; wood products; chemical industry and chemical products; agri-products and tourism.

Extensive mining is done in the province. Minerals found include: gold, platinum group metals, silica, chromite, vanadiferous magnetite, argentiferous zinc, antimony, cobalt, copper, iron, manganese, tin, coal, andalusite, chrysotile asbestos, kieselguhr, limestone, magnesite, talc and shale.

Mpumalanga also accounts for 83% of South Africa's coal production. Ninety percent of South Africa's coal consumption is used for electricity generation and the synthetic fuel industry. Coal power stations are situated close to the coal deposits.

The province mainly exports primary products from its mining and agricultural activities with little value addition. Mpumalanga will be able to increase its share of export contribution towards the provincial GDP by adding value to its export products through beneficiation (Mpumalanga Economic Profile).

4.1.2 Nkangala District Municipality

The Nkangala District Municipality is one of the three district municipalities in Mpumalanga. Local municipalities forming part of the Nkangala DM are Victor Khanye, Dr JS Moroka, Emalahleni, Emakhazeni, Steve Tshwete, and Thembisile, and the Mdala District Management Area.

The district is approximately 17 000 km^2 and consists of about 165 towns and villages, with Emalahleni and Middelburg being the primary towns. According to the municipality's website, the Nkangala DM is at the economic hub of Mpumalanga and is rich in minerals and natural resources. The district's economy is dominated by electricity, manufacturing and mining. Community services, trade, finance, transport, agriculture and construction (www.nkangaladm.org.za) are also important sectors. Nkangala's Integrated Development Plan (IDP) states that the district has extensive mineral

deposits, including chrome and coal. There are six coal-fired power stations in the Nkangala District (Nkangala IPD 2012/2013), with a seventh currently under construction.

Another important economic activity in Nkangala is agriculture. The southern regions of the municipality are suitable for crop farming, specifically for fresh produce such as maize and vegetables, while cattle and game farming occur in the northern regions.

In terms of the population profile of the Nkangala DM, the majority of its inhabitants are extremely poor and do not have access to mainstream economic activities. The main poverty concentration is amongst the communities residing in Dr JS Moroka and Thembisile Local Municipalities. The most important employment centre for these communities is the City of Tshwane, reducing their reliance on NDM. Daily commuting by means of public transport is a necessity (Nkangala IDP 20012/2013).

4.1.3 Victor Khanye Local Municipality

The Victor Khanye Local Municipality is situated on the western Highveld of the Mpumalanga Province and covers a geographic area of approximately 1 567 km^2. Towns and settlements in the municipality include Abor, Argent, Botleng, Delmas, Eloff and Lionelton. The municipality is mainly rural in nature and is highly dependent on the neighbouring Ekhurhuleni Metro for job opportunities (Victor Khanye LM IDP, 2010/2011). The local economy is relatively diversified with the largest sector both in terms of output as well as proportional contribution being the trade sector, followed by the agriculture sector and the mining sector. The municipality views agro-processing of local agricultural goods as a key component of any LED strategy in the municipality.

The area is characterised by an increase in the number of mining and related activities in the Leandra area, mainly coal and silica mining (Nkangala IDP 2012/2013). Other important sectors in the area include agriculture, finance and manufacturing. The area is located close to the metropolitan areas of Tshwane and Ekhurhuleni in Gauteng.

4.1.4 Emalahleni Local Municipality

The Emalahleni Local Municipality is one of the six local municipalities forming part of the Nkangala DM and borders the Gauteng Province. The Emalahleni LM is situated strategically within provincial context and in relation to the national transport network. It is situated closely to the City of Johannesburg Metropolitan, City of Tshwane Metropolitan Municipality and the Ekurhuleni Metropolitan Municipality. It is connected to these areas by the N4 and N12 freeways and a railway network. The Maputo Corridor runs through the municipality. The southern parts of the municipality

forms part of the region referred to as the Energy Mecca (Emalahleni IDP, 2012/13) due to its rich coal reserves and a number of power stations in the area such as Kendal, Matla, Duvha, Ga-Nala and the new Kusile power station.

The main urban centre is the town of Emalahleni with the other towns / activity nodes being Ogies, Phola, Ga-Nala, Thubelihle, Rietspruit, Van Dyksdrift and Wilge. The development patterns in the area are fragmented, not only because of previous policies of segregation by race, but also due to the fact that large areas are undermined or have mining rights which resulted in further physical separation of areas, and the presence of natural features like flood plains and marshlands (Emalahleni IDP, 2012/13).

The Emalahleni LM was put under Administration in terms of Section 139 (1)(b) of the Constitution of the Republic of South Africa in April 2013 (www.info.gov.za).

4.2 Description of the population

The baseline description of the population will take place on three levels, namely provincial, district and local. Impacts can only truly be comprehended by understanding the differences and similarities between the different levels. The baseline description will focus on the Victor Khanye LM and the Emalahleni LM in the Nkangala DM in the Mpumalanga Province (referred to in the text as the study area), as these are the areas that will be most affected by the proposed ash disposal facility. Where possible, the data will be reviewed on a ward level – Ward 7 and 9 of the Victor Khanye LM and Ward 28, 30 and 31 of the Emalahleni LM. The data used for the socio-economic description was sourced from Census 2011. Census 2011 was a de facto census (a census in which people are enumerated according to where they stay on census night) where the reference night was 9-10 October 2011. The results should be viewed as indicative of the population characteristics in the area and should not be interpreted as absolute.

The following points regarding Census 2011 must be kept in mind (www.statssa.co.za):

- Comparisons of the results of labour market indicators in the post-apartheid population censuses over time have been a cause for concern. Improvements to key questions over the years mean that the labour market outcomes based on the post-apartheid censuses have to be analysed with caution. The differences in the results over the years may be partly attributable to improvements in the questionnaire since 1996 rather than to actual developments in the labour market. The numbers published for the 1996, 2001, and 2011 censuses are therefore not

comparable over time and are higher from those published by Statistics South Africa in the surveys designed specifically for capturing official labour market results.

- For purposes of comparison over the period 1996–2011, certain categories of answers to questions in the censuses of 1996, 2001 and 2011, have either been merged or separated.
- The tenure status question for 1996 has been dropped since the question asked was totally unrelated to that asked thereafter. Comparisons for 2001 and 2011 do however remain.
- All household variables are controlled for housing units only and hence exclude all collective living arrangements as well as transient populations.
- When making comparisons of any indicator it must be taken into account that the time period between the first two censuses is of five years and that between the second and third census is of ten years. Although Census captures information at one given point in time, the period available for an indicator to change is different.

4.2.1 Population and household sizes

According to the Census 2011, the population of South Africa is approximately 51,8 million and has shown an increase of about 15.5% since 2001. The household density for the country is estimated on approximately 3.58 people per household, indicating an average household size of 3-4 people (leaning towards 4) for most households, which is down from the 2001 average household size of 4 people per household. Smaller household sizes are in general associated with higher levels of urbanisation.

The estimated growth for the Mpumalanga Province (Table 1) was greater than the national average while the Emalahleni LM showed the greatest increase in population since 2001.

The average household size for the Mpumalanga Province is above the national average. The household sizes for all the areas under investigation have decreased since 2001 while the number of households has increased. This can indicate that people tend to have smaller families.

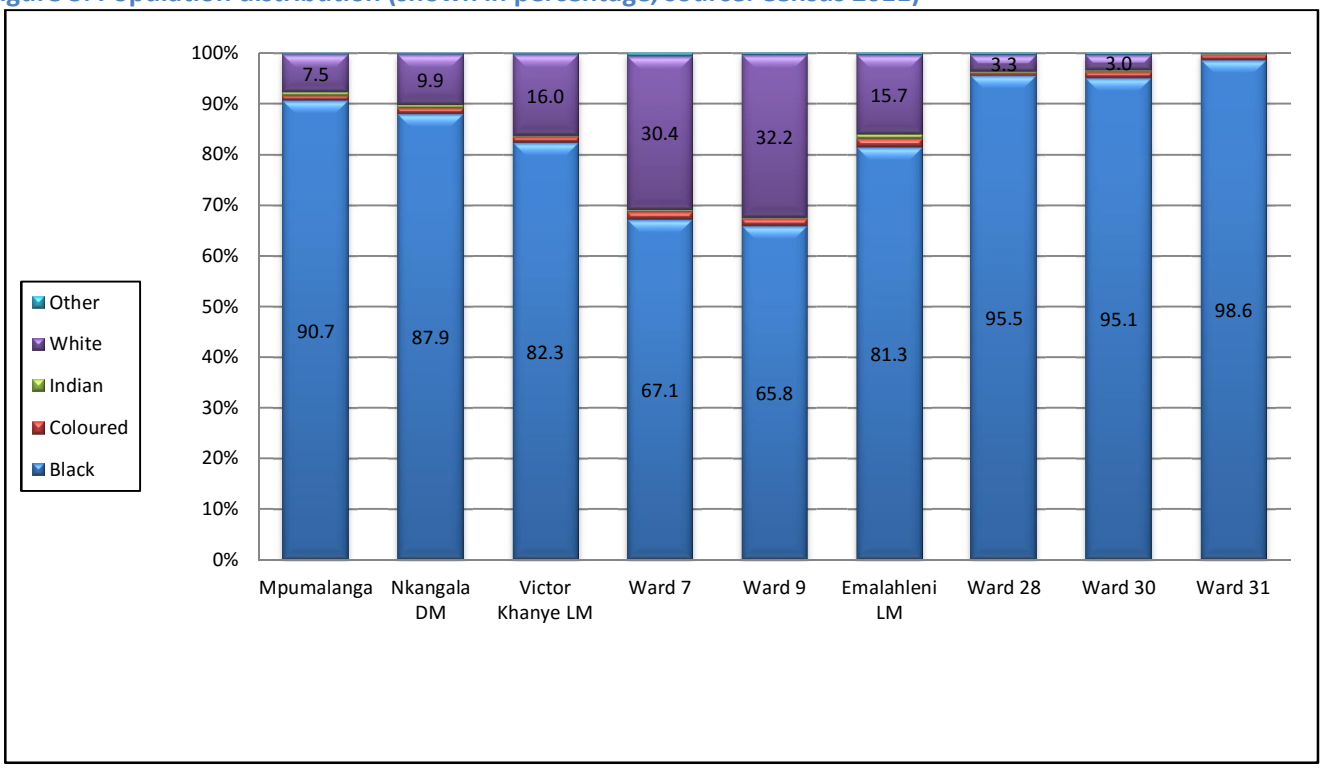
Table 1: Census 2011 - Population, growth and household estimates

	Approximate population size	Estimated population growth since 2001	Average household size	Estimate growth in households since 2001
Mpumalanga Province	**4 039 939**	**20.04%**	**3.76**	**36.93%**
Nkangala District Municipality	1 308 129	28.45%	3.67	45.42%
Victor Khanye Local Municipality	75 452	33.93%	3.67	53.02%
Emalahleni Local Municipality	395 466	43.07%	3.30	60.01%

4.2.2 Population composition

In all the areas under investigation, the majority of the population belongs to the Black population group, but the proportions differ (Figure 3). Ward 9 of the Victor Khanye LM has the lowest proportion of people belonging to the Black population group of all the areas under investigation. Ward 9 has a much greater proportion of people belonging to the White population group than the Victor Khanye LM as a whole, which make this area culturally different from the rest of the municipality as well as the district and province. The profile for Ward 7 is very similar to that of Ward 9. Ward 30 of the Emalahleni LM has the highest proportion of Black people of all the areas under investigation, also much higher than on local or district level. The profiles for Wards 28 and 31 are very similar to that of Ward 30.

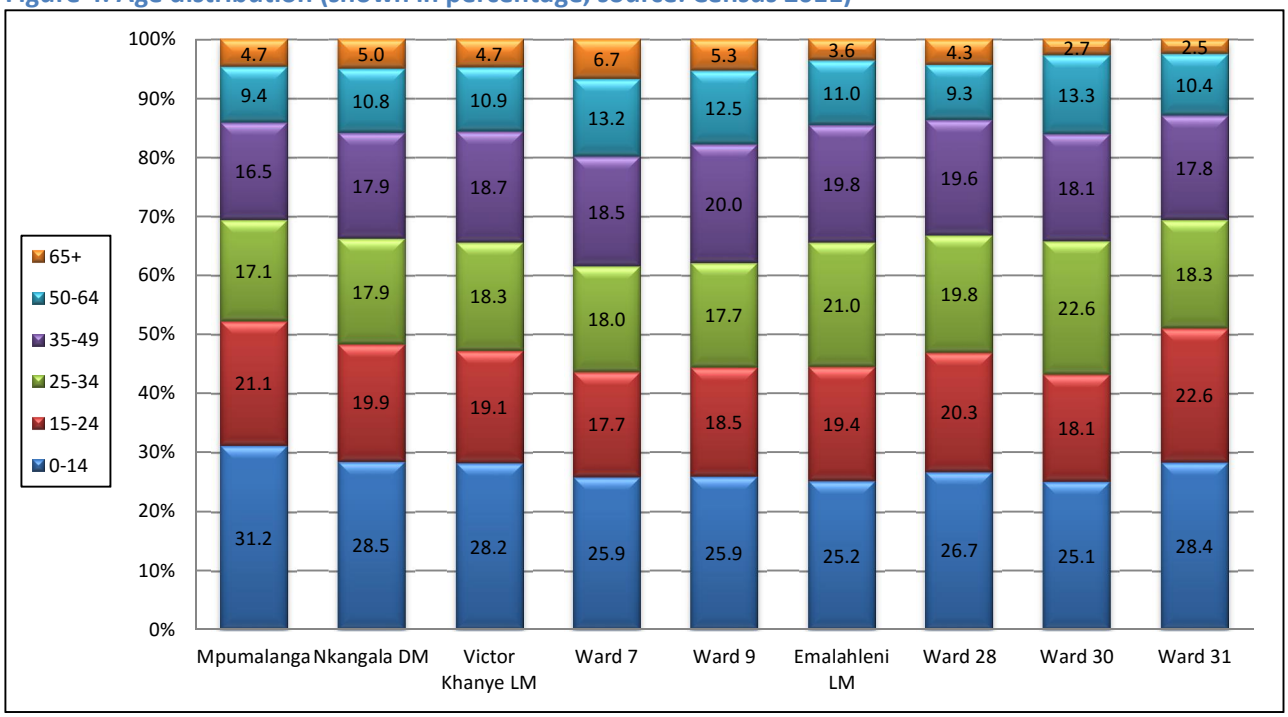
Figure 3: Population distribution (shown in percentage, source: Census 2011)



4.2.3 Age

The age distribution of the areas under investigation shows that Ward 31 of the Emalahleni LM has a greater proportion of children aged 14 years or younger and a smaller proportion of people older than 65 years of age than the other wards (Figure 4). Ward 30 of the Emalahleni LM has a higher proportion of people between the ages of 25-34 years. Ward 7 of the Victor Khanye LM has the highest total dependency ratio (48.4) compared to 45.4 for Ward 9, 45.0 for Ward 28 of the Emalahleni LM, 44.7 for Ward 31 and 38.5 for Ward 30. The total dependency ratio refers to the proportion of dependants per 100 working-age population. The youth dependency ratio for Ward 31 (41.1) is much greater than for the other wards, indicating that there is greater pressure on the working-age population in Ward 31 and they can be expected to pursue potential employment opportunities with vigilance. Ward 7 has the highest Aged dependency ratio (10.0). If the dependency ratio is based on only the proportion of the population that is employed, Ward 28 has the highest proportion of dependents per 100 employed people (75.0), while Ward 9 has the lowest proportion (64.1). This suggests that there will be a higher demand for employment in Ward 28, as well as in Wards 30 and 31 (with ratios of 71.1 and 72.4).

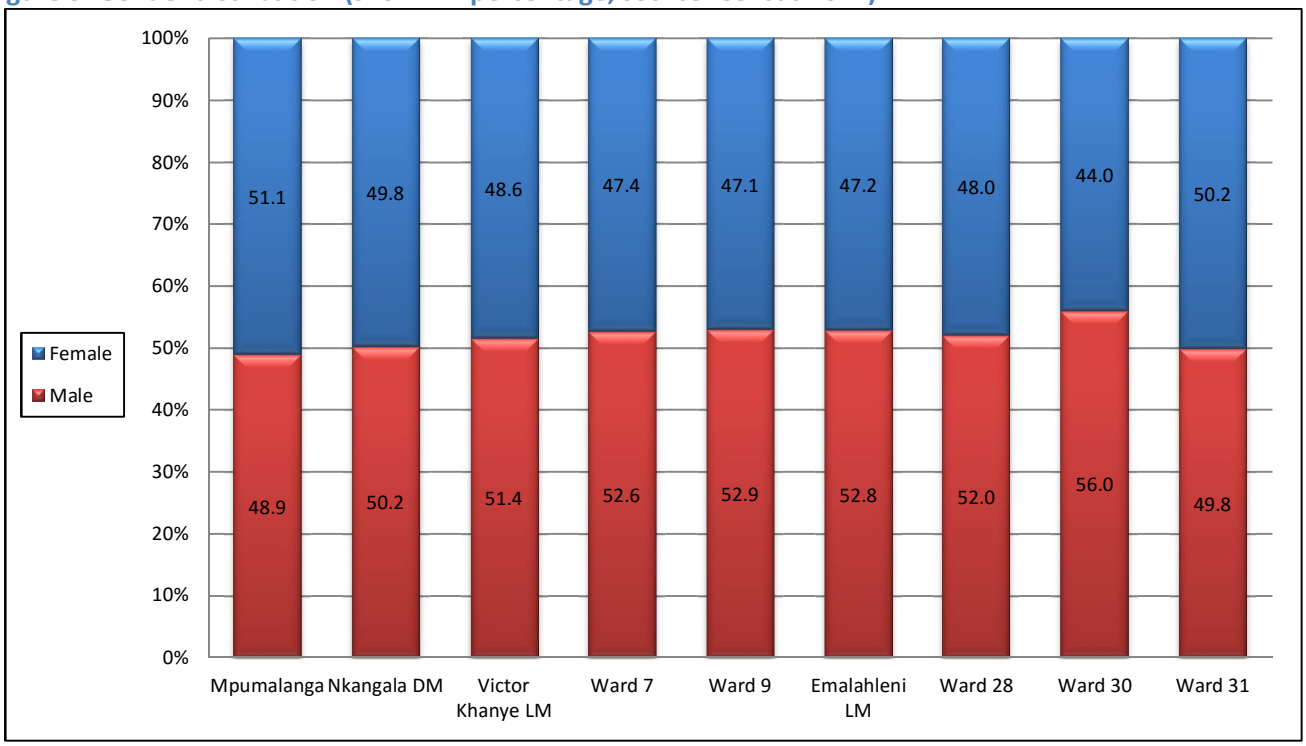
Figure 4: Age distribution (shown in percentage, source: Census 2011)



4.2.4 Gender

The gender distribution for the areas under investigation shows a bias towards males (Figure 5), especially in Ward 30. This can in all likelihood be ascribed to the presence of mines and construction activities in the area and the resulting migration of male workers to the area.

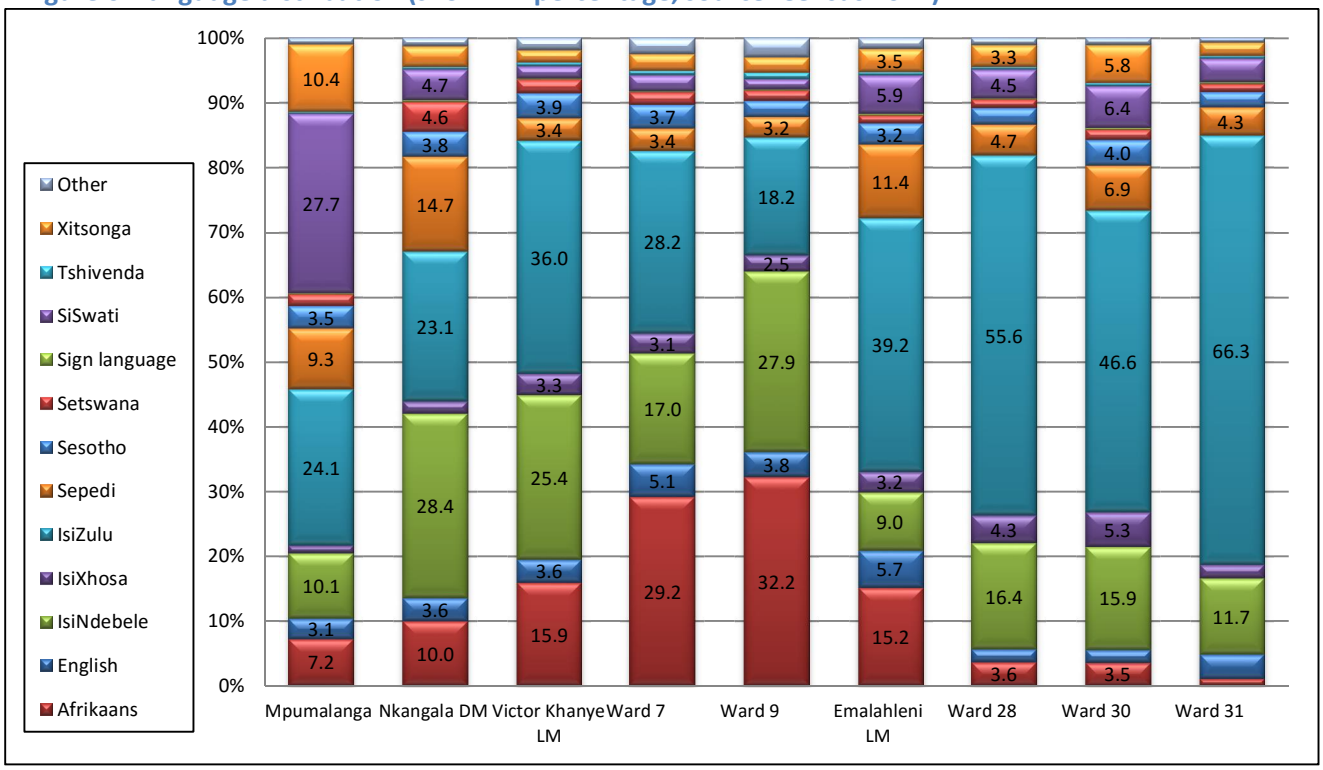
Figure 5: Gender distribution (shown in percentage, source: Census 2011)



4.2.5 Language

The language distribution for the areas under investigation looks very different from one another (Figure 6). In Wards 28, 30 and 31 of the Emalahleni LM the predominant home language is IsiZulu, followed by IsiNdebele, while the predominant home languages in Ward 7 and 9 of the Victor Khanye LM are Afrikaans, IsiNdebele and IsiZulu. As home language relate to culture, it suggests that the areas are culturally different from one another with greater diversity in Wards 7 and 9. Home language should be taken in consideration when choosing languages to communicate in with the local communities.

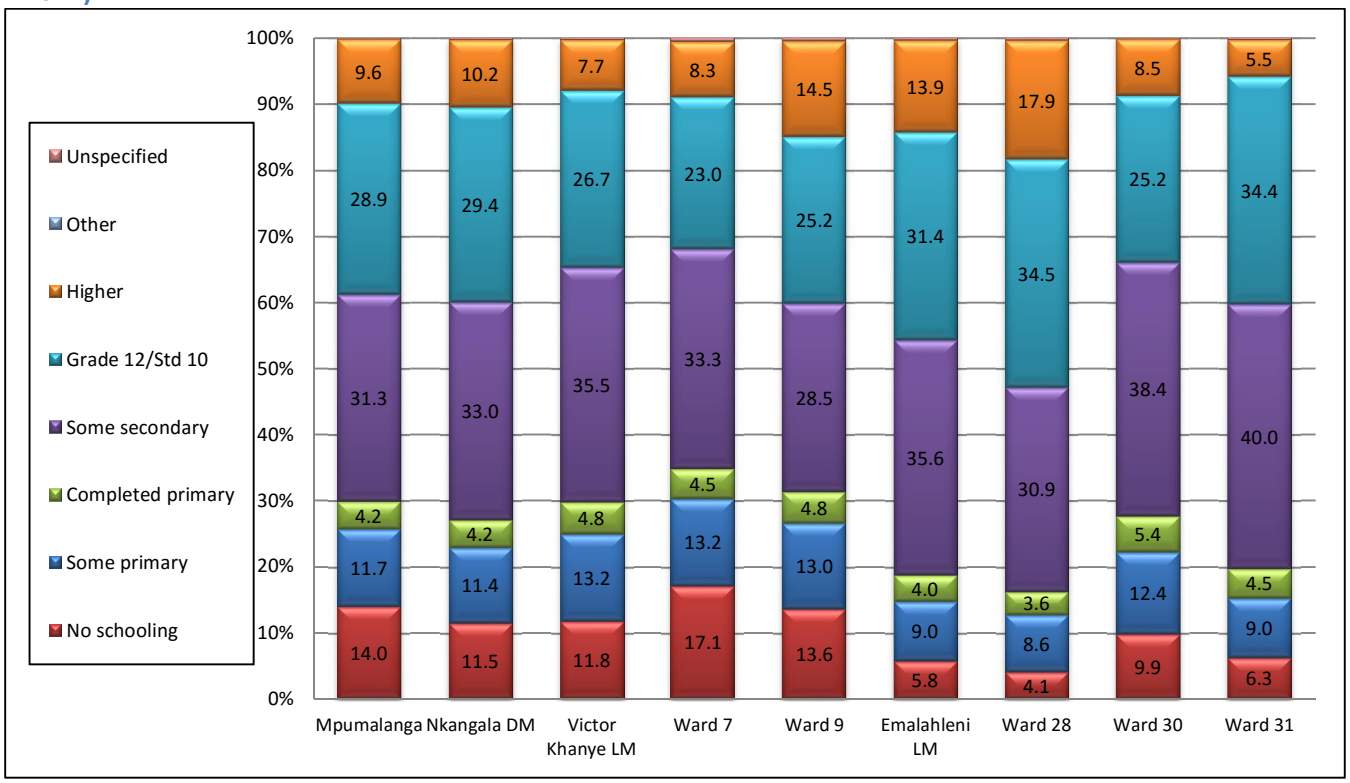
Figure 6: Language distribution (shown in percentage, source: Census 2011)



4.2.6 Education

Figure 7 shows the education profiles for the areas under investigation for those aged 20 years or older. Ward 7 in the Victor Khanye LM has the highest proportion of people who have no schooling or have only completed some primary school on local level. Ward 28 of the Emalahleni LM has the highest proportion of people with schooling higher than Grade 12, although this ward also have the lowest proportion of employed people.

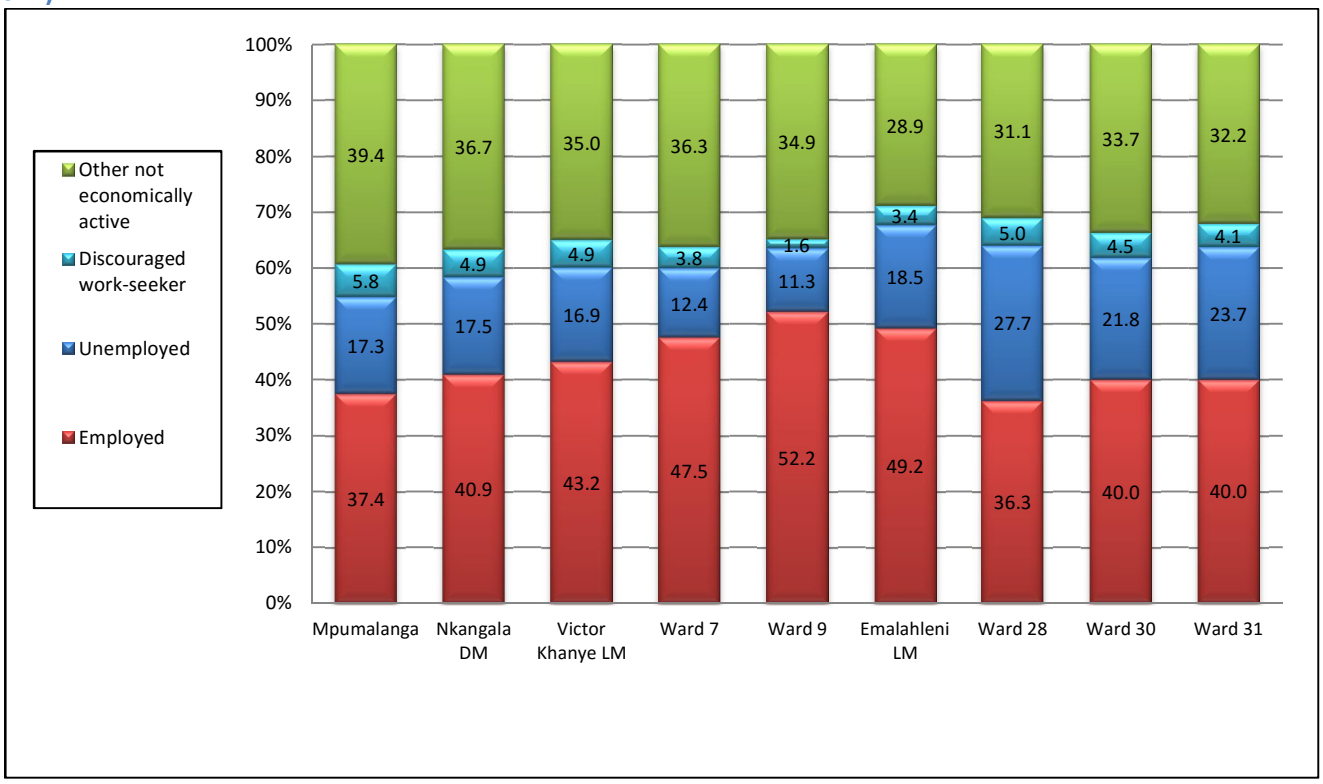
Figure 7: Education profiles (those aged 20 years or older, shown in percentage, source: Census 2011)



4.2.7 Employment

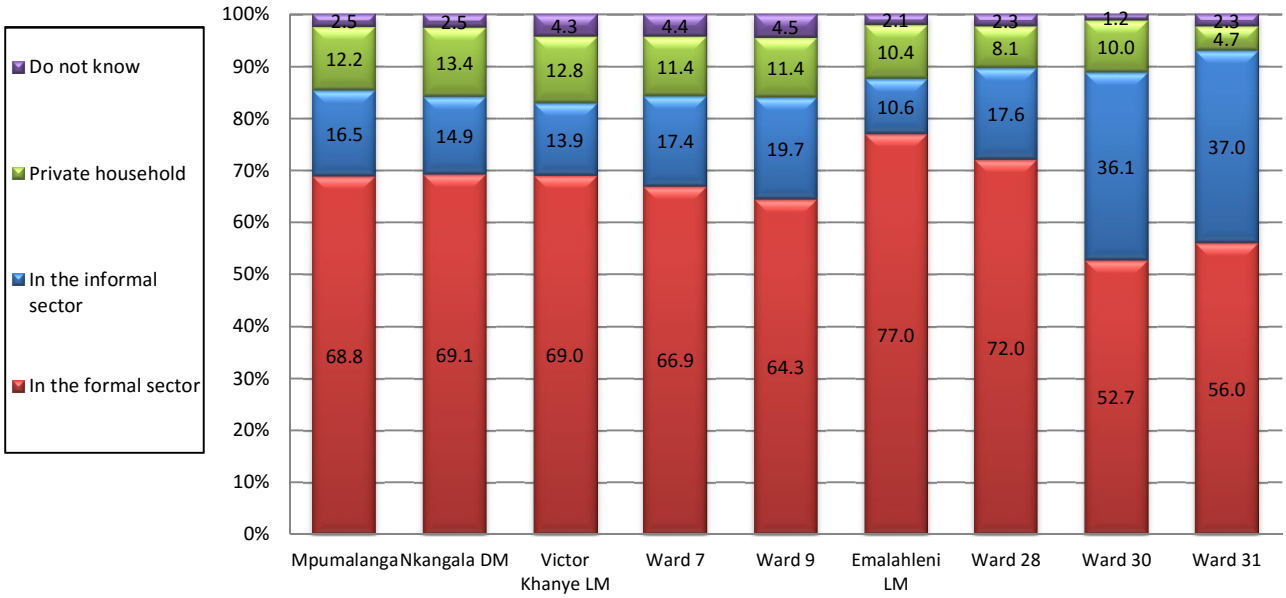
Ward 9 of the Victor Khanye LM has the highest proportion of people of economically active age (aged between 15 years and 65 years) that are employed (Figure 8) of the areas under investigation. Ward 29 of the Emalahleni LM has the lowest proportion of employed people on a ward level.

Figure 8: Labour status (those aged between 15 - 65 years, shown in percentage, source: Census 2011)



The majority of the employed people in the areas under investigation work in the formal sector (Figure 9). Wards 7 and 9 in the Victor Khanye LM has the highest proportion of people working at private households, while Ward 31 in the Emalahleni LM has the highest proportion of people working in the informal sector.

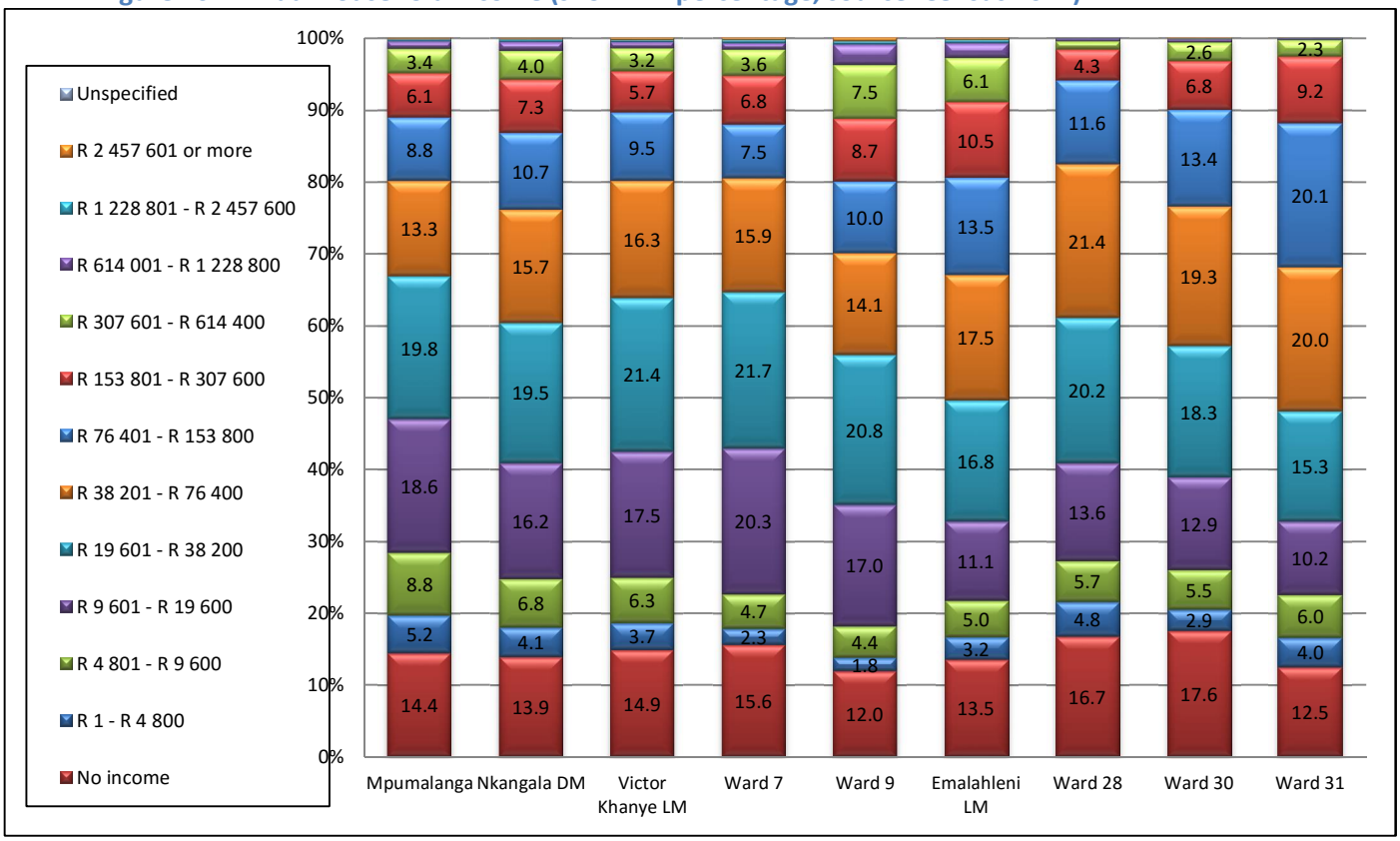
Figure 9: Employment sector (those aged between 15 - 65 years, shown in percentage, source: Census 2011)



4.2.8 Household Income

More than 60% of the households in Ward 7 of the Victor Khanye LM and Ward 28 of the Emalahleni LM have a household income of less than R38 201 per annum (Figure 10), This suggests that households in these wards are on average poorer than households in the other areas on a ward level.

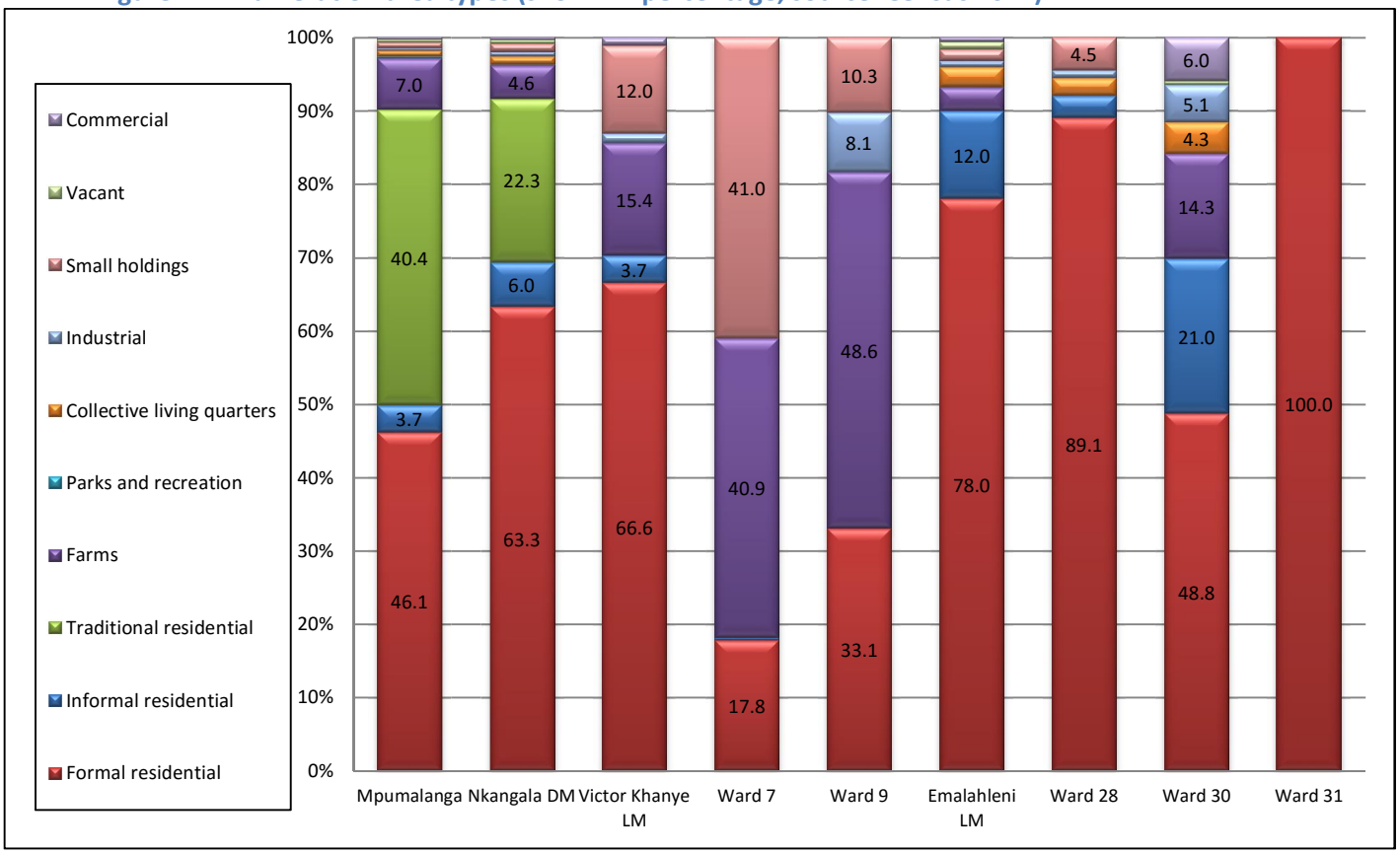
Figure 10: Annual household income (shown in percentage, source: Census 2011)



4.2.9 Housing

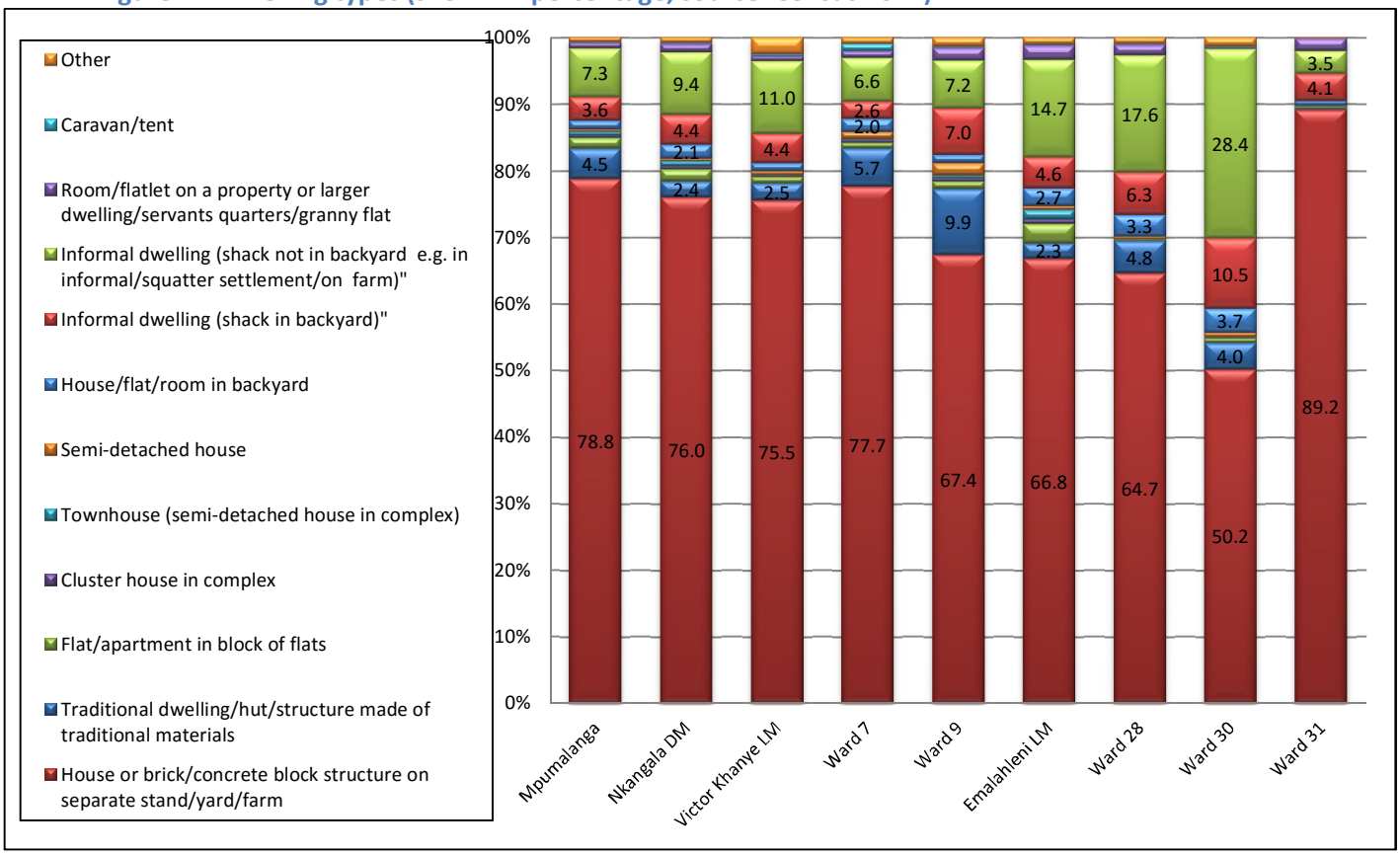
Almost half of the households in Ward 9 of the Victor Khanye LM live on farms and about a third in formal residential areas (Figure 11). There are also fairly large proportions of living on smallholdings or in industrial areas. In Ward 7 of the Victor Khanye LM about two fifths of the households live on land that is classified as farms and another two fifths live on land classified as small holdings. In Ward 28 and Ward 31 of the Emalahleni LM the majority of people live on land classified as formal residential, while about half the people in Ward 30 live on land classified as formal residential and a fifth live on land classified as informal residential. The above proportions are based on the number of people and they do not refer to the size of the area type.

Figure 11: Enumeration area types (shown in percentage, source: Census 2011)



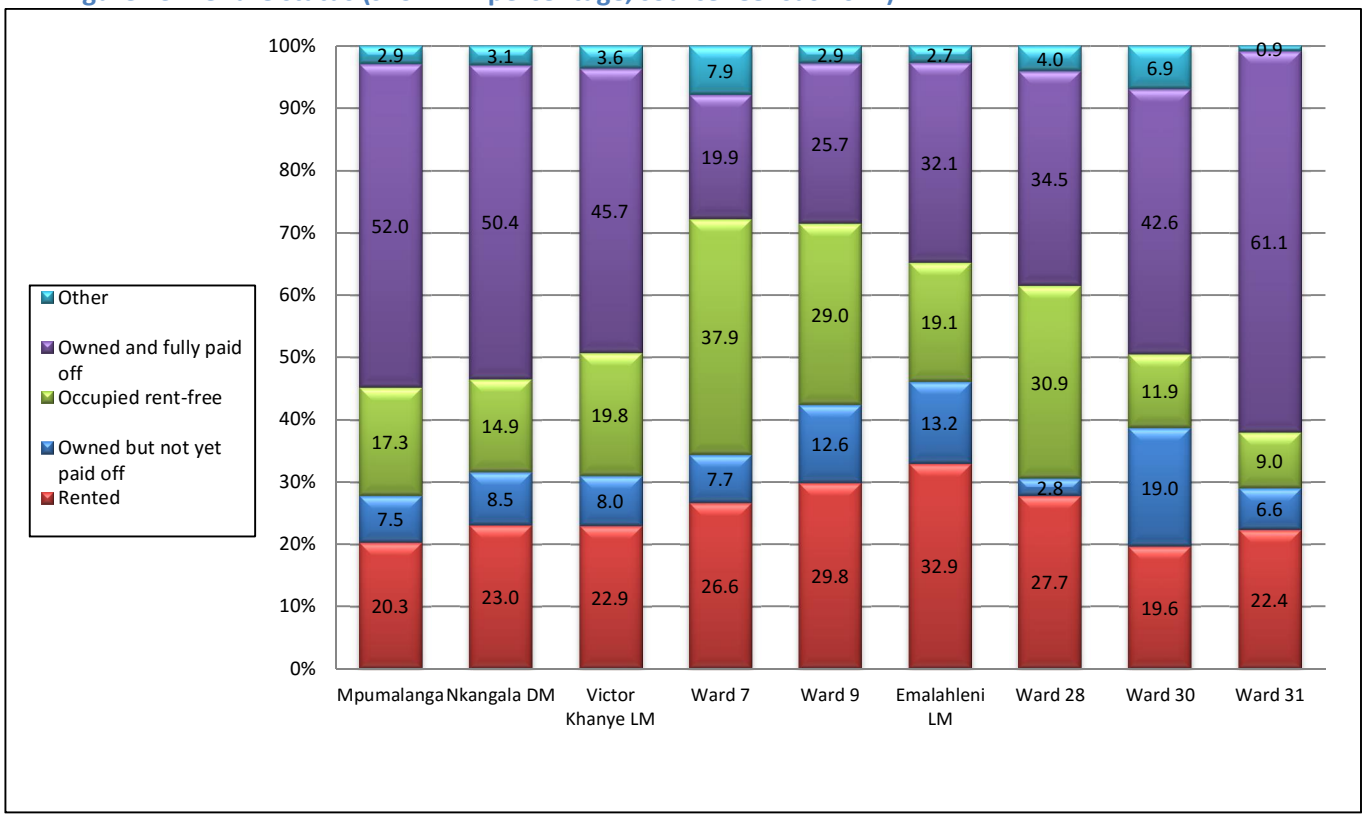
Most of the dwellings in the area are houses or brick/concrete block structures that are on a separate yard, stand or farm (Figure 12). A large proportion of households in Ward 28 and Ward 30 of the Emalahleni LM live in informal dwellings. A small proportion of the informal dwellings are in the backyard of another dwelling. In Ward 9 of the Victor Khanye LM, the second most common dwelling type is dwellings made of traditional materials, although there is no traditional land in the Victor Khanye Municipal area. This can possibly refer to farm worker residences that they have built for themselves on the farms where they stay.

Figure 12: Dwelling types (shown in percentage, source: Census 2011)



In Ward 30 of the Emalahleni LM more than 60% of households occupy their dwellings rent-free (Figure 13). Ward 9 of the Victor Khanye LM has the largest proportion of households that rent their dwellings while Ward 7 has the largest proportion of households that occupy their dwellings rent-free.

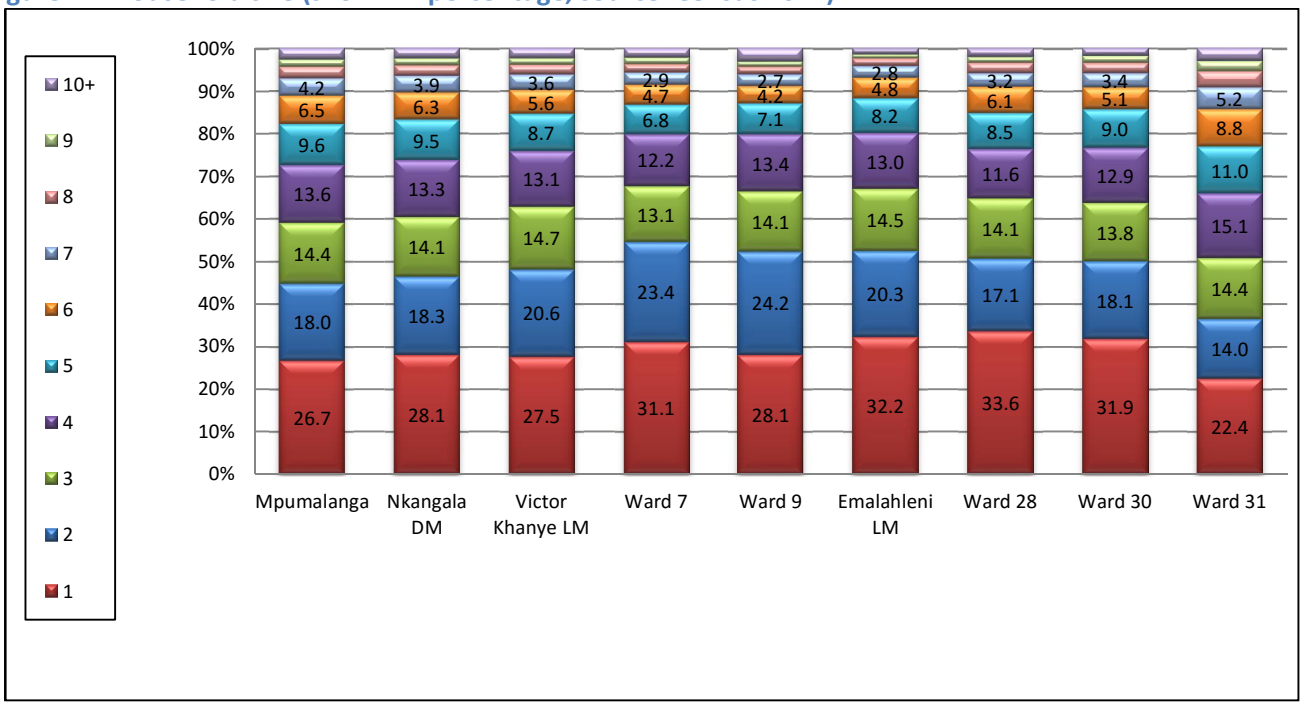
Figure 13: Tenure status (shown in percentage, source: Census 2011)



4.2.10 Household Size

On a ward level, about half of the households consist of one or two members (Figure 14), expect for Ward 31 of the Emalahleni LM where less than 40% of households consist of only one or two members. Household sizes in Ward 31 tend to be larger than in the other wards under investigation.

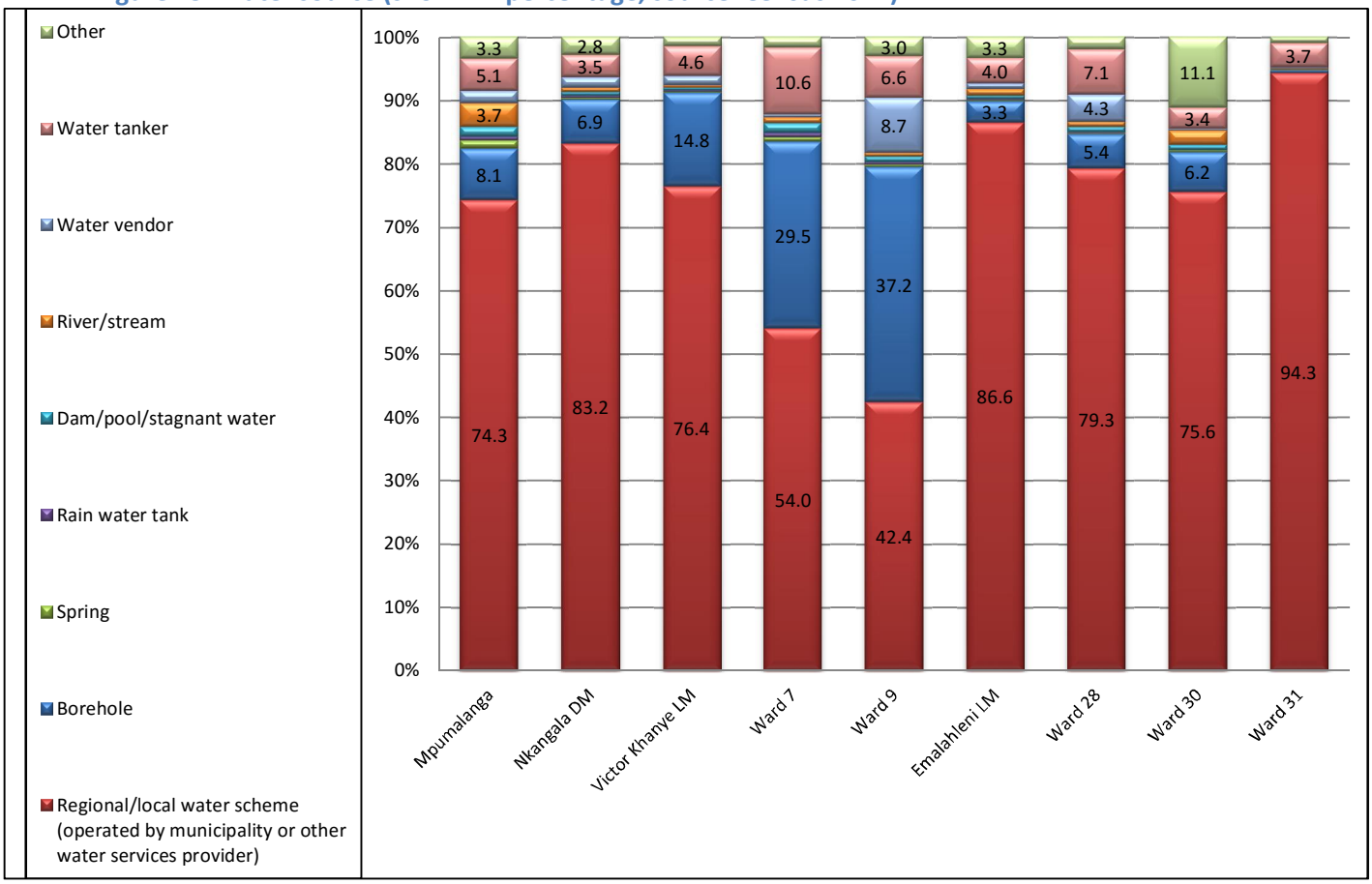
Figure 14: Household size (shown in percentage, source: Census 2011)



4.2.11 Access to water

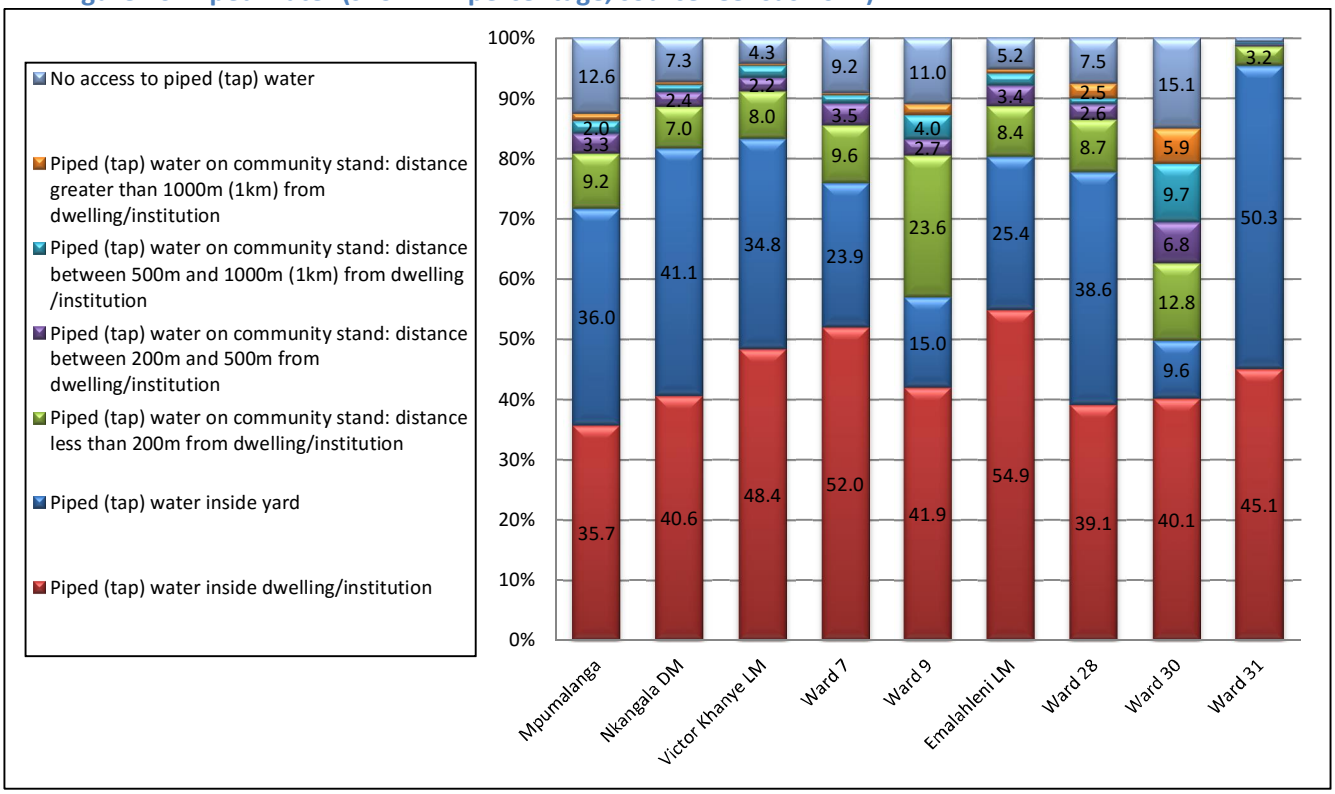
Most of the households on a ward level in the Emalahleni LM get water from a regional or local water scheme, compared to half or less of households on a ward level in the Victor Khanye LM (Figure 15). In Ward 7 and Ward 9 a large proportion of households get their water from boreholes.

Figure 15: Water source (shown in percentage, source: Census 2011)



Access to piped water, electricity and sanitation relate to the domain of Living Environment Deprivation as identified by Noble et al (2006). On a ward level Ward 31 of the Emalahleni LM has the highest incidence of households that have access to piped water either inside the dwelling or inside the yard, while Ward 30 has the lowest incidence (Figure 16). Ward 30 has the highest incidence of people that has no access to piped water. Access to piped water either inside the dwelling or the yard is a challenge in most of the wards.

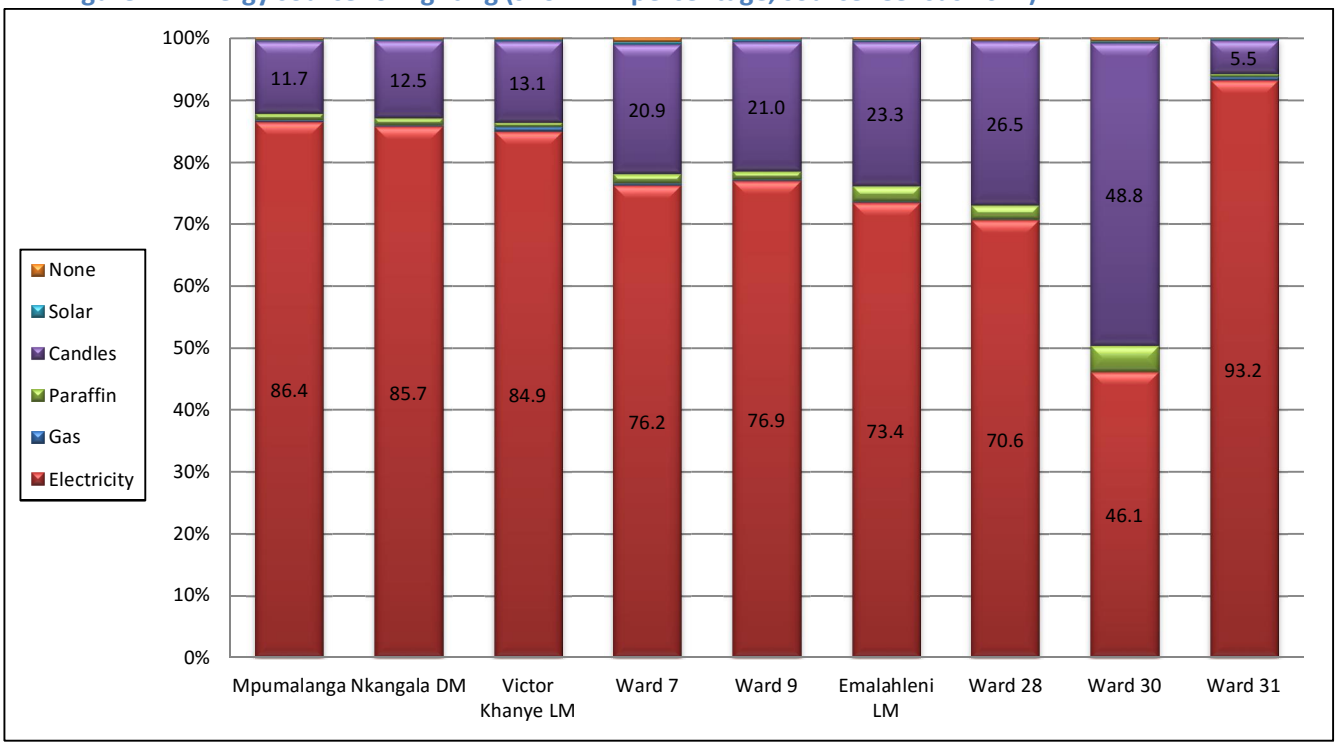
Figure 16: Piped water (shown in percentage, source: Census 2011)



4.2.12 Energy

Electricity is seen as the preferred source for lighting (Noble et al, 2006), and the lack thereof should thus be considered a deprivation. Even though electricity as energy source may be available, the choice of energy for cooking may depend on other factors such as cost. Ward 31 of the Emalahleni LM has the highest incidence of households using electricity as source of energy for lighting (Figure 17). In Ward 30 almost half of the households use candles as source of energy for lighting. This suggests that they either can't afford electricity or that their area has not been electrified.

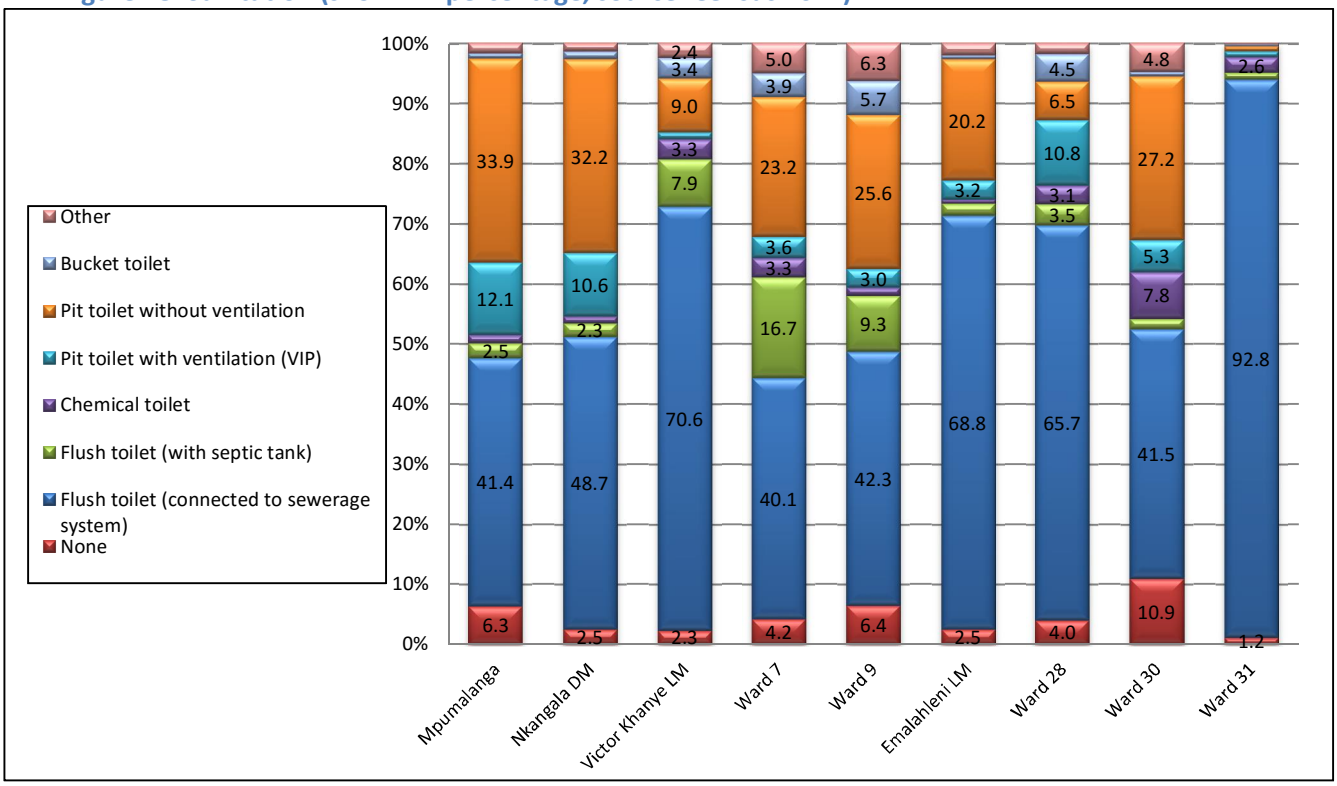
Figure 17: Energy source for lighting (shown in percentage, source: Census 2011)



4.2.13 Sanitation

According to Noble et al (2006) anyone living in a household with either a chemical toilet, pit toilets without ventilation, bucket latrine, or no toilet facility can be defined as deprived. Most of the households in Ward 31 of the Emalahleni LM have access to flush toilets that are connected to a sewerage system (Figure 18). Ward 30 has the highest incidence of households with no access to sanitation as well as the highest incidence of households with pit toilets without ventilation.

Figure 18: Sanitation (shown in percentage, source: Census 2011)



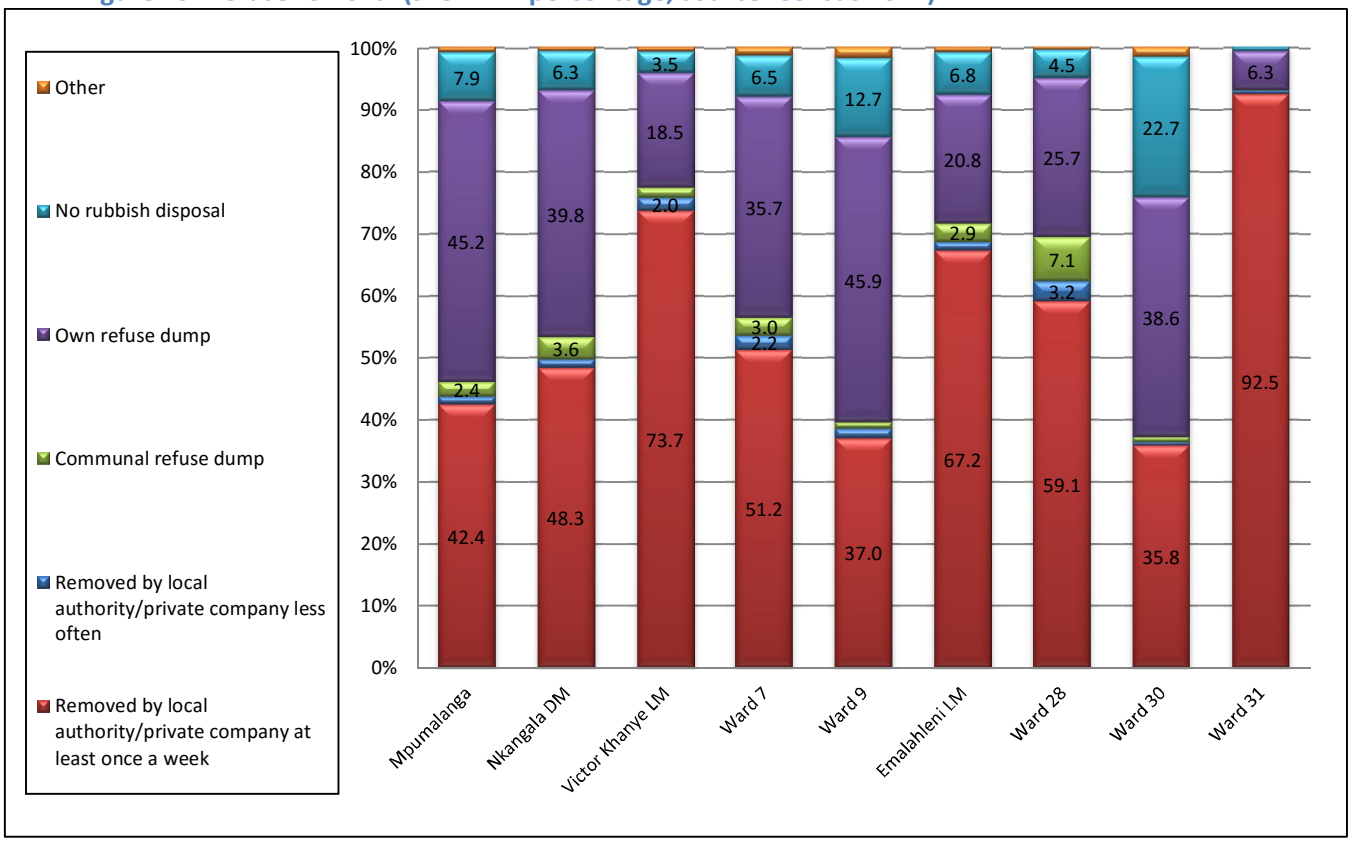
4.2.14 Refuse removal

In Ward 30 of the Emalahleni LM and Ward 7 and Ward 9 of the Victor Khany LM large proportions of the households have indicated that they have their own refuse dumps. Households with their own refuse dumps rely mostly on backyard dumping, burial and burning. These practices adversely impact on human health and the environment, specifically:

- air pollution from smoke;
- pollution of ground and surface water resources and home grown fruit and vegetables;
- people inhaling smoke from fires at risk of contracting disease (cancer, respiratory related illness); and
- fires can destroy property.

Ward 30 has the highest incidence of people that have indicated that they have no rubbish disposal.

Figure 19: Refuse removal (shown in percentage, source: Census 2011)



4.2.15 Crime

The crime statistics for the South African Police Service (SAPS) are not grouped according to district municipalities or wards, but according to SAPS regions. For this reason, the statistics will be reviewed on national and provincial level as well as for the Ogies police precinct that covers in the area surrounding to the site.

Figure 20 gives a comparison of the distribution of crime by main category in the area with national and provincial profiles for the April 2013 to March 2014 reporting period. The highest frequency of crimes reported on a national as well as local level is contact crimes (crimes against the person). These include crimes such as murder, assault, robbery and sexual crimes. On a provincial level, the crimes reported with the highest frequency is property-related crimes which include crimes such as burglary at residential and non-residential premises, theft of motor vehicle and motorcycle, theft out of motor vehicle and stock-theft.

Figure 20: Crime for the April 2013 – March 2014 reporting period by main crime categories (source: www.saps.gov.za)

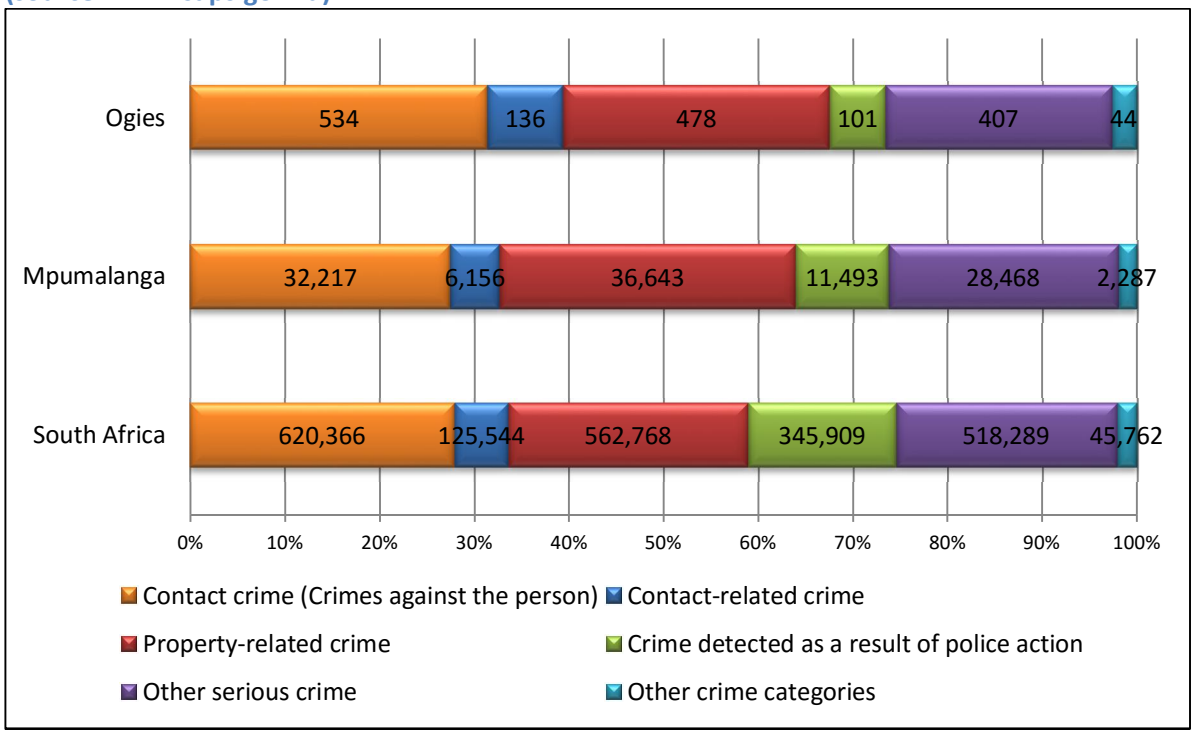
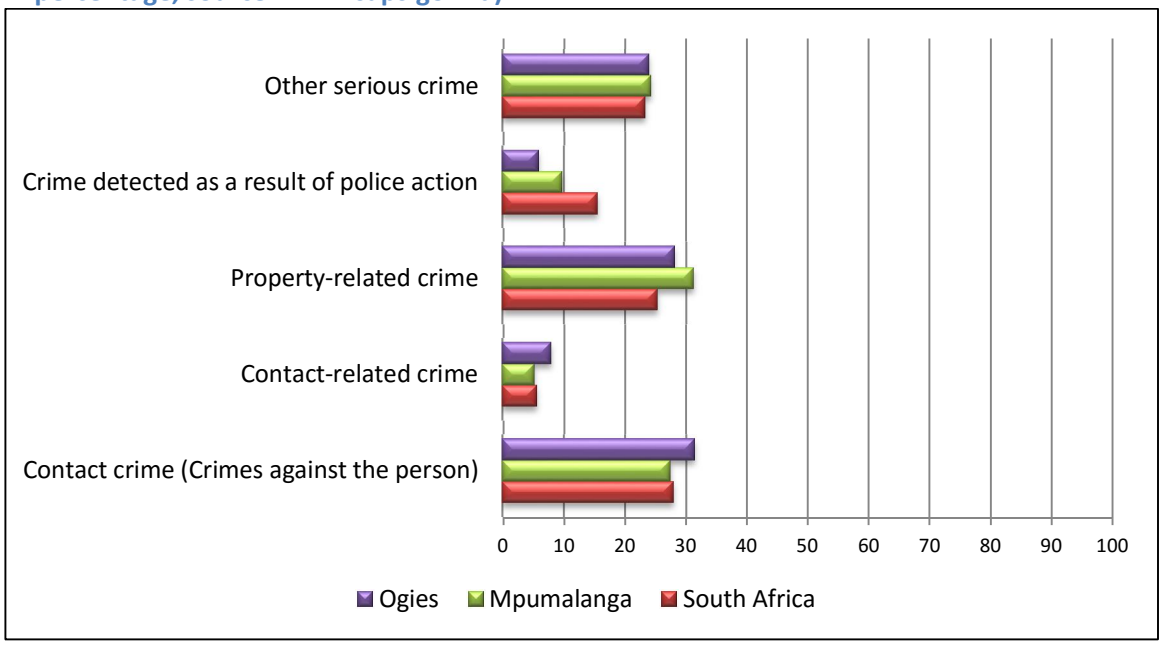


Figure 21 shows the crimes in the areas under discussion in percentage. There are proportionately more contact and contact-related crimes at the Ogies police precinct than on national or provincial level. Contact-related crimes include arson and malicious damage to property. At the Ogies police precinct there are proportionately less crimes detected as a result of police action. These crimes include unlawful possession of firearms and ammunition, drug-related crime and driving under the influence of alcohol or drugs.

Figure 21: Crime for the April 2013 – March 2014 reporting period by main crime category (shown in percentage, source: www.saps.gov.za)



Contact crimes involve physical contact between the victims and perpetrators and as such are almost always violent in nature. For the victim, contact crime can lead to death, serious injury, psychological trauma and/or the loss of property that can, especially for poorer victims, have detrimental consequences. A number of contact crimes are crimes that are social or domestic in nature and usually take place between people who know each other such as friends, family and acquaintances. An analysis of dockets (SAPS, 2007) showed that in almost 90% of assault cases the people involved knew one another. In most instances the motivation for social crimes relate to a misunderstanding (SAPS, 2009), indicating that people in these communities do not have the necessary social skills to deal with these issues in another, less violent way. It also seems as if there is a close relationship between some contact crimes, particularly all categories of assault and factors and conditions like urbanisation, poverty and unemployment, vigilantism, previous offenders as well as alcohol and drugs. Urbanisation causes urban unemployment, a massive growth of informal settlements (especially in or adjacent to existing poor areas) and the disappearance of the rural subsistence economy and social support network. It also creates rising expectations and new needs (SAPS, 2007).

5 Stakeholder Identification and Analysis

Stakeholders include all individuals and groups who are affected by, or can affect, a given operation. Stakeholders consist of individuals, interest groups and organizations (Vanclay, Esteves, Aucamp & Franks, 2015). Stakeholder analysis is a deliberate process of identifying all stakeholders of a project - the individuals and groups that are likely to impact or be impacted by it - and understanding their concerns about the project and/or relationship with it (Vanclay et al, 2015). Stakeholder analysis assists the proponent with understanding the local cultural and political context. It is acknowledged that different stakeholder groups have different interests, and that there are individual differences within stakeholder groups. The geographical area where the proposed Kendal 30 year ash disposal facility will be situated has been exposed to intensive agricultural, mining and industrial development in recent years. The stakeholder groups for this project are also stakeholders in other developments, and there are significant cumulative impacts to consider. Some of the groups include vulnerable parties that have been victims of rapid development who have not shared in the benefits of the development in the area. These parties have been marginalised to live in an area that is not suitable for the development of sustainable communities, but remain there because they do not have any other alternative. The Kendal 30 year ash disposal facility must be considered in this context. The purpose of this section of the report is to introduce the stakeholder groups that will be affected by the proposed project, and giving a snapshot of current conditions and impacts. The following stakeholder groups were identified:

- Residential communities;
  - Eskom Triangle community;
  - Khayalethu Village;
  - Olympic community;
  - Makhosi community;
  - Van Biljon residents.
- Agriculture groups;
  - Commercial farmers (Truter Boerderye and Torero);
  - AFGRI.
- Government;
  - Mpumalanga Provincial Government;
  - eMalahleni Local Municipality;
  - Mpumalanga Province Department of Public Works, Roads and Transport.
- Mining groups;

- Eyethu Coal/Kusile Mining;
- Other mining groups in the area.

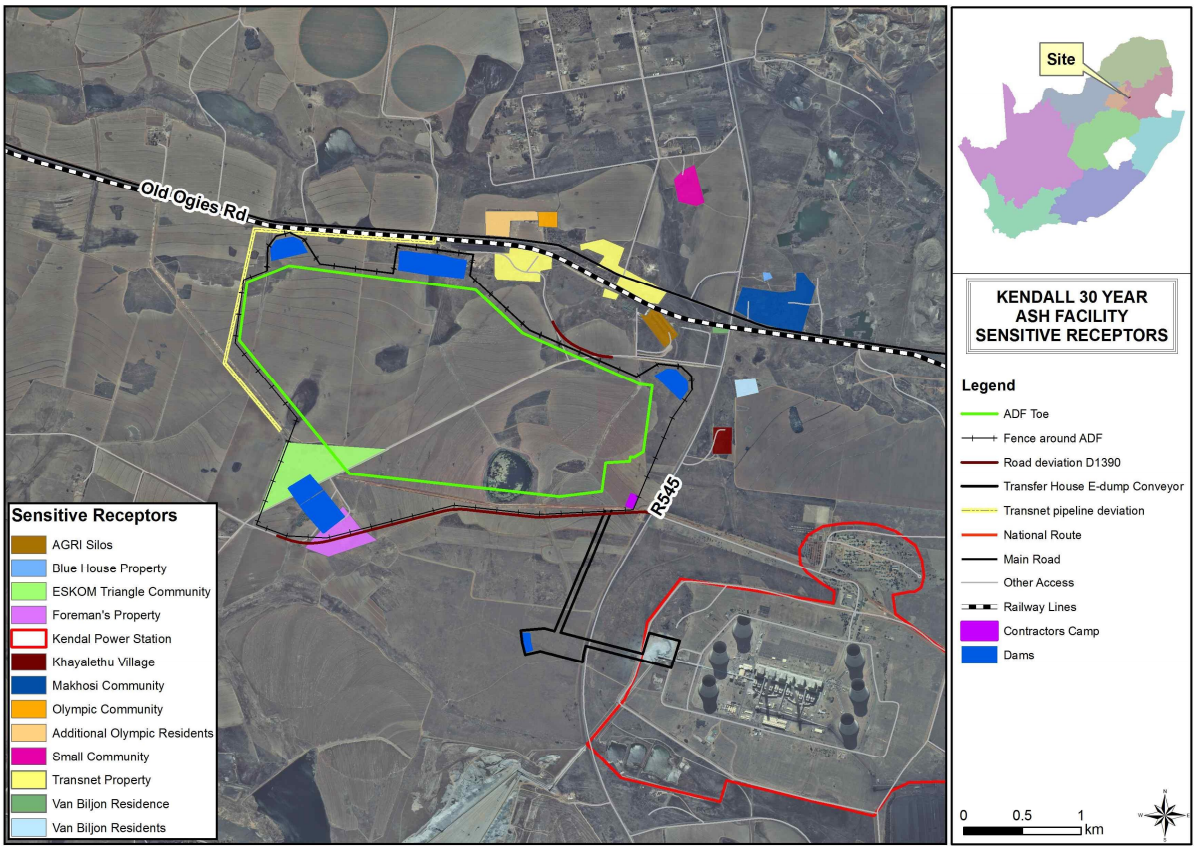
- Parastatal organisations;
  - Transnet;
  - Eskom.

The information presented for this section was collected via site visits, interviews and minutes of meetings conducted by the Zitholele public participation team. The current position of each stakeholder group will be discussed in more detail in the section below.

5.1 Residential communities

Five residential communities have been identified within a 1km radius of the proposed Kendal 30 year ash disposal facility (Figure 22).

Figure 22: Location of closest residential communities.



5.1.1 Eskom Triangle community

The Triangle community consist of 12 families (approximately 68 people) that occupy 14 units on a piece of land that is owned by Eskom. According to the residents, some of them have been living

there for 60 years and have living rights on the property. The 12 families are not related to each other. They started out as farm workers, and although some people in the community work on the mines and a few work as domestic workers, the majority of the community depend on government grants and old age pensions. There are approximately 20 children of school-going age in the community and they attend school in Phola. The school bus picks them up in front of the property in the mornings. The community travels to Ogies to collect pensions, for medical care, shopping and church. There is no public transport, as the roads are too bad and the taxis refuse to travel on these roads. They do not engage in agricultural activities, since the space is limited and water availability is an issue, although some subsistence crops are planted. There are members of the community that own livestock such as cows and chickens – the cattle graze on the property across the road. There are no electricity or running water in the houses on the property. The community uses generators for electricity and collect water from a tap that is fed by a borehole on the property. The water supply can be erratic at times, since the foreman that resides on the neighbouring property must switch on the pump for the borehole manually, and aspects such as safety and cable theft can influence his ability to access the pump. Some community members claim that they stay only on the property because they do not have any other options. They are currently only allowed to maintain and restore their houses, and no extensions or additional buildings may be erected. Community members stated that they have a positive relationship with their landlord. The community highlighted existing environmental impacts caused by the mining and agricultural activities in the area. These impacts include the cracking of houses, health impacts associated with dust (especially amongst the children), nuisance impacts associated with dust, noise impacts created by mining trucks, corrugation of roofs and fences and the impact of dust on their crops and animals. This community falls within the footprint of the proposed Site H.

5.1.2 Khayalethu Village

Homeland Mining and Energy SA (Pty) Ltd (Homeland) relocated the people residing in Khayalethu Village in 2008. There are 15 houses in the village, each with a water tank. The village rely on the harvesting of rainwater and a borehole operated by a windmill for water. If there is no wind, they struggle with water supply. The village has access to electricity. According to the residents, Homeland has not been looking after the infrastructure, and the local municipality is also not forthcoming with the provision of services. The children that live in the village go to school in Phola, and a bus supplied by the Department of Education transports them there. There is no public transport, and residents who do not have their own transport hitchhike to go to Ogies or Witbank for medical services, church and shopping. A resident stated: “ There are no recreational activities,

so we drink for fun". Some of the residents do contract work at Kusile, Balmoral or Kendal. There are a number of graves in the area, and the Kusile Mining group and the heritage impact assessment specialist working on the Kendal 30 year ash disposal facility has approached the community about the exact location of these graves. The community claims that they experience impacts from the current Kendal ash disposal facility, such as health impacts and dust. They further claim that the dust settling on the roofs impact on the harvesting of rainwater.

At a meeting conducted on 18 May 2013 by Geovicon consultants on behalf of Kusile Mining residents were informed of a new mining development and advised that "…they will be severely affected if they remain" and that "…the community must consider being resettled since it will be both unsafe and unhealthy to be so close to an opencast mining operation" (Minutes of meeting held with Khayalethu Village, 13 May 2013). The community members claim that they have not heard from the consultants or Kusile Mining after this meeting. It is a matter of concern that the community that has been relocated quite recently may be relocated again, and that no restoration of livelihoods took place. Community members said that they would prefer to relocate to a municipal area where they can have title deeds for their houses and better access to services. This community is situated approximately 500m to the east of the boundary of the proposed Kendal 30 year ash disposal facility.

5.1.3 Olympic community

The Olympic community is situated south of the old Ogies Road (R555) and west of the R545 intersection, about 700m north from the boundary of the proposed site. It consists of approximately 60 to 80 houses, both formal and informal. Many of the residents came to the area in search for opportunities, and never moved on. There are many migrant workers from KwaZulu-Natal and elsewhere in Mpumalanga residing in this community. Representatives from the eMalahleni Local Municipality claims that many of the residents in the settlement are illegal occupiers and that there are a number of illegal immigrants and people without identification documents living there. These representatives also reported friction within the community and segregation between community groups, resulting in difficulties "to bring them to order". Most of the land that is occupied by the Olympic community belongs to Transnet. The community does not have access to water, electricity and sanitation. In a focus group meeting conducted on 2 March 2015 Transnet indicated that they would not relocate the illegal occupiers from their properties, but liaise with the local municipality to do so (see Zitholele Comments and Response Report (CRR)). The rights of people that illegally occupy the property are protected under the Prevention of Illegal Eviction and the Unlawful Occupation of Land Act (1998).

5.1.4 Makhosi community

The Makhosi Village consists of two parts. The first part is the “Blue Houses”; a few houses situated a small distance from the rest of the community at the northern entrance to the community. Makhosi Village is located on the north-eastern side of the old Ogies (R555) and R545 junction, about 900m from the boundary of the proposed site. There are approximately 200 to 250 structures, both formal and informal. The legal owner of the property where the community is established could not be determined. According to a neighbour, a land claim has been submitted on behalf of himself and the Makhosi community. Access to water, electricity and sanitation is not adequate. The claims of friction within the community and segregation between community groups made by representatives of the eMalahleni local municipality also refer to this community.

The Kendal Community Police Forum is active in all the surrounding communities, and representatives of this forum engaged with the public participation team about challenges in the area. Air pollution and lack of water, electricity and sanitation are existing challenges. Regarding the proposed Kendal 30 year ash disposal facility, community members expressed concern about the distance between community members and the proposed ash disposal facility, the possibility of resettlement, grazing for their livestock, availability of jobs, project communication and the potential impact on gravesites.

5.1.5 Van Biljon Residence

The Van Biljon Residence is about 600m north-east of the boundary of the proposed site on the western side of the old Ogies (R555) and R545 crossing. Mr van Biljon’s father owned one of four portions of the farm Heuvelfontein. The rest of the properties where owned by the Shill family. Mr van Biljon’s father died in 1978, and Mr van Biljon claims that he is a life tenant on the property (meaning he received the right to live at or use the property during his lifetime). Mr van Biljon also claims that he submitted a land claim with the Makhosi community for the property where they are currently residing.

5.2 Agricultural groups

Agriculture, together with mining, is the predominant land use in the area. Commercial farmers operate in the directly affected area.

5.2.1 Commercial farmers

The two commercial farming enterprises that will be affected by the proposed Kendal 30 year ash disposal facility are Truter Boerderye and Torero Investments. While the land owned by these enterprises can commercially be sold to Eskom, and rented back to the owners until Eskom need to use it, the cumulative impact that the coal mines and coal fired power stations in the area have on agricultural activities must be acknowledged. As an example eight mines surround the property owned by Torero Investments. Although it is a commercial enterprise, the farmers emphasised that the impact is not merely financial, as farming is also a lifestyle choice and their homes are in the area. Despite the negative impacts experienced, the farmers believe that the soil in the area is of the most fertile in the country, and therefore they are willing to absorb some of the impacts. Existing impacts mentioned by the farmers include an influx of people leading to issues such as poaching, arson, theft and squatter camps; issues with water quality impacting on the health of animals and crops; health impacts such as sinusitis; air quality issues; and the effect of coal dust and ash on animal, crop and human health. Farming commodities include cattle, maize, soya and potatoes.

5.2.2 AFGRI

AFGRI is an agricultural services and processing company, with grain commodities as a core focus. The company owns 69 grain silos across South Africa, of which the Kendal silo is one. The Kendal silo is situated approximately 450m north-east of the boundary of the proposed site. All the silos are registered as food safety facilities (http://www.afgri.co.za/grain-management-brochure/) as required under the Agricultural Product Standards Act (1990). The Kendal silo employs approximately 20 people on a permanent basis, and temporary workers as needed. The farmers in the area also frequent the silos to deliver their products. The management of the silos expressed a concern about the potential health impact the proposed Kendal 30 year ash disposal facility will have on their workers and visitors. The commodities handled by the silos include maize, wheat and soya. Although all these commodities are sensitive to ash dust, soya is more sensitive because it is oil-based. Another concern is the potential effect that the ash dust will have on the crops. Ash residue may affect the grade of the produce, and thereby affect the price. In the long run, there is a concern about the potential impact on food security.

The farmers use the D1390 gravel road to deliver their crops to the silos. The D1390 must be re-routed to accommodate the proposed Kendal 30 year ash disposal facility. AFGRI expressed a concern that a significant increase in the distance to the silos will have a negative impact on the

farming community; however, the increase in distance has been calculated to be less than 500m and is therefore not significant.

5.3 Government

South Africa has a three-tier government consisting of national, provincial and local government. All three levels of government have legislative and executive powers in their own domain (RSA, 2013), and are responsible for a different aspect of service delivery.

5.3.1 Mpumalanga Provincial Government

The provincial government is responsible for housing, schools and clinics (NCP, 2012). The Mpumalanga Provincial Government is therefore the appropriate party to liaise with about the housing situation of some of the communities in the area around the proposed site for the Kendal 30 year ash disposal facility.

5.3.2 eMalahleni Local Municipality

Local municipalities are responsible for planning, water delivery, electricity, sanitation and refuse removal (NPC, 2012). Consultation with the communities that will potentially be impacted by the proposed project revealed that basic services such as water, electricity and sanitation are not provided in the area, and therefore the Emalahleni LM is not fulfilling their mandate. There also seem to be a lack of communication between communities and the Emalahleni LM. All South African municipalities are demarcated into wards, and a ward councillor and ten elected members lead each ward. The proposed site for the Kendal 30 year ash disposal facility falls in Ward 30 of the Emalahleni LM. Ward 28 borders Ward 30. Representatives of the EML indicated that there are existing problems in the affected communities such as community members without identity documents (which will exclude them from certain democratic processes), illegal occupation of properties, illegal immigrants, friction within the communities and segregation between some community groups. These problems make it a challenge to govern the community from the perspective of the Emalahleni LM.

5.3.3 Mpumalanga Provincial Department of Public Works, Roads and Transport

The Mpumalanga Provincial Department of Public Works, Roads and Transport is responsible for the D1390 road and must give permission for the road deviation in terms of the Provision of the Advertising on Roads and Ribbon Development Act (1940). Permission for the road deviation has been obtained from this department, on condition that the road remains open as a public road, the

intersection meet design standards and the radius meet design standards of 80 Km/h. The department indicated that it will not be financially involved by any means in the process, but that it will assist and monitor the whole process if and when necessary. The applicant must carry all costs and risks associated with the road deviation, and if the department finds that the Kendal 30 year ash disposal facility cause significant numbers of additional trucks on the road, they may require the applicant to surface the road or part thereof.

5.4 Mining groups

Mining, together with agriculture is the predominant land use in the area. The area around the proposed site for the Kendal 30 year ash disposal facility has historically been exposed to mining activities, and large sections of land are under-mined.

5.4.1 Eyethu Coal/Kusile Mining

Eyethu Coal/Kusile Mining applied for prospecting rights on portions of Site H and Portion 20 of Schoongezicht. Prospecting revealed that Site H does not have coal resources, and Kusile Mining undertook to change their mining right application to exclude the areas required by Eskom. The Mpumalanga Department of Economic Development, Environment and Tourism (MDEDET) authorised the Heuvelfontein Colliery in September 2014. Ferret Coal, owned 51% by Kusile Mining, owns Heuvelfontein Portion 20, a piece of land that is also affected by the proposed Site H. Eyethu Coal/Kusile Mining is an important stakeholder as future neighbour and current rights holder.

5.4.2 Other mining groups in the area

There are a significant number of mines active in or planned for the area, including Khanyisa, Intibane, Mbuyelo (Rirhandzu Colliery), Zibulo, New Largo, Khutuka, Leeufontein, Bankfontein, Lakeside and Klipspruit amongst others. These mines share access roads and cumulatively contribute to the existing impacts experienced in the area.

5.5 Parastatal organisations

Parastatal organisations are state owned enterprises. The project proponent, Eskom is such an enterprise. Another enterprise that will be affected by the proposed project is Transnet.

5.5.1 Transnet

Transnet is part of the freight logistics chain in South Africa. It consists of five operating divisions, of which Transnet pipelines are one. Transnet pipelines will be affected by the proposed Kendal 30 year

ash disposal facility, since it has a fuel pipeline that cross the site, which will have to be realigned. The pipeline cannot be taken out of operation for more than two or three days. The realignment of the fuel pipeline will have significant financial implications. Transnet also owns some of the properties adjacent to the proposed site, including properties where communities reside. Transnet indicated that they do not relocate people from their property, but engage with the municipality to provide alternative accommodation.

5.5.2 Eskom

Eskom generates the majority of the electricity used in South Africa and a large portion of the electricity used in Africa. Eskom is not only the project proponent, but also the owner of infrastructure that will be affected by the proposed site, such as transmission and distribution lines. Eskom will construct the proposed Kendal 30 year ash disposal facility.

5.6 Human Rights

Core human rights principles—participation, accountability and transparency, non-discrimination, empowerment and linkage to the international human rights framework—align in spirit with the social impact assessment principles, therefore it is necessary to adopt a human rights based approach to SIA. The adoption of the United Nations Guiding Principles on Business and Human Rights (UNGP) in 2011 confirmed the corporate responsibility to respect human rights (Vanclay et al, 2015). A company such as Eskom can only mitigate and manage human rights infringements if it is aware of the potential for these impacts to take place, and the associated risks. Many social impacts can be understood in human rights terms. This includes recognising project-affected individuals and communities as human rights-holders with legal entitlements, including the right of legal redress for impacts on their human rights. Thus when a project creates social impacts, it may also be in breach of its responsibility to respect human rights (Vanclay et al, 2015). Protection of an individual's rights is embedded in a range of international and national principles, law, conventions, guidelines and practices. Human rights is a complex concept, but the United Nations (1987) provides a general definition:

> "…those rights, which are inherent in our nature and without which we cannot live as human beings. Human rights and fundamental freedoms allow us to fully develop and use our human qualities, our intelligence, our talents and our conscience and to satisfy our spiritual and other needs. Human rights are based on mankind's increasing demand for a life in which the inherent dignity and worth of each human being will receive respect and protection."

Human rights are enshrined in the South African Constitution (1996), which forms the basis of all the country's legislation. Chapter 2 consists of a Bill of Rights, which explicitly spells out the rights of every South African citizen. The human rights that are safeguarded by the Constitution of the Republic of South Africa 1996 in the Bill of Rights and which are relevant to the proposed Kendal 30 year ash disposal facility, includes:

- Right to a healthy environment;
- Rights of access to land and to security of tenure;
- Right to adequate housing and protection against evictions and demolitions; and
- Children's rights to basic nutrition, shelter, basic health care services and social services.

The groups whose rights may potentially be affected are the Triangle Community who will be relocated should the project proceed, and the other communities living within a 1km radius of the proposed site, especially from the perspective of a right to a healthy environment. Some of the human rights impacts are legacy human rights impacts that occur due to a combination of factors and cumulative impacts. It must be considered that the potentially affected communities can all be seen as vulnerable communities with a low socio-economic status, where there are high levels of poverty and unemployment. Vulnerability refers to a situation or condition characterized by low resilience and/or higher risk and reduced ability of an individual, group or community to cope with shock or negative impacts. Vulnerability is associated with having low socio-economic status, disability, ethnicity, or one or more of the many factors that influence people's ability to access resources and development opportunities (Vanclay et al, 2015).

Human rights cannot be considered without considering environmental justice. Hornberg and Pauli (2007) define environmental injustice as an uneven distribution of environmental quality between different social groups and relate decreasing socio-economic status to an increasing burden of environmental hazards. Environmental justice acknowledges that some groups within the population face a larger risk from exposure to environmental hazards than others (Ikeme, 2003). The communities that will be affected by the proposed Kendal 30 year ash disposal facility are exposed to multiple sources such as mines, commercial agriculture and existing and new power stations that contribute or will potentially contribute to the water and air pollution in the area, and being vulnerable communities, do not have the resources to protect themselves or move away from the area, mainly due to socio-economic reasons. Paben (2014) states that environmental justice impacts from coal are significant from the cradle to the grave, with health and environmental impacts for people working in mines and power stations, and people who live near these places. Acknowledging that potential human rights impacts and environmental justice issues are possible in the project area

will assist Eskom with mitigating and managing these issues, and to avoid potential pitfalls. The mitigation measures suggested as part of the impact management strategy will include measures to address potential human rights impacts and environmental injustice.

6 Impact assessment criteria

It must be stated that the impact tables and ratings were adapted from the environmental sciences and that it is not always possible to compartmentalise the social impacts. For the sake of consistency this has been attempted, but it is not innate to social sciences. Allowance for the changing and adaptive nature of social impacts should be made when interpreting the impact tables.

6.1 Impact Assessment Methodology

In order to ensure uniformity, a standard impact assessment methodology was utilised so that a wide range of impacts could be compared. The impact assessment methodology makes provision for the assessment of impacts against the following criteria:

- Significance;
- Spatial scale;
- Temporal scale;
- Probability; and
- Degree of certainty.

A combined quantitative and qualitative methodology was used to describe the impacts for each of the aforementioned assessment criteria. A summary of each of the qualitative descriptors along with the equivalent quantitative rating scale for each of the aforementioned criteria is given in Table 2.

Table 2: Quantitative rating and equivalent descriptors for the impact assessment criteria.

RATING	SIGNIFICANCE	EXTENT SCALE	TEMPORAL SCALE
1	VERY LOW	*Proposed site*	Incidental
2	LOW	*Study area*	Short-term
3	MODERATE	*Local*	Medium-term
4	HIGH	*Regional / Provincial*	Long-term
5	VERY HIGH	*Global / National*	Permanent

A more detailed description of each of the assessment criteria is given in the following sections.

6.1.1 Significance Assessment

Significance rating (importance) of the associated impacts embraces the notion of extent and magnitude, but does not always clearly define these since their importance in the rating scale is very relative. A more detailed description of the impact significance rating scale is given in Table 3 below.

Table 3: Description of the significance rating scale.

RATING		DESCRIPTION
5	VERY HIGH	Of the highest order possible within the bounds of impacts which could occur. In the case of adverse impacts: there is no possible mitigation and/or remedial activity which could offset the impact. In the case of beneficial impacts, there is no real alternative to achieving this benefit.
4	HIGH	Impact is of substantial order within the bounds of impacts, which could occur. In the case of adverse impacts: mitigation and/or remedial activity is feasible but difficult, expensive, time-consuming or some combination of these. In the case of beneficial impacts, other means of achieving this benefit are feasible but they are more difficult, expensive, time-consuming or some combination of these.
3	MODERATE	Impact is real but not substantial in relation to other impacts, which might take effect within the bounds of those which could occur. In the case of adverse impacts: mitigation and/or remedial activity are both feasible and fairly easily possible. In the case of beneficial impacts: other means of achieving this benefit are about equal in time, cost, effort, etc.
2	LOW	Impact is of a low order and therefore likely to have little real effect. In the case of adverse impacts: mitigation and/or remedial activity is either easily achieved or little will be required, or both. In the case of beneficial impacts, alternative means for achieving this benefit are likely to be easier, cheaper, more effective, less time consuming, or some combination of these.
1	VERY LOW	Impact is negligible within the bounds of impacts which could occur. In the case of adverse impacts, almost no mitigation and/or remedial activity is needed, and any minor steps which might be needed are easy, cheap, and simple. In the case of beneficial impacts, alternative means are almost all likely to be better, in one or a number of ways, than this means of achieving the benefit. Three additional categories must also be used where relevant. They are in addition to the category represented on the scale, and if used, will replace the scale.
0	NO IMPACT	There is no impact at all - not even a very low impact on a party or system.

6.1.2 Spatial Scale

The spatial scale refers to the extent of the impact i.e. will the impact be felt at the local, regional, or global scale. The spatial assessment scale is described in more detail in Table 4.

Table 4: Description of the significance rating scale.

RATING		DESCRIPTION
5	Global/National	The maximum extent of any impact.
4	Regional/Provincial	The spatial scale is moderate within the bounds of impacts possible, and will be felt at a regional scale (District Municipality to Provincial Level).
3	Local	The impact will affect an area up to 10 km from the proposed site.
2	Study Area	The impact will affect an area not exceeding the Eskom property.
1	Isolated Sites / proposed site	The impact will affect an area no bigger than the ash disposal site.

6.1.3 Duration Scale

In order to accurately describe the impact it is necessary to understand the duration and persistence of an impact in the environment. The temporal scale is rated according to criteria set out in Table 5.

Table 5: Description of the temporal rating scale.

RATING		DESCRIPTION
1	Incidental	The impact will be limited to isolated incidences that are expected to occur very sporadically.
2	Short-term	The environmental impact identified will operate for the duration of the construction phase or a period of less than 5 years, whichever is the greater.
3	Medium term	The environmental impact identified will operate for the duration of life of the project.
4	Long term	The environmental impact identified will operate beyond the life of operation.
5	Permanent	The environmental impact will be permanent.

6.1.4 Degree of Probability

The probability or likelihood of an impact occurring will be described, as shown in Table 6 below.

Table 6: Description of the degree of probability of an impact occurring.

RATING	DESCRIPTION
1	Practically impossible
2	Unlikely
3	Could happen
4	Very Likely
5	It's going to happen / has occurred

6.1.5 Degree of Certainty

As with all studies it is not possible to be 100% certain of all facts, and for this reason a standard "degree of certainty" scale is used as discussed in Table 7. The level of detail for specialist studies is determined according to the degree of certainty required for decision-making. The impacts are discussed in terms of affected parties or environmental components.

Table 7: Description of the degree of certainty rating scale.

RATING	DESCRIPTION
Definite	More than 90% sure of a particular fact.
Probable	Between 70 and 90% sure of a particular fact, or of the likelihood of that impact occurring.
Possible	Between 40 and 70% sure of a particular fact, or of the likelihood of an impact occurring.
Unsure	Less than 40% sure of a particular fact or the likelihood of an impact occurring.
Can't know	The consultant believes an assessment is not possible even with additional research.

6.2 Quantitative Description of Impacts

To allow for impacts to be described in a quantitative manner in addition to the qualitative description given above, a rating scale of between 1 and 5 was used for each of the assessment criteria. Thus the total value of the impact is described as the function of significance, spatial and temporal scale as described below.

$$\textit{Impact Risk} = \frac{(\text{SIGNIFICANCE} + \textit{Spatial} + \text{Temporal})}{3} \times \frac{\text{Probability}}{5}$$

The impact risk is classified according to 5 classes as described in Table 8.

Table 8: Impact Risk Classes.

RATING	IMPACT CLASS	DESCRIPTION
0.1 – 1.0	1	Very Low
1.1 – 2.0	2	Low
2.1 – 3.0	3	Moderate
3.1 – 4.0	4	High
4.1 – 5.0	5	Very High

7 Social Impact Assessment

"Almost all projects almost always cause almost all impacts. Therefore more important than predicting impacts is having on-going monitoring and adaptive management." Frank Vanclay.

7.1 Existing and cumulative impacts

Given that Kendal Power Station is an existing facility, with an existing ash disposal facility, it must be considered that most of the impacts are existing impacts. When considering existing impacts, the complexity of the social environment must be contemplated. Social impacts are not site-specific, but occur in communities surrounding the site. The high concentration of human and industrial activities taking place in a relatively small area surrounding the project site has caused a number of impacts. From a social perspective it is not possible to pinpoint which percentage of any given impact result from a specific activity. For example, agricultural, mining and power generation activities may cause an influx of people into an area due to the possibility of employment creation. It is not possible to say that 10% of people moving into the area looked for an agricultural job, 40% for a job at a power station and 60% at a mine. It is, however possible to say that all these industries contributed to the honeypot effect (project-induced in-migration where people move to the project site in search of work or economic opportunities that arise from the project) that is experienced in the area. The existing social impacts in the area are therefore not caused by the Kendal Power Station and its activities in isolation, but the facility does contribute to these impacts, and will continue to do so through the life of the Kendal 30 year ash disposal facility. The existing impacts that are associated with the proposed project will be discussed in the paragraphs below.

7.1.1 Health impacts (Construction and Operation)

7.1.1.1 Description of impact

Community members and people living and working in the surrounding areas all mentioned health impacts associated with air quality. Health issues mentioned include chronic respiratory diseases such as asthma, bronchitis, emphysema and other health issues such as sinusitis. It is also a matter of concern that people harvest rainwater that may be contaminated, and grow crops for human consumption in soil that could possibly be contaminated, especially in the vulnerable communities within a 1km radius of the proposed site. The major concern is the potential health impacts that may occur over time due to chronic exposure. These communities rely on borehole water and some of them live in informal houses that do not provide adequate protection against environmental exposure to pollutants. There are a number of polluting sources in the area, and this impact will continue through construction into operation.

7.1.1.2 Mitigation measures

Eskom should initiate a local environmental forum with representatives of the mining and agricultural industries within a 20km radius of the proposed project. Each party is responsible for water and dust monitoring associated with its activities, and by combining results a better picture of the cumulative effects can be obtained, which will assist with managing these impacts. Recommendations of the water and air quality studies should be implemented stringently. Physical dust barriers such as trees or walls must be erected between the proposed Kendal 30 year ash disposal facility and communities that are located in the prevailing wind direction. Should the communities not be relocated, it is recommended that a human health study (similar to that required for gold mines) should be commissioned in the area to determine the current health baseline in terms of pollution plumes and potential impacts on human health. This study should be repeated every third year. Through the environmental forum, all industries in the area should contribute to the cost of such a study. The local, district and provincial municipalities and Departments of Environmental and Water Affairs should be involved in the forum. If the health impacts are deemed significant, the municipalities should start a process of providing alternative accommodation in established municipal areas in close proximity. The contact details of Eskom's community liaison person and the grievance management procedure must be shared with the communities to ensure a direct communication channel between the communities and Eskom, which will assist with dealing with issues faster.

7.1.2 Quality of crops decrease (Construction and Operation)

7.1.2.1 Description of impact

There is a concern that the ash dust settling on the crops and the soil around the crops may decrease the quality of the crops, which in turn will have a negative economic impact on the farmers. Less produce from the area will also have an impact on food security in the long term.

7.1.2.2 Mitigation measures

Dust suppression measures as recommended in the air quality study must be applied. It is recommended that the agricultural role players meet with the soil and air quality specialists for a feedback session, and a focus group with all these parties and Eskom is conducted to agree on the most suitable mitigation, monitoring and management measures before the EIA is submitted. As part of the proposed environmental forum, the monitoring results must be shared with all the parties involved to ensure any problems are picked up and dealt with early on.

7.1.3 Nuisance dust lead to a decrease in quality of life experience (Construction and

Operation)

7.1.3.1 Description of impact

Dust is an existing problem in the area, and agriculture and mining activities contribute to the problem, together with the existing ash disposal facility of the Kendal Power Station. Local residents experience dust as a nuisance – it stains the buildings, settle in their houses and prevents them from hanging their washing outside.

7.1.3.2 Mitigation measures

The mitigation suggested in the air quality study must be implemented. Physical dust barriers such as trees or walls must be erected between the proposed Kendal 30 year ash disposal facility and communities that are located in the prevailing wind direction. Monitoring and management of dust must be discussed in the proposed environmental forum.

7.1.4 Lack of infrastructure (Construction and Operation)

7.1.4.1 Description of impact

Due to the high concentration of mining, agriculture and industrial activities in the area, people have migrated into the area in search for opportunities. Some of these migrants came from other provinces and from neighbouring countries, and some are illegal immigrants. Several people do not have identity documents, which make service delivery a challenge. While there are people who benefitted from the development in the area, many only managed to obtain short term jobs, and do not have the resources or will to go back the their areas of origin, due to limited opportunities in these areas. The social and physical infrastructure in the area is insufficient. There are limited access to electricity, water and sanitation. There are no schools, clinics or churches and the municipality does not deliver the services due to residents in the area. The human settlements in the area are not sustainable and residents are caught in a downward spiral of poverty. The area reflects environmental injustice and the greater societal problems experienced in South Africa. Although the industries in the area undeniably contribute to the economic development of the country at large, the social development opportunities of the residents in the area is severely lacking, and residents are paying the ultimate price.

7.1.4.2 Mitigation measures

It must be understood that there is not only one party responsible for the current situation, but that all parties do contribute to it, even if it is just by being present in the area. It would therefore not be fair or possible to expect a single proponent to resolve it, but as responsible corporate citizens, all parties should contribute to seeking a solution and better outcomes, especially because most

industrial role players have staff that reside in the local communities. Local government must be consulted when Corporate Social Investment measures proposed for the area is considered, and it is recommended that the different role players join forces to create a bigger impact as opposed to several small interventions. Eskom should also capitalise on its significant presence in the area, by putting pressure on the local government to use the rates and taxes that it generates in the interest of affected communities.

7.1.5 Water quality (Operation)

7.1.5.1 Description of impact

The local communities and agriculture group depends on surface and ground water for their livelihoods. Any negative impact on water quality will have a negative impact on the livelihoods of these parties.

7.1.5.2 Mitigation measures

It is acknowledged that there are processes in place to manage potential water pollution and monitor water quality. These processes should be applied rigorously. Emergency measures in place for pollution incidences must include assessing the risks to communities and the farming industry, supplying them with clean water if the source of pollution comes from the proposed Kendal 30 year ash disposal facility and remediating the water sources of these parties as soon as possible.

7.1.6 Employment (Construction, Operation and Closure)

7.1.6.1 Description of impact

The proposed Kendal 30 year ash disposal facility will be constructed and operated by current Eskom employees. It is not anticipated that significant employment creation will take place. Although no new opportunities will be created, the proposed facility will ensure job security for the current employees, and contribute to their skills development. These opportunities will be lost when the Kendal power station close.

7.1.6.2 Mitigation measures

Job security and skills development is a positive impact. To enhance this impact, Eskom should ensure that employees develop transferable skills. If any vacancies are available, local people should be given preference. On closure, skilled people should be transferred to similar facilities in the area, and fair and transparent retrenchment procedures should be followed.

7.1.7 Electricity generation (Operation and Closure)

7.1.7.1 Description of impact

South Africa currently experiences an energy crisis, and the generation of electricity is a high priority in order to ensure social and economic development. Despite the issues associated with coal generated electricity, the continued operation of the Kendal power station is in the interest of the South African community at large, as it provides a current solution. The continued operation of the power station in this point in time will have a positive impact on the country. It is assumed that the power station will only close down once there is no further need for the electricity it generates.

7.1.7.2 Mitigation measures

The continued operation of the Kendal Power Station is a positive impact. To enhance this impact it should be ensured that this does not happen at the cost of the communities, and Eskom should adhere to the mitigation measures proposed by the specialists.

7.2 New impacts specifically created by the proposed Kendal 30 year ash disposal facility

This section describes and discuss impacts specific to the Kendal 30 year ash disposal facility. These impacts would not occur without the project.

7.2.1 Impacts on food security (Pre-construction, construction and operation)

7.2.1.1 Description of impact

The area earmarked for the proposed Kendal 30 year ash disposal facility is currently used for agriculture, specifically the production of food. The agricultural industry in the area has lost significant land to mining and industrial activities. Farmers are concerned about the impact of the loss of high potential agricultural land on food security in the future. They acknowledge that the ash disposal facility will be rehabilitated, but feel that once the land has been disturbed it will never yield the same quality of crops. The other side of the coin is the current environmental degradation in the area that can be attributed to the mining, industrial and agricultural activities.

7.2.1.2 Mitigation measures

It is difficult for the proponent to mitigate this impact, as other development in the area is not within its control. It is recommended that Eskom work closely with the agricultural role players, and if Eskom have land available that can be used for food production, it should be rented out to farmers for this purpose. Rehabilitation of the ash disposal facility should also focus on achieving a high quality of soil to ensure the future land use of the area could be used for economic purposes.

7.2.2 Loss of income (Construction and operation)

7.2.2.1 Description of impact

Some farmers will be displaced from land that they have been using for commercial agricultural purposes. Although the land will be bought from them in a commercial transaction, it still means that the area on which they practice their agricultural activities will decrease, and they will no longer be able to use it to generate an equivalent income. It is also not a case of willing buyer/willing seller, as they would probably not sell the land if it were not for the project. Good agricultural land is a scarce commodity in the area. Although there may be land available further afield, it is not commercially viable for farmers to travel long distances between their agricultural activities. Some agricultural implements are also a high risk or not allowed to travel on public roads. Smaller areas to farm in may force farmers to retrench some of their workers. It must be acknowledged that farming activities in the area has been impacted on significantly by the presence of Kusile power station and the mines that are developed to feed it. The cumulative impacts and numerous EIA processes to which the farmers were subjected caused significant stakeholder fatigue amongst the farming community, especially because they are of the opinion that they are paying the price for all the development by having to endure dust, crime, arson and water quality issues amongst others, all brought about by development. They are almost always forced to give up their land in the interest of industry, while they were in the area first.

7.2.2.2 Mitigation measures

Farmers indicated that they would prefer land-for-land swops if it is at all possible. If not, they should be paid the replacement cost of their lost assets. Replacement cost is an economics and insurance concept that refers to the full cost of replacing an asset. The valuation for compensation purposes of assets destroyed by a project can be controversial. Insurance assessors often use the depreciated value of an asset. In project-induced displacement, such as is the case with the proposed Kendal 30 year ash disposal facility, full replacement cost should be provided to ensure that people are not made worse off (Vanclay et al, 2015). Given that there is significant time left before the construction of the proposed Kendal 30 ash disposal facility will commence, Eskom should rent the properties to the farmers at a reasonable rate to ensure that they can continue with their current economic activities and have enough time to look for alternatives. The name of the community liaison officer and grievance mechanism must be given to the farmers as it would be beneficial to both Eskom and the farming community to have solid long term relationships instead of having to resort to crisis management should anything happen.

7.2.3 Potential economic impact on road users (Construction and Operation)

7.2.3.1 Description of impact

The D1390 road must be re-routed as it currently runs across the proposed site. The farming community mainly use this road to access the AFGRI silos. Some of the mining groups also use the road to access their properties. There were concerns that the re-routing of the road would increase travel distances significantly. The traffic study found that the road would be less than 500m longer, and therefore this is not a significant impact. The period of road construction can potentially create some nuisance impacts, but it can be mitigated and managed.

7.2.3.2 Mitigation Measures

The new alignment of the D1390 must be completed before the old road is closed. The requirements of the Mpumalanga Provincial Department of Public Works, Roads and Transport must be adhered to. Given the presence of communities in the area, stringent health and safety requirements must be implemented during construction.

7.2.4 Resettlement of the Triangle Community (Pre-construction)

7.2.4.1 Description of impact

The Triangle community live on Site H, and in order to construct the Kendal 30 year ash disposal facility they must be resettled. Resettlement is the planned process of relocating people and communities from one location to another as part of the project-induced land acquisition necessary to allow a project to proceed. Resettlement is regarded as involuntary when the location of the project is fixed and local communities have, in effect, no choice but to be resettled (Vanclay et al, 2015), as in the case of the Triangle community. The Triangle community consist of 12 families (approximately 68 people) that occupy 14 units on a piece of land that is owned by Eskom. According to the residents, some of them have been living there for 60 years and have living rights on the property. At this stage they are not allowed to add any rooms or extensions to their houses.

Resettlement causes significant social impacts. Being displaced and/or resettled can be a very traumatic experience for people, disrupting their sense of place, their livelihoods, their social networks and community connectedness. Resettlement is a major cause of human rights risks for companies. However, where projects are genuinely committed to a shared value proposition, the emotional distress from physical and economic displacement can be minimised and many livelihood benefits can be created when resettlement processes are effectively implemented (Vanclay et al, 2015). The Triangle community is seen as a vulnerable community, and in order to minimise the fear and anxiety associated with the proposed resettlement, Eskom should include them in the process

from the start.

7.2.4.2 Mitigation measures

The costs and time taken to do resettlement are typically underestimated, leading to project delays and cost over-runs, therefore the resettlement process must commence as soon as the Environmental Authorisation is issued. Because resettlement is a major task in itself, and such an impact, resettlement can be regarded as a project within a project. Just like the project itself, the act of resettlement is a planned intervention that creates social impacts and therefore is a process that needs to be managed carefully and planned and conducted in a participatory way. Resettlement should be regarded both as an impoverishment risk, and an opportunity for development especially when all feasible opportunities for livelihoods enhancement and local content are fully explored. Resettlement is the planned process of relocating people and communities from one location to another as part of the project-induced land acquisition necessary to allow a project to proceed (Vanclay et al, 2015). The resettlement process must be done independent of the EIA process, and commence as soon as possible, once the Environmental Authorisation is issued . It is important that it is a participatory process with significant input from the affected communities. The resettlement process is intended to fully re-establish people in well-functioning communities and with appropriate sustainable livelihoods. The social impacts on host communities (the communities which will host the people being resettled) also need to be considered, and there must be risk management and benefits to host communities as well as to the relocated peoples. It is recommended that the Triangle community must be relocated to an established urban area with access to services, and be given title deeds of the houses to ensure security of tenure. Eskom must use its Resettlement Policy Framework (RPF) that outlines the project's policy and general procedures about how land acquisition, resettlement, compensation and livelihood restoration and enhancement will be undertaken.

Eskom's resettlement specialist must develop a Resettlement Action Plan (RAP) that fully details the operational process of enacting the resettlement. To avoid speculative or opportunistic behaviour by local people and to manage in-migration, an inventory of houses, other buildings and all assets should be undertaken as soon as practical. There should be a firm Cut-off Date after which no additional structures or other assets become eligible for compensation. Good communication with affected communities and a fair resettlement and compensation process will assist with obtaining approval of the cut-off deadline from the community. Because resettlement is a project within a project, there needs to be a high level of coordination between resettlement activities and the rest of the project (Vanclay et al, 2015).

The resettlement process should not be considered to be complete until all negative impacts of resettlement have been addressed. A Completion Audit should be undertaken by an independent external party to assess whether all impacts have been addressed, how the standard of living of resettled individuals compares to their previous situation, whether they have remaining grievances, whether international standards and national legislation has been observed, and whether all provisions within the RAP have been met. The Completion Audit should only be undertaken once all mitigation measures have been substantially completed and once displaced persons have been provided adequate opportunity and assistance to sustainably restore their livelihoods. This will necessarily be several years after being resettled, and not straight after the relocation (Vanclay et al, 2015). For resettlement to be sustainable, Eskom must be able to exit in a responsible manner at some point in time. It is very important, therefore, to plan for exit during the development of the RAP. The Exit Plan should be agreed with the community and approved by the regulatory authority. In addition, the capacity (in human and financial terms) of local governments to take over the management of resettlement towns is critical to the long-term improvement of livelihoods. Building this capacity within government should therefore be part of exit planning.

7.3 Impact tables

The impact tables are presented below:

Table 9: Impacts during the pre-construction and construction phases

PRE-CONSTRUCTION & CONSTRUCTION PHASE									
Activity	Description of Impact	Impact type	Spatial Scale	Duration	Significance	Probability	Rating	Mitigation Measures	Interpretation
Generation of dust due to construction activities	Health impacts	Existing	3	2	4	5	3 - MOD	Establish environmental forum. Erect physical dust barriers. Implement recommendations of air quality study. Conduct human health study. Monitor dust levels to ensure human health is not compromised.	There are existing health impacts taking place due to the current facility and other mining and agricultural activities in the area.
		Cumulative	3	2	4	4	2,4 - MOD		Given that there is an existing facility, it is not anticipated that more health impacts will take place, however, the proposed facility is moving closer to vulnerable communities.
		Residual	3	2	4	4	2,4 - MOD		There will always be dust in the area and the mitigation is designed to ensure that communities are not exposed to dangerous levels of pollution
Generation of dust due to construction activities	Quality of crops decrease	Existing	3	2	4	4	2,4 - MOD	Dust suppression mitigation as recommended by the air quality specialist. Focus group with agricultural groups, air quality and soil specialist to decide best way to manage impact. Share monitoring results in proposed environmental forum.	There are a number of activities in the area that contribute to the generation of dust, including agricultural activities. Farmers are of the opinion that dust affect the quality of crops.
		Cumulative	3	2	4	4	2,4 - MOD		The proposed Kendal 30 year ash disposal facility will be a continuation of the existing ash disposal facility, and should not create extra dust, but will bring the dust impact closer to some of the affected parties.

PRE-CONSTRUCTION & CONSTRUCTION PHASE									
Activity	Description of Impact	Impact type	Spatial Scale	Duration	Significance	Probability	Rating	Mitigation Measures	Interpretation
		Residual	3	2	3	3	1,6 - LOW		Although it is difficult to control dust, it is possible if all role players cooperate and manage their own activities.
Generation of dust due to construction activities	Dust nuisance lead to frustration and lowers perceived quality of life	Existing	3	2	3	5	2,7 - MOD	Dust suppression mitigation as recommended by the air quality specialist. Erect physical dust barriers. Discuss monitoring and management in environmental forum to find sustainable solutions	Communities already complain about dust in their houses
		Cumulative	3	2	3	5	2,7 - MOD		The ash disposal facility will move closer to communities
		Residual	3	2	3	4	2,1 - MOD		Dust mitigation will provide some relief.
Influx of people looking for economic opportunity	Lack of infrastructure	Existing	4	2	4	5	3,3 - HIGH	Consult with local government. Join Corporate Social Investment (CSI) initiatives. Use presence in area to influence government.	There are no physical and social infrastructure to serve the communities in the area, many who are there due to the honeypot effect.
		Cumulative	4	2	4	5	3,3 - HIGH		This project will not significantly contribute to this impact.
		Residual	4	2	3	4	2,4 - MOD		Through a joint effort with all the stakeholders in the area this impact can become less severe.
Construction of ash disposal facility	Create employment opportunities	Existing	2	2	4	4	2,1 - MOD	Employees continue in current jobs. Develop transferable skills. If any opportunities arise, employ local people.	No new jobs will be created.
		Cumulative	2	2	4	4	2,1 - MOD		Limited or no opportunities for local residents.
		Residual	2	2	5	5	3 - MOD		If opportunities arise, local people will be the beneficiaries
Change of landuse from agriculture to industrial	Food security	Existing	5	2	3	3	2 - LOW	Work closely with agricultural industry. Rent available land to farmers. Ensure high quality soil rehabilitation.	Arable land is currently being lost to industry in the area.
		Cumulative	5	2	3	3	2 - LOW		The piece of land that will be affected is relatively small.
		Residual	5	2	2	3	1,8 - LOW		Agricultural activities can continue on the site for at least 5 years before construction commence.

PRE-CONSTRUCTION & CONSTRUCTION PHASE									
Activity	Description of Impact	Impact type	Spatial Scale	Duration	Significance	Probability	Rating	Mitigation Measures	Interpretation
Change of land use from agriculture to industrial	Loss of income	Existing	3	2	3	4	2,1 - MOD	Consider land-for-land swops. Compensate farmers with replacement value of the land for land not owned by Eskom. Rent available land to most affected farmers.	The affected farmers have already lost significant areas of land to industry in the project affected area
		Cumulative	3	2	3	4	2,1 - MOD		The farmers will lose more land as a result of the proposed project.
		Residual	3	2	2	3	1,4 - LOW		The farmers may restore some income if they are able to rent land from Eskom.
Re-routing of Road D1390	Potential economic impact on road users	Existing	4	5	2	2	1,5 - LOW	Complete new alignment before old road is closed. Adhere to requirements set by MPDPWRT. Implement strict health and safety requirements.	The road is used as access to the AFGRI silos and some mining sites
		Cumulative	4	5	2	2	1,5 - LOW		The access road will be realigned and less than 2km longer.
		Residual	4	5	1	1	0,7 - VERY LOW		There will be a new slightly longer access road.
Demolish houses of the Triangle Community to prepare project area	Resettlement of the Triangle community	Existing	3	5	5	5	4,3 - VERY HIGH	Appoint a relocation specialist to compile relocation strategy and relocation action plan.	The Triangle community live on Eskom property and must be relocated in order to accommodate the project.
		Cumulative	3	5	5	5	4,3 - VERY HIGH		Relocation causes severe social impacts.
		Residual	3	5	4	5	4 - HIGH		Relocation can be less traumatic if the process is handled with sensitivity.

Table 10: Impacts during the operational phase

OPERATIONAL PHASE									
Activity	Description of Impact	Impact type	Spatial Scale	Duration	Significance	Probability	Rating	Mitigation Measures	Interpretation
Operation of Kendal 30 year ash disposal facility	Health impacts, especially chronic health issues for community members in a 1km radius and employees	Existing	3	5	4	4	3,2 - HIGH	Establish environmental forum. Erect physical dust barriers. Implement recommendations of air quality study. Conduct human health study. Monitor dust levels to ensure human health is not compromised.	Chronic illnesses are permanent and will not disappear when the project ends.
		Cumulative	3	5	5	4	3,5 - HIGH		The operational phase of the proposed project will bring the impacts closer to the surrounding communities
		Residual	3	4	4	3	2,2 - MOD		Measures to protect communities may lessen the impact slightly
Operation of Kendal 30 year ash disposal facility	Quality of crops decrease	Existing	3	3	4	4	2,7 - MOD	Dust suppression mitigation as recommended by the air quality specialist. Implement management measures suggested by focus group with agricultural groups, air quality and soil specialist. Share monitoring results in proposed environmental forum.	There are a number of activities in the area that contribute to the generation of dust, including agricultural activities. Farmers are of the opinion that dust affect the quality of crops.
		Cumulative	3	3	4	4	2,7 - MOD		The proposed Kendal 30 year ash disposal facility will be a continuation of the existing ash disposal facility, and should not create extra dust, but will bring the dust impact closer to some of the affected parties.
		Residual	3	3	4	3	2 - LOW		Although it is difficult to control dust, it is possible if all role players cooperate and manage their own activities.
Operation of Kendal 30 year ash disposal facility	Potential impact on water resources	Existing	3	4	4	2	1,5 - LOW	Monitor water quality. Assess potential risk to communities and other water users. Include provision to these parties in emergency planning. Remediate polluted sources as soon as possible.	Surface and ground water are monitored, and legal measures are used to protect water resources.
		Cumulative	3	4	4	2	1,5 - LOW		There is a possibility that water resources can be damaged due to a freak of nature or failure of infrastructure
		Residual	3	4	3	2	1,3 -		There are strict legal requirements that

OPERATIONAL PHASE									
Activity	Description of Impact	Impact type	Spatial Scale	Duration	Significance	Probability	Rating	Mitigation Measures	Interpretation
							LOW		Eskom must adhere to
Operation of Kendal 30 year ash disposal facility	Maintain employment opportunities	Existing	2	3	4	5	3 - MOD	Employees continue in current jobs. Develop transferable skills. If any opportunities arise, employ local people.	No new employment opportunities will be created, but existing opportunities will be retained.
		Cumulative	2	3	4	5	3 - MOD		There will not be a positive impact through the creation of additional jobs, but ensuring job security is a positive impact.
		Residual	2	3	5	5	3,3 - HIGH		People will acquire additional skills and experience in their existing jobs.
Operation of Kendal 30 year ash disposal facility	Increase in capacity to create electricity and ensuring security of supply	Existing	5	3	5	4	3,5 - HIGH	Ensure that the project proceeds in the interest of social and economic development without compromising rights of surrounding communities.	Keeping the electricity supply stable is a high national priority and will benefit communities at large.
		Cumulative	5	3	5	4	3,5 - HIGH		Keeping the electricity supply stable is a high national priority and will benefit communities at large.
		Residual	5	3	5	5	4,3 - VERY HIGH		If local communities can benefit from the project, the positive impact will be enhanced

Table 11: Impacts during the closure and post-closure phase

CLOSURE AND POST-CLOSURE PHASE									
Activity	Description of Impact	Impact type	Spatial Scale	Duration	Significance	Probability	Rating	Mitigation Measures	Interpretation
Closure of Kendal Power Station	Loss of employment opportunities	Existing	2	5	3	5	3,3 - HIGH	Ensure workers have transferable skills. Redeploy them to other areas when the station close. Ensure fair and transparent retrenchment processes are followed, and the process is started in good time to allow people time to prepare. Conduct a SIA for closure.	If the power station close, all the employees will lose their jobs, and this will have a negative impact on them and their families.
		Cumulative	2	5	3	5	3,3 - HIGH		If the power station closes, all the employees will lose their jobs, and this will have a negative impact on them and their families.
		Residual	2	5	4	5	3,7 - HIGH		If they are redeployed to other areas, the impact will be positive.
Closure of Kendal Power Station	Decrease in capacity to generate electricity	Existing	5	5	5	1	1 - VERY LOW	At the time the impacts should be reassessed since the social environment is dynamic and change all the time.	It is assumed that there will be alternative sources of energy available at the time.
		Cumulative	5	5	5	1	1 - VERY LOW		It is assumed that there will be alternative sources of energy available at the time.

CLOSURE AND POST-CLOSURE PHASE									
Activity	Description of Impact	Impact type	Spatial Scale	Duration	Significance	Probability	Rating	Mitigation Measures	Interpretation
		Residual	5	5	5	1	1 - VERY LOW		It is assumed that there will be alternative sources of energy available at the time.
Change in landuse due to rehabilitation	Creation of new economic activities	Existing	3	4	4	3	2,2 - MOD	Provided the rehabilitation process is successful, an assessment of alternative land-use and economic activities that can be done on the site should be conducted.	This can be a positive impact that stimulate economic and social development.
		Cumulative	3	4	4	3	2,2 - MOD		This can be a positive impact that stimulate economic and social development.
		Residual	3	4	4	4	2,9 - MOD		New economic activities can create opportunities for the social and economic development of the area.

7.4 Social impact management plan

Apart from mitigating social impacts, a longer-term strategy for the monitoring and management of social impacts is required. The social impact management plan for the proposed project is presented in the table below.

Table 12: Social mitigation and management plan

No	Management measure	Phase	Timeframe	Responsible party for implementation	Monitoring party (frequency)	Target	Performance indicators (Monitoring tools)
A	If the community health study reveals significant health concerns, form a partnership with a Non-Profit Organisation (NPO) to provide the necessary social/health care services to people whose lives are affected by chronic diseases.	Pre-construction Construction Operation Decommission	Before construction start and through the life of the project	Eskom	Community Liaison Officer (CLO) Evaluate reports six monthly	Ensure workforce and affected communities have access to social/health services	Written partnership agreement in place Monitoring and evaluation reports from NPO
B	Appoint a community liaison officer that deals specifically with the surrounding communities. This person must be appropriately qualified (social science qualification) and experienced. The profile of the CLO must fit in with the communities that the person will serve. The CLO must be a professional person	Pre-construction Construction Operation Decommission Closure	Before construction activities commence for the life of the project	Eskom	CLO Review community relations plan yearly Minutes of three monthly	Obtain social licence to operate Foster good relationships with neighbouring	Appointment letter of community liaison officer. Completed community relations plan Established community relations forum

	and not merely a representative of surrounding communities given the technical nature of the job and the key role this person plays in the implementation of social mitigation and management measures. Compile a community relation plan. Establish a community liaison forum (CLF) that meet every three months – at this forum the Eskom can give feedback on its activities and keep the communities informed about matters that concern them in a transparent and honest manner. The CLF must be representative of all the groups in the area and include women, youth and the elderly. It can be a useful mechanism to manage expectations and build relationships.				meetings	communities and manage unrealistic expectations	
C	Work on a strategy to actively manage expectations, especially regarding potential resettlement. This includes the sharing of relevant information in a way that is accessible to all members of the	Pre-construction	Before resettlement activities commence	Eskom	CLO Quarterly	Ensure social licence to operate and manage expectations	Written strategy approved by the board and reviewed on a quarterly basis.

	community. Frequent communication is a key aspect in the management of expectations.						
D	Establish good working relationships with local and district government by attending their forums and individual interaction.	Pre-construction Construction Operation	As soon as possible - continue for the life of the project	Eskom Local and district municipality	CLO As needed	Ensure good relationships and coordinated planning	Membership of LED forums Minutes of meetings
E	Engage with NPO's that are active in the area. Look for partnerships and ways of working together. Eskom to approach NGO's to suggest working together.	Pre-construction Construction Operation	As soon as possible - continue for the life of the project	Eskom Local NPO's	CLO Twice a year	Ensure parties best equipped to deal with impacts do the actual work	Partnerships between applicant and NPO's in place
F	Establish a detailed grievance mechanism for communities to lodge concerns, suggestions and complaints which can be dealt with by the Project in a timely manner (See Section 7.5 for more detail).	Planning & design Construction Operation Closure	Immediate	Eskom	CLO Daily complaints register Reviewed by management once a month	Ensure complaints are dealt with in an efficient manner and resolved as fast as possible	Completed community grievance mechanism Mechanism communicated to local residents through a variety of media

G	Engage with the municipalities to discuss strategic long-term planning with regard to services such as road maintenance and housing. Become a member of the IDP Forum.	Pre-construction Construction Operation	As soon as possible – continue for life of project	Eskom	CLO Yearly	Ensure services are adequate and maintained to the benefit of all parties involved	Minutes of meetings Membership of IDP Forum
H	Appoint a relocation/resettlement specialist to compile a relocation action plan according to best practice international standards such as the IFC Resettlement Guidelines and the World Bank Resettlement Guidelines	Pre-construction	Process to commence once approval for project is given and need to relocate has been established.	Eskom	Relocation specialist	Ensure impacts on displaced people are managed and mitigated	Appointment of relocation specialist Internationally accepted relocation action plan
I	Implement the relocation action plan and make provision for monitoring and management, as well as external audits	Long term	Long term until the people are established and their livelihoods are reinstated	Eskom	Relocation specialist	Ensure people are not worse off than before relocation.	Progress reports Monitoring reports External audits
J	Establish an environmental forum with other role players in the area to give	Pre-	Start engaging as soon as	Eskom	ECO (with assistance from	Manage environmental	Environmental forum

	feedback to affected communities twice a year regarding environmental aspects such as dust, water and noise pollution and how the applicant manage and mitigate these aspects. Engage with agriculture community with regard to dust suppression strategies that minimize the impact on their produce. Establish fund for pollution incidents and compensate affected parties for actual financial losses.	construction Construction Operation Closure	possible and continue for the life of the project	Mining industry Agricultural industry	CLO) Twice a year	risks and ensure stakeholders are well-informed	established Minutes of meetings with agricultural communities. Pollution fund established

7.5 Grievance mechanism

A grievance mechanism is an important part of social impact management, and it is therefore deemed important to include recommendations in this regard in the SIA. In accordance with international good practice the Kendal Power Station should establish a specific mechanism for dealing with grievances. A grievance is a complaint or concern raised by an individual or organisation that judges that they have been adversely affected by the project during any stage of its development. Grievances may take the form of specific complaints for actual damages or injury, general concerns about project activities, incidents and impacts, or perceived impacts. The IFC standards require Grievance Mechanisms to provide a structured way of receiving and resolving grievances. Complaints should be addressed promptly using an understandable and transparent process that is culturally appropriate and readily acceptable to all segments of affected communities, and is at no cost and without retribution. The mechanism should be appropriate to the scale of impacts and risks presented by a project and beneficial for both the company and stakeholders. The mechanism must not impede access to other judicial or administrative remedies.

The grievance mechanism should be based on the following principles:

- Transparency and fairness;
- Accessibility and cultural appropriateness;
- Openness and communication regularity;
- Written records;
- Dialogue and site visits; and
- Timely resolution.

Based on the principles described above, the grievance mechanism process involves four stages:

- Receiving and recording the grievance;
- Acknowledgement and registration;
- Site inspection and investigation;
- Response.

The grievance mechanism must be shared with affected parties as early in the process as possible. The stakeholders must be allowed to give input into the grievance mechanism to ensure it is culturally appropriate and user-friendly.

8 Conclusions and Recommendations

The proposed Kendal 30 year ash disposal facility site is situated in a complex social environment. There are a number of communities residing within a 1km radius of the proposed project. The close proximity of these communities is a matter of concern, especially from a health perspective. One of the communities reside on the proposed site, and although the property where they live belong to Eskom, some of them do have right of life on the property, having lived there in excess of 40 years. This community will have to be relocated. There are mines, industries and agricultural activities taking place in the area which all contribute to the potential health impacts on communities. Most of the impacts experienced in the area can only be mitigated if all the different role players, including the municipality work together. In order to protect the vulnerable communities in the area, the following key recommendations are made:

- If communities are not relocated, conduct a human health study to determine the real risks to communities living in the area. Once the results of this study are known, recommendations regarding the future of these communities can be made.
- Appoint a relocation expert to handle the relocation of the Triangle community, and commence with the process as soon as possible, once the Environmental Authorisation is issued.
- Establish an environmental forum to monitor cumulative impacts and share resources to address existing impacts.
- Appoint a community liaison officer and implement a grievance mechanism.

There is currently an energy crisis in South Africa, and this can potentially have a severe negative impact on the South African economy. An energy crisis cannot be resolved overnight, and it will take some years to avert the crisis. Without an ash disposal facility, Kendal Power Station will not be able to operate. It is therefore in the interest of the country that this project continues. The severe negative social impact and environmental injustice done to vulnerable communities residing in the area must be considered and mitigated. The wellbeing of these communities should not be sacrificed in the interest of the broader public. It is recommended that the project proceed only if the interests of the vulnerable parties can be protected as suggested in the mitigation measures.

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