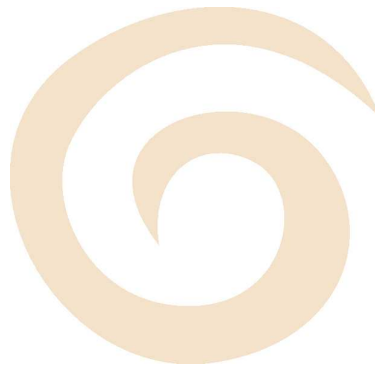


**SOCIAL IMPACT ASSESSMENT**  
As part of the  
**ENVIRONMENTAL IMPACT ASSESSMENT AND ENVIRONMENTAL  
MANAGEMENT PLAN FOR THE PROPOSED COMBINED CYCLE GAS TURBINE  
(CCGT) PLANT IN THE MAJUBA AREA, MPUMALANGA PROVINCE**

**DRAFT SCOPING REPORT**

**January 2008**



**Prepared by:**

MasterQ Research

Reg. No.: 2003/002350/07

**SOCIAL TEAM:**

MasterQ Research

Contact person: Ms Nonka Byker

Mobile: 082 940 3694

Telephone: 011 477 3265

Fax: 086 612 8122

Email: [nonka@masterq.co.za](mailto:nonka@masterq.co.za)

Postal address:

49 Muller Street

Yeoville

2198

## EXPERIENCE RECORD

This report was compiled by **Ms Nonka Byker** and reviewed by **Ms Anita Bron**, both of **MasterQ Research**.

Ms Byker holds a Bachelors degree in Psychology (specialising in Adult Mental Health) from the University of Pretoria and is registered with the Health Professions Council of South Africa (registration number: PRC0000396). She has approximately 9 years experience in the social development field, of which 7 years as a public participation consultant and 2 years as a social specialist.

Ms Bron attained her MA degree in Research Psychology at the University of Pretoria in 2000, and registered as a research psychologist with the Health Professions Council of South Africa in 2001 (PS0073075). Ms Bron is also a member of the South African Monitoring and Evaluation Association (SAMEA). As an independent consultant/director of MasterQ Research, she has established herself as a social scientist, focusing on Social Impact Assessments, Social Marketing Research and recently Monitoring and Evaluation. She is currently completing her MA degree in Social Impact Assessment at the University of Johannesburg. She has extensive experience in social impact assessments of linear developments.

The EIA regulations (1182 and 1183, as amended) states, amongst other, that an independent consultant must be appointed to act on behalf of the client and to ensure that the public participation process is managed properly. In this regard MasterQ Research submits that it has:

- The necessary required expertise to conduct social impact assessments, including the required knowledge and understanding of any guidelines or policies that are relevant to the proposed activity;
- Undertaken all the work and associated studies in an objective and independent manner, even if the findings of these studies are not favourable to the project proponent;
- No vested financial interest in the proposed project or the outcome thereof, apart from remuneration for the work undertaken under the auspices of the above-mentioned regulations;
- 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 required regulations; and

- 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.

## 1. INTRODUCTION

Eskom has been mandated by the South African Government to provide reliable and affordable electricity to the country. As generated electricity cannot be stored, the supply should be used as it is generated, resulting in a stringent supply-demand situation. It is believed that a reliable electricity supply is vital to support sustainable development in South Africa. The current project under investigation involves the establishment of a Combined Cycle Gas Turbine (CCGT) plant and its associated infrastructure within the Majuba area in the Mpumalanga Province.

The proposed CCGT plant and its associated components (refer to section 2.1) will be considered within the Environmental Impact Assessment (EIA) studies. Initially, based on the results of the Screening Study and a site visit, a total of 10 sites were identified as an ideal location for the proposed CCGT plant. After discussions with Eskom, a number of these sites have been eliminated so that only 3 sites are being scoped during this phase of the project. However, it should be noted that 2 of these sites have 'sub-sites', i.e. Site 1, Site 2A and 2B, and Site 3A, 3B and 3C. In order to determine the preferred site(s) for the proposed CCGT plant, an EIA process has to be completed. In this instance, the EIA process consists of four phases, namely:

- Environmental Screening Study (completed in December 2007);
- Environmental Scoping Study (current phase);
- Environmental Impact Assessment; and
- Environmental Management Plan.

This report details the results of the Scoping Phase of the Social Impact Assessment (SIA) conducted by MasterQ Research as part of the EIA process managed by Bohlweki Environmental. The first subsection below gives a definition of a SIA, followed by the objectives of the study. The third subsection details the approach and methodology that were followed to meet these objectives.

### 1.1 Definition of a Social Impact Assessment

The definition of an SIA as defined by Vanclay (2002) gives an understanding of the backdrop against which the SIA was conducted. According to this definition, a **social impact** is defined as follows:

*"The consequences to human populations of any public or private actions (these include policies, programmes, plans and/or projects) that alter the ways in which people live, work, play, relate to one another, organise to meet their needs and generally live and cope as members of society. These impacts are felt at various levels, including individual level, family or household level, community,*

*organisation or society level. Some social impacts are felt by the body as physical reality, while other social impacts are perceptual or emotional.”*

Whereas a **social impact assessment** is defined by Vanclay (2002) as follows:

*“SIA is the process of analyzing (predicting, evaluating and reflecting) and managing the intended and unintended consequences on the human environment of planned interventions (policies, programmes, plans and projects) and any social change processes invoked by those interventions so as to bring about a more sustainable and equitable biophysical and human environment.”*

According to Vanclay (2002:3-10) one of the pitfalls of many SIAs are that social change processes are referred to as social impacts within these studies. Vanclay stated: “social change processes are set in motion by project activities or policies”, while social impacts “refer to the impacts actually experienced by humans in either a corporeal (physical) or cognitive (perceptual) sense.” A **change process** can be defined as change that takes place within the receiving environment as a result of a direct or indirect intervention. A **potential impact** follows as a result of the change process. However, a change process can only result in an impact once it is experienced as such by an individual/community on a physical and/or cognitive level. The specialists therefore made a definite distinction between change processes and impacts for the purposes of this study.

## **1.2 Objectives of the Study**

The overall business objective of the Scoping Phase is to identify issues and concerns in order to focus the detailed assessment to follow in the EIA Phase, and to provide a framework within which the assessment is to be undertaken. A number of secondary objectives have been derived from the overall business objective and includes the following:

- Gain an understanding of the proposed project, including the nature and timeframe of the proposed activities;
- Assess the affected local area (settlements and institutions) in terms of:
  - \* **Demographic Processes:** the number and composition of the local population;
  - \* **Economic Processes:** the way in which people make a living and the economic activities within a specific (affected) area;
  - \* **Empowerment and Institutional Processes:** people’s ability to become actively involved and influence the decision making process, and also the efficiency and operation of local authorities and other significant organisations);

- \* **Socio-Cultural Processes:** the way in which humans interact and relate to each other within the context of their environment, and how this interaction is guided by value systems;
  - \* **Geographic Processes:** the land use pattern within the (affected) area; and
  - \* **Biophysical Processes:** the way in which the physical environment influences a person's experience of their social environment.
- Identify how these processes might change as a result of the proposed project;
  - Identify all the potential impacts that may occur as a result of the change processes brought about by the proposed project;
  - Identify key issues and impacts of significance that would have to be addressed during the EIA phase, which includes the identification of information gaps;
  - Identify any potential fatal flaws;
  - Identify the alternative site(s) that would create change processes with the least significant impacts, and which would then have to be assessed in more detail during the EIA phase; and
  - Describe the proposed studies for the Impact Assessment Phase that would ultimately fill the identified information gaps and result in a detailed assessment of the potential impacts.

The approach and methodology that were followed to fulfil the objectives of the Scoping Phase are listed in section 1.3 below.

### **1.3 Approach and Methodology**

The following procedures were implemented to meet the objectives of the study.

#### **1.3.1 Data Collection**

To obtain baseline information on the social conditions characterising the study area on individual, community, institutional and organisational level in terms of current and predicted future changes with and without the project, data collection methods took on the following forms:

- A site visit on 14 November 2007;
- Perusing the various locality maps generated through the project process;

- Census data (2001);
- Relevant sections of the Integrated Development Plans (IDP) of both the Gert Sibande District Municipality, as well as the Pixley ka Seme Local Municipality;
- Spatial Development Framework (SDF) of the Gert Sibande District Municipality; and
- Existing project documentation, e.g. the Screening Study.

Information that was relevant to the project was identified and assessed from these sources, and within the context of the pre-construction, construction, operational, and decommissioning phases of the proposed project.

In order to determine the potential impacts on the various site alternatives, a distinction was made between the following impacts:

- **Category 1:** Impacts that are not expected to differ between the proposed alternatives, e.g. the number of employment opportunities that might be created by the proposed project are expected to remain the same, irrespective of the chosen alternative (except in the case of the 'no go' option); and
- **Category 2:** Impacts that are expected to cause significant changes between the proposed alternatives, e.g. the need to resettle certain households increases proportionately if the development comes in close proximity to densely populated areas as opposed to skirting sparsely populated areas.

The following section describes the project and study area and then proceeds to address the objectives of the Scoping Phase.



## **2. PROJECT BACKGROUND**

This section briefly assesses the information relevant to the study area and the project. The first subsection provides a brief description of the proposed project and alternative sites, followed by a general overview of the study (a more detailed baseline profile of the study area in terms of the identified social processes follows in Section 3).

This section intends to address the following objective:

- Gain an understanding of the proposed project, including the nature and timeframe of the proposed activities.

### **2.1 Project Overview**

As mentioned previously, the current project under investigation involves the establishment of a Combined Cycle Gas Turbine (CCGT) plant and its associated infrastructure within the Majuba area in the Mpumalanga Province. The proposed CCGT plant would have approximately 2100MW of installed capacity and will consist of the following components:

- The CCGT plant itself, consisting of 6 units of 350MW each;
- A compressor plant;
- A gas cleaning plant;
- Ignition gas for unit start-up;
- A weather and communication mast of up to 60m in height;
- A high voltage yard;
- A gas pipeline from the proposed Underground Coal Gasification (UCG) plant to the proposed CCGT plant;
- A water pipeline from Rietpoort Balancing Dam to the proposed CCGT plant;
- A water treatment plant and other ancillary works such as access roads, borrow pits, etc.;
- A sewerage treatment plant; and
- Borrow pits up to a maximum size of 1.5ha each.

### **2.2 Site Alternatives**

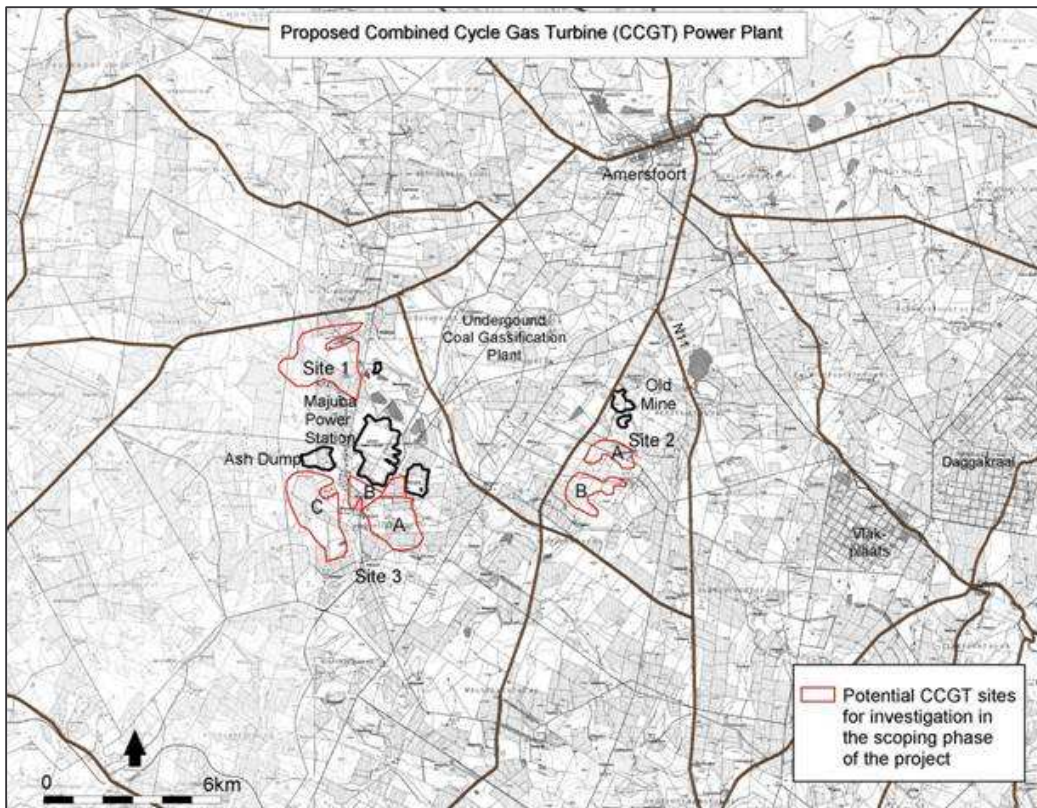
Initially, based on the results of the Screening Study and a site visit, a total of 10 sites were identified as an ideal location for the proposed CCGT plant. After discussions with Eskom, a number of these sites have been eliminated so that only 3 sites are being scoped during this phase of the project. However, it should be noted that 2 of these sites have 'sub-sites', i.e. Site 1, Site 2A and 2B, and Site 3A, 3B and 3C. Refer to figure 1 for the location of these sites.

**Site 1** is located directly adjacent to and northwest of the existing Majuba power station. This site is located on Portions 1, 3 and 7 of the farm Palmietspruit 68 HS; Portion 6 of the farm Strydkraal 53 HS; Portion 1 of the farm Roodekopjes 67 HS.

**Site 2A** is located to the south of the Old Mine on Portion 7 of the farm Bergvliet 65 HS; Portion 4 of the farm Rietpoort 83 HS; Werda 116 HS. **Site 2B** is located to the south of site 2A and is located on Portions 3 and 4 of the farm Rietpoort 83 HS and Werda 116 HS.

**Site 3A** is located to the south of the existing Majuba power station on Portions 1, 2, 6, 10 and 11 of the farm Witkoppies 81 HS. **Site 3B** is adjacent and to the north of site 3A (also to the south of the Majuba power station) on Portions 1, 5 and 6 of the farm Witkoppies 81 HS. **Site 3C** is to the west of sites 3A and 3B and directly south of the existing ash dump located to the west of the Majuba power station, on Portions 4, 5, 8, 9, 12, 13 and 14 of the farm Witkoppies HS.

**Figure 1: Location of the Alternative Sites**

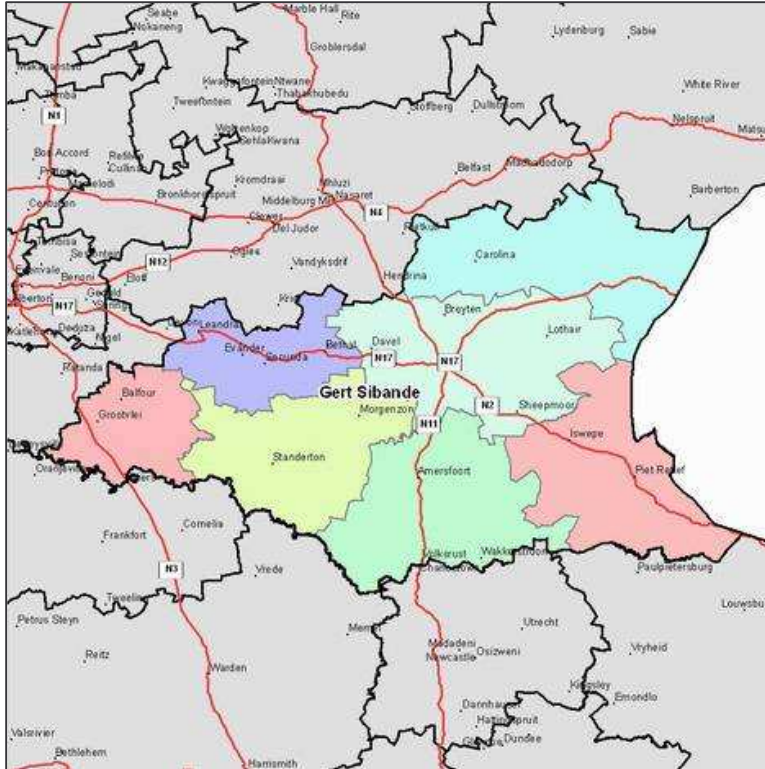


Source: Metro GIS

### 2.3 General Overview of the Study Area

All the identified potential sites for the proposed CCGT plant fall within the Pixley ka Seme Local Municipality (MP304), which in turn falls within the Gert Sibande District Municipality (DC30) of the Mpumalanga Province (MP) (refer to figure 2).

**Figure 2:** Municipal Delineation within the Gert Sibande District Municipality



**Source:** Municipal Demarcation Board

Mpumalanga has a land surface area of approximately 79 511.5km<sup>2</sup>, which represents approximately 6.5% of South Africa's total land surface. The province is home to 3 364 579 people, which represents 7% of the total population within South Africa. The current population density within the MP stands at approximately 42.3 people per km<sup>2</sup>.

The Gert Sibande District Municipality (GSDM) is located on the eastern border of the MP and consists of 7 local municipalities. The district covers an area of 31 845.9km<sup>2</sup> and is home to a population of approximately 899 945. This brings the population density in the district to 28.3 persons per square kilometre, which is indicative of the fact that the district is largely rural in nature. Of the 7 local municipalities, only one, the Pixley ka Seme Local Municipality (PSLM) is relevant to this study.

The PSLM lies on the southern border between Mpumalanga and KwaZulu-Natal. The surrounding local municipalities are the Mkhondo Municipality in the east, the Msukaligwa Municipality in the north, and the Lekwa Municipality in the west.

The municipal area consists of approximately 845.9km<sup>2</sup> and includes the following urban areas or towns:

- Amersfoort;
- Ezamokuhle;
- Perdekop;
- Siyazenzela;
- Volksrust;
- Vukuzakhe;
- Wakkerstroom; and
- eSizameleni.

Other residential areas include Daggakraal and Sinqobile, which accounts for approximately 28% of the municipality's residents. The proposed project could potentially affect 3 wards within the PSLM. These wards are as follows:

- The town of Amersfoort, which, according to the GSDM Integrated Development Plan (IDP) of 2007-2011 is delineated as ward 7 of the PKLM. The ward covers an area of 50.7km<sup>2</sup> and is home to 4 297 people. Amersfoort lies north of site 2 (A and B) and northeast of Site 1 and Site 3 (A, B and C).
- Ward 9, which is the settlement of Daggakraal. This ward is notably smaller than ward 7 and covers an area of 11.3km<sup>2</sup>. Despite its smaller area, it is home to approximately 1 000 more people than ward 7, with a total population of approximately 5 595 people. Ward 7 lies to the east of all the potential sites under investigation.
- Vlakplaats constitutes ward 11 of the PSLM and lies adjacent to and west of Daggakraal. Vlakplaats is almost double the size of Daggakraal and covers an area of 20.7km<sup>2</sup>. This ward has the largest population of all the affected wards with a total population of approximately 8 553 people. As is the case with Daggakraal, this ward lies to the east of all the potential sites, but is in closer proximity to Site 2 (A and B).

In order to address the overall objective of this study, it was necessary to compile a detailed description of the study area. The first subsection below provides a profile of the social processes in terms of demographic, economic, institutional and empowerment, socio-cultural, geographical and biophysical baseline conditions in the study area. Each subsection concludes with a table summarising how the project is likely to change these baseline profiles, and the related impacts that could be expected as a result of the project. This is followed by

suggestions on how these potential impacts should be addressed within the EIA Phase.

### 3. CHANGE PROCESSES AND POTENTIAL IMPACTS

This section intends to address the following objectives:

- Assess the affected local area (settlements and institutions) in terms of the various change processes;
- Identify how these processes might change as a result of the proposed project;
- Identify all the potential impacts that may occur as a result of the change processes brought about by the proposed project;
- Identify key issues and impacts of significance that would have to be addressed during the EIA phase, which includes the identification of information gaps;
- Identify any potential fatal flaws; and
- Identify the alternative site(s) that would create change processes with the least significant impacts, and which would then have to be assessed in more detail during the EIA phase.

For the purposes of this scoping study the impact variables were categorised in terms of change processes, as previously mentioned. A change process can be defined as change that takes place within the receiving environment as a result of a direct or indirect intervention. A potential impact follows as a result of the change process. However, a change process can only result in an impact once it is experienced as such by an individual/community on a physical and/or cognitive level.

The following subsections discuss the various change processes and the potential impacts that could be experienced by the receiving environment as a result of the proposed project. The categories of processes are as follows:

- **Demographic Processes:** the number and composition of the local population;
- **Economic Processes:** the way in which people make a living and the economic activities within a specific (affected) area;
- **Empowerment and Institutional Processes:** people's ability to become actively involved and influence the decision making process, and also the efficiency and operation of local authorities and other significant organisations);
- **Socio-Cultural Processes:** the way in which humans interact and relate to each other within the context of their environment, and how this interaction is guided by value systems;
- **Geographic Processes:** the land use pattern within the (affected) area; and
- **Biophysical Processes:** the way in which the physical environment influences a person's experience of their social environment.

### **3.1 Demographic Processes**

Demographic processes relate to the number of people and composition of a community and include an overview of the population size and the educational profile of the affected communities.

Unless otherwise stated, the baseline social profile of the potentially affected areas and settlements was compiled based on data obtained from the Municipal Demarcation Board. Note that, as this data is based on the results of Census 2001, it should only be viewed as indicative of the broad trends within the area and not as a rigid representation of the area.

#### **3.1.1 Population**

The MP covers an area of approximately 79 511.5km<sup>2</sup>, with a total population of approximately 3 364 579 people living within its borders. This brings the population density to an average of 42.3 people per km<sup>2</sup>. The predominant population group by far is Black African (93.2%) followed by White (5.8%). There are slightly more females (52.3%) than males (47.7%) within the province. The majority of the population is below the age of 19 (48.0%). However, the economically active population (between the ages of 20 and 64) is only slightly smaller at 47.8%.

The GSDM, which is situated within the MP, extends over approximately 31 845.9km<sup>2</sup> and has a total population of approximately 899 945 people at a population density of approximately 28.3 people per km<sup>2</sup>. The GSDM consists of seven local municipalities, of which only the PSLM is relevant to this study. The racial distribution within the GSDM, much like the MP as a whole, consists of a large majority of Black African (90.7%) followed by a distribution of 8.0% White. The largest segment of the population falls within the economically active segment between the ages of 20 and 64 (48.8%) followed by an almost equally large segment who are below the age of 19 (47.1%). Again there are slightly more females (51.9%) than males (48.1%).

The PSLM covers an area of approximately 845.9km<sup>2</sup> with a total population of 80 728 people with a population density of approximately 95.4 people per square kilometre. The predominant population group is Black African (92.1%), followed by White (6.8%). Slightly more than half (51.0%) of the total population are aged 19 and younger, closely followed by the economically active age group (43.8%). As is the case with the GSDM and the MP as a whole, there are more females (53.2%) than males (46.8%) in the area.

The total population of the PSLM Ward 7 (Amersfoort) is estimated at 4 297 people living in 1 562 separate households, at an average of 2.8 persons per

household. As the geographical size of the area is 50.7km<sup>2</sup>, the population density in ward 7 stands at approximately 84.8 people per km<sup>2</sup>. This ward accounts for approximately 5.3% of the total population within the PSLM. By far the majority of the total population is Black African (87.5%). Slightly more than half (50.3%) of the population fall within the economically active age category. Also, more than half (53.7%) are female.

In comparison, ward 9 (Daggakraal) has a total population of approximately 5 595 people in 1 235 separate households at an average 4.5 persons per household. Ward 9 is proportionately smaller than ward 7 and covers an area of approximately 11.3km<sup>2</sup>. It follows that the population density in this ward is much higher than that of ward 7, at an average of 495.1 people per square kilometre. The dominant population group by far is Black African (99.9%). Again more than half of the population (54.3%) is female.

Ward 11 (Vlakplaats) is located to the east of ward 9. This ward covers an area of 20.7km<sup>2</sup> and has a total population of 8 553 people at an average of 413.2 people per square kilometre. There are 1 971 households within the ward, with an average of 4.3 persons per household. As with the other affected wards, the dominant population group is Black African (99.7%), with more females (54.6%) than males (45.4%).

According to the GSDM IDP, there has been an estimated 2% population growth between 2001 and 2006 within the PSLM and the district as whole. The IDP further states that the HIV infection rate in the MP as a whole is estimated at 30.8%, which roughly translates to the fact that almost 1 in every 3 persons are HIV infected. The IDP does not state what the HIV infection rate within the GSDM or any of the local municipalities are, but if it is similar to that of the MP, it no doubt would have an effect on the population growth.

Table 1 below provides an overview of the population demographics of the study area in relation to South Africa as a whole, the province and the district. From this table it is evident that there are more females than males in the study area, which might be ascribed to the migrant labour patterns in South Africa where the male moves to a different area in search of work. If this is the case, it can very well be assumed that these males are employed elsewhere and would therefore not be seeking work at the proposed project. It is therefore necessary to take cognisance of the fact that the majority of work seekers might be female. There is also an indication that these females are poor, and therefore vulnerable to exploitation by construction labourers during the construction period.



**Table 1:** Summary of Population Characteristics

	<b>South Africa</b>	<b>Mpumalanga Province</b>	<b>GSDM</b>	<b>PSLM</b>	<b>Ward 7 PSLM</b>	<b>Ward 9 PSLM</b>	<b>Ward 11 PSLM</b>
Area size (km <sup>2</sup> )	1 219 912	79 511.5	31 845.9	845.9	50.7	11.3	20.7
Total population	47 390 900	3 364 579	899 945	80 728	4 297	5 595	8 553
Population density (people per km <sup>2</sup> )	38.9	42.3	28.3	95.4	84.8	495.1	413.2
Total households	11 205 705	829 811	222 255	18 410	1 562	1 235	1 971
Avg. persons per household	4.0	4.1	4.0	4.4	2.8	4.5	4.3
Population Group	Black African (79.5%)	Black African (93.2%)	Black African (90.7%)	Black African (92.1%)	Black African (87.5%)	Black African (99.9%)	Black African (99.7%)
Gender	Female (50.8%)	Female (52.3%)	Female (51.9%)	Female (53.2%)	Female (53.7%)	Female (54.7%)	Female (54.6%)
Age Group	≤ 19 (42.6%)	≤ 19 (48.0%)	20-64 (48.8%)	≤ 19 (51.0%)	20-64 (50.3%)	≤ 19 (57.9%)	≤ 19 (58.9%)

### 3.1.2 Education

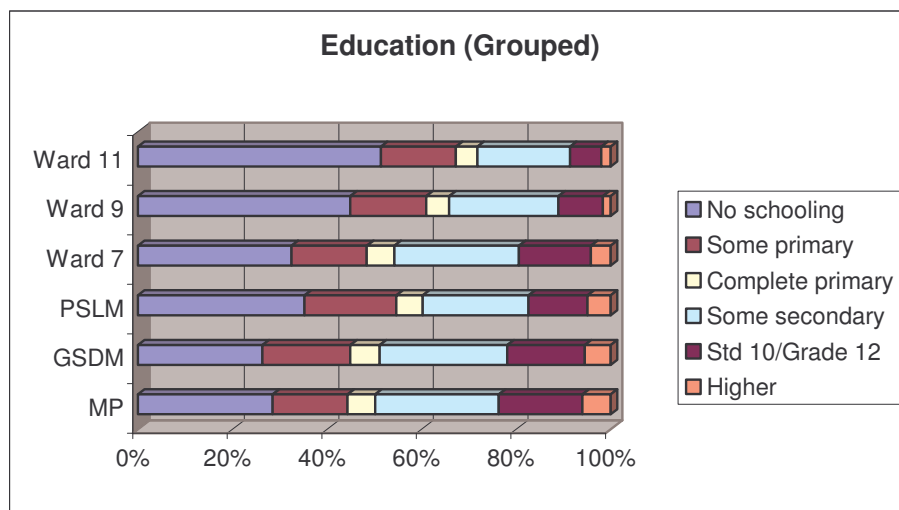
Close on a third (28.5%) of the adult population in the MP had no schooling, closely followed by just over a quarter (26.2%) of the adult population who completed at least some secondary schooling. A total of 23.6% completed an education equivalent to Grade 12 (17.7%) and higher (6.0%). The educational profile of the GSDM is similar to that of the province as a whole.

Within the PSLM, more than a third (35.3%) of the adult population has had no schooling. Also, less than a quarter (22.4%) completed a secondary level education. Less than one in five adults (17.3%) has obtained Grade 12 or any form of higher education.

The educational profile of ward 7 (Amersfoort) is similar to that of the PSLM. Wards 9 (Daggakraal) and 11 (Vlakplaats) have similar educational profiles, but these educational profiles deviate significantly from ward 7 and the PSLM as a whole. In Daggakraal, just little less than half (44.9%) of the adult population has had no schooling, whereas in Vlakplaats, more than half (51.4%) of the adult population has had no schooling. One in every four adults in Daggakraal completed some secondary education, whilst only one in every five adults did so in Vlakplaats. Slightly more than one in every ten adults (11.0%) in Daggakraal obtained a Grade 12 or higher education. This figure drops again in Vlakplaats, where only 8.6% of the adult population obtained a Grade 12 or higher education.

An overview of the educational profile for the study area in relation to the district and province is as per Figure 3.

**Figure 3:** Educational Profile of the Affected Areas



The educational profile of the affected wards are more or less in line with that of the district and local municipalities, where the bulk of the adult population have had no schooling, followed by a fairly large segment of the adult population who have completed some secondary schooling. Ward 7 (Amersfoort) appears to have the strongest educational profile in comparison with the other wards: fewer people within the adult population did not have any schooling, whilst more people have completed some secondary schooling, including Grade 12. It can therefore be concluded that, for the most part, the affected areas are characterised by a predominantly unskilled female population.

### **3.2 Demographic Change Processes**

The construction and maintenance of the proposed CCGT plant and associated infrastructure could lead to a change in the number and composition of the population within the affected local areas, which in turn could lead to economic, land use, and socio-cultural change processes.

#### **3.2.1 Potential Impacts**

Table 2 below provides an overview of the expected change process to occur as well as the expected impacts that might occur as a result of the change process taking place. These potential impacts will be assessed in detail during the Impact Assessment phase.

In the event of a potential impact being identified as a category 2 impact (see section 1.3); a brief assessment was conducted to determine which alternative would create change processes with the least significant impacts, which would then have to be assessed in more detail during the EIA phase. In such an instance, the potential impact has only been assessed *prior* to the implementation of mitigation measures. Therefore, for the purposes of this study, no mitigation measures have been identified, nor any cumulative and/or residual impacts.

**Table 2:** Overview of Expected Demographic Change Processes and Potential Impacts

<b>DEMOGRAPHIC CHANGE PROCESSES</b>				
<b>Expected Change Process</b>	<b>Potential Impact</b>	<b>Type of Impact</b>	<b>Project Phase</b>	<b>Status</b>
Relocation of households and/or population segments	Relocation of households would have an impact on their way of life and the standard of life they have grown accustomed to.	Category 2 – refer to Table 2a.	Pre-construction, construction and operation	Negative
Influx of construction workers	Influx of construction workers that will lead to a change in the number and composition of the local community, and impact on economy, health, safety and social well-being.	Category 1	Pre-construction and construction	Negative to neutral
Influx of job seekers	Influx of job seekers that will lead to a change in the number and composition of the local community, and impact on economy, health, safety and social well-being.	Category 1	Pre-construction and construction	Negative
Outflow of labourers	Outflow of labourers could impact on social well-being, social relationships, and health.	Category 1	Construction and Operation	Negative
Influx of maintenance workers	Influx of maintenance workers that will lead to a change in the number and composition of the local community, and impact on economy, health, safety and social well-being.	Category 1	Operation	Negative to neutral

**Table 2a: Brief Assessment: Relocation of Households**

<b>RELOCATION OF HOUSEHOLDS</b>						
<b>Category 2 Impact</b>	Relocation of households would have an impact on their way of life and the standard of life they have grown accustomed to.					
	<b>Site 1</b>	<b>Site 2A</b>	<b>Site 2B</b>	<b>Site 3A</b>	<b>Site 3B</b>	<b>Site 3C</b>
<b>Temporal</b>	Long term	Long term	Long term	Long term	Long term	Long term
<b>Spatial</b>	Household	Household	Household	Household	Household	Household
<b>Severity</b>	Severe	Severe	Severe	Severe	Severe	Severe
<b>Significance</b>	Very high	Very high	Very high	Very high	Very high	Very high
<b>Risk</b>	<b>May occur</b>	<b>Unlikely to occur</b>	<b>May occur</b>	<b>May occur</b>	<b>Unlikely to occur</b>	<b>May occur</b>
<b>Confidence</b>	Possible	Possible	Possible	Possible	Possible	Possible
<p><b>Explanatory notes:</b></p> <p>This brief assessment was based on social waypoints that have been marked during the initial site visits (refer to the social map in Appendix A). Households were marked that are in proximity to Site 1, Site 2B, Site 3A and Site 3C. These were the houses visible to the social specialists at the time of the study, although it is possible that more houses might be found during the Impact Assessment Phase.</p> <p>Although not a fatal flaw, it is preferable that the sites mentioned above be avoided in order to avoid the relocation of households. Sites 2A and 3B therefore emerged as the preferred sites as far as this change process is concerned.</p>						

### **3.2.2 Information Gaps**

To fully assess the potential impacts as a result of demographic change processes, more information is needed on the following aspects:

- The expected population growth within the PSLM as a result of the potentially high HIV infection rate;
- The construction processes and associated timeframes;
- The composition of the construction workforces in terms of size, skills levels, and origin;
- The composition of the maintenance workforce and their activities;
- The number of local employment opportunities; and
- The expectations of the local communities in terms of employment opportunities.

### **3.2.3 Recommended Studies**

In order to address these information gaps, the following studies are recommended for the Impact Assessment Phase:

- Conduct a desktop study to try and determine what the expected population growth rate is and how this would be influenced by the HIV infection rate in order to establish how the population would have expanded without the influx of construction workers and/or job seekers;
- Obtain and analyse information from the project proponent on the construction process, the associated timeframes as well as the size and composition of the construction team for both the construction of the CCGT plant itself as well as the associated infrastructure such as pipelines;
- Obtain and analyse information from the public participation consultants on the local residents' expectations in terms of the proposed project within the social realm, in order to better understand local residents' viewpoint on the proposed project and the potential risk for conflict and other forms of active and passive social mobilisation; and
- Obtain and analyse information from the project proponent on the maintenance process of both the CCGT plant as well as associated infrastructure (e.g. pipelines), as well as the size, composition and origin of the maintenance team (e.g. determine whether the maintenance team forms part of the permanent workforce at the plant).

### **3.3 Economic Processes**

Economic processes relate to the way in which people make a living and the economic activities within that society. The employment status within any given area gives an indication of the economic stability of such an area and also serves as an indicator of such an area's general well-being.

#### **3.3.1 Employment and Economic Sectors**

In the MP there is an almost equal split between the employment and unemployment rate of the economically active population, with 56.8% being employed. For those employed, the majority's (82.9%) sector of employment has been listed as "undetermined", which might be indicative of an active informal trade market, quite possibly centred on the tourism industry. Again the employment and economic profile of the GSDM is similar to that of the province. In this instance, the PSLM also has a similar profile to that of the GSDM and the province, except for the fact that slightly more than half (50.6%) are unemployed as opposed to employed.

By far the majority (59.1%) of the economically active population within ward 7 (Amersfoort) are unemployed. Of those employed, just over a quarter (25.5%) are employed within the wholesale and retail economic sector. This is followed by the community services sector (19.7%) and private households (17.2%). In comparison, the situation in ward 9 (Daggakraal) appears much worse than that of Amersfoort. A total of 84.3% of the economically active population are unemployed and therefore, presumably, dependant on the local municipality for free access to basic municipal services. Of those employed, almost a third (32.7%) is employed within the community services sector, followed by the wholesale and retail sector (22.6%). The situation in ward 11 (Vlakplaats) is similar to that of Daggakraal.

Very few of the economically active population are employed within the construction industry. In ward 7, 9.5% are active within this industry, whilst in ward 9, 17.6% are employed in this industry. In ward 11, 13.3% is employed in this industry. Even though these statistics relate to individuals who are already *employed* within this industry, it gives an indication of the possible shortage of construction skills in the affected areas. This would imply that, should local residents be used on the construction team, it might be necessary for either Eskom or its appointed contractors to first provide training on construction processes and techniques before the commencement of the construction phase.

Table 3 below provides an overview of the employment and economic sectors of the study area in relation to South Africa as a whole, the province and the district. From this table it is clear that these areas are not only characterised by a

predominantly unskilled female population, but also a high unemployment rate. Any employment opportunities (either directly or indirectly) created by the proposed project would therefore serve to alleviate poverty in the area to an extent and lessen the dependency ratio on the local municipality. Also, as most of the population are not economically active, this gives rise to the fact that the minority (mostly unemployed) group has to provide for the majority, further compounding the expected high levels of poverty and dependency ratio.



**Table 3: Overview of Employment and Economic Sectors**

	<b>South Africa</b>	<b>Mpumalanga Province</b>	<b>GSDM</b>	<b>PSLM</b>	<b>Ward 7 PSLM</b>	<b>Ward 9 PSLM</b>	<b>Ward 11 PSLM</b>
Employed*	33.7%	30.9%	32.7%	25.6%	26.2%	5.5%	4.7%
Unemployed*	24.0%	23.4%	24.5%	26.3%	37.9%	29.8%	27.4%
Not economically active	42.3%	45.7%	42.9%	48.1%	35.9%	64.7%	67.8%
Employment rate**	58.4%	56.8%	57.2%	49.4%	40.9%	15.7%	14.8%
Industry	Community services (29.1%)	Undetermined (82.9%)	Undetermined (81.6%)	Undetermined (87.8%)	Wholesale and retail (25.5%)	Community services (32.7%)	Community services (27.0%)

\* This is the percentage employed/unemployed of the entire working age population and should not be read as the unemployment rate, i.e. the not economically active population is included in this segment.

\*\* In order to reflect a more accurate employment rate, the *not economically active* population has been excluded from this segment.

### 3.3.2 Household Income

The majority of households (75.4%) in the MP have some form of income. However, the levels of income ranges from below the acceptable minimum standard (classified as earning at least R20 000 per annum) to very affluent. The remainder of households (24.6%) have no annual income.

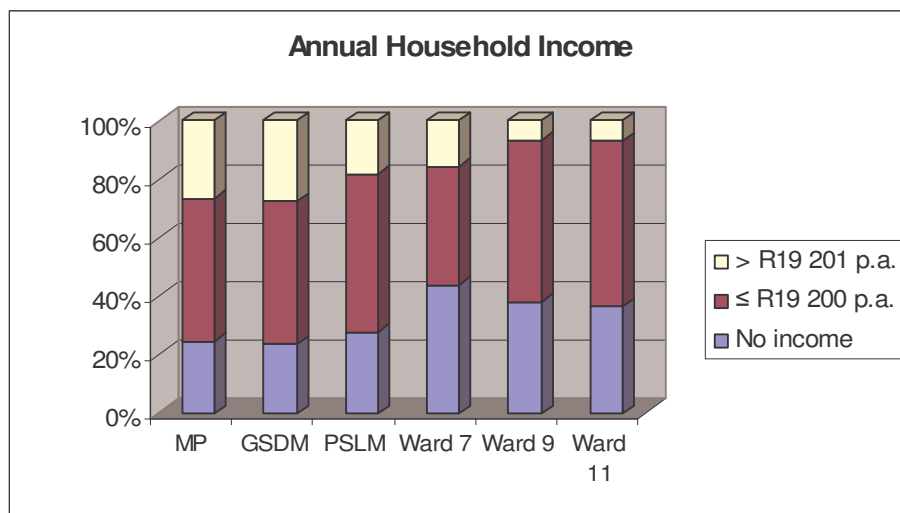
Approximately a quarter of all households within the GSDM (23.6%) have no annual household income. The situation within the PSLM is slightly worse than that of the GSDM, where 27.9% of all households within the PSLM have reported having no annual household income.

Despite being the ward that reported the highest employment rate between the affected wards, almost half (43.9%) of the households in ward 7 (Amersfoort) have no annual household income. In ward 9 (Daggakraal) this figure drops slightly to 38.1% and drops even more (36.5%) for ward 11 (Daggakraal).

However, the majority of households (40.1% for ward 7, 55.3% for ward 9, and 56.4% for ward 11) earn less than the acceptable minimum standard, which is now defined as an income of R20 000 or less per annum. As such the majority of households within these wards can be classified as living in severe poverty. The lack of education, employment and income in these areas further complicates upliftment and creates a downward spiral effect in terms of social well-being.

The graph below provides an overview of the household income levels of the affected areas in relation to the broader context of the study area.

**Figure 4:** Overview of the Annual Household Income in the Affected Areas



### **3.4 Economic Change Processes**

Economic change processes relate to the changes brought about to the employment and general economic profile of an area as a result of the introduction of any development. For example, job opportunities might be created as a result of the construction and maintenance of the proposed CCGT plant and associated infrastructure. Employment creates a source of income, which in turn enables the employed individual to access services and a support mechanism for his/her family.

#### **3.4.1 Potential Impacts**

Table 4 below provides an overview of the expected change process to occur as well as the expected impacts that might occur as a result of the change process taking place. These potential impacts will be assessed in detail during the Impact Assessment phase.

In the event of a potential impact being identified as a category 2 impact (see section 1.3); a brief assessment was conducted to determine which alternative would create change processes with the least significant impacts, which would then have to be assessed in more detail during the EIA phase. In such an instance, the potential impact has only been briefly assessed *prior* to the implementation of mitigation measures. Therefore, for the purposes of this study, no mitigation measures have been identified, nor any cumulative and/or residual impacts.

**Table 4:** Overview of Expected Economic Change Processes and Potential Impacts

<b>ECONOMIC CHANGE PROCESSES</b>				
<b>Expected Change Process</b>	<b>Potential Impact</b>	<b>Type of Impact</b>	<b>Project Phase</b>	<b>Status</b>
Land acquisition (financial compensation)	Compensation for land that might lead to an economic impact on the short to medium term.	Category 2 – refer to table 4a.	Pre-construction and construction	Dependant on outcome of negotiation process
Direct formal employment opportunities to local individuals	Direct formal job opportunities for local individuals and/or contractors that creates income (economic impact).	Category 1	Pre-construction, construction and operation	Positive
Indirect formal and/or informal employment opportunities to local individuals	Indirect formal and/or informal job opportunities for local individuals and/or contractors that creates income (economic impact).	Category 1	Pre-construction and construction	Positive

**Table 4a: Brief Assessment: Land Acquisition (Financial Compensation)**

<b>LAND ACQUISITION (FINANCIAL COMPENSATION)</b>						
<b>Category 2 Impact</b>	Compensation for land that might lead to an economic impact on the short to medium term.					
	<b>Site 1</b>	<b>Site 2A</b>	<b>Site 2B</b>	<b>Site 3A</b>	<b>Site 3B</b>	<b>Site 3C</b>
<b>Temporal</b>	Medium term	Medium term	Medium term	Medium term	Medium term	Medium term
<b>Spatial</b>	Individual	Individual	Individual	Individual	Individual	Individual
<b>Severity</b>	Beneficial	Beneficial	Beneficial	Slightly beneficial	Slightly beneficial	Beneficial
<b>Significance</b>	Moderate	Moderate	Moderate	Low	Low	Moderate
<b>Risk</b>	<b>May occur</b>	<b>May occur</b>	<b>May occur</b>	<b>Unlikely to occur</b>	<b>Unlikely to occur</b>	<b>May occur</b>
<b>Confidence</b>	Possible	Possible	Possible	Possible	Possible	Possible
<p><b>Explanatory notes:</b></p> <p>At the time of the study, it was unclear who the landowners are on the various sites. Due to its proximity to the existing Majuba power station, it has been assumed that sites 3A and 3B are located on property owned by Eskom and therefore the selection of these sites would not involve the acquisition of land or any tangible benefit to a possible landowner. Despite the fact that there will be no tangible economic benefit if these two sites are selected, it should be noted that it would also eliminate a potential lengthy negotiation process with private landowner and would reduce the costs of the proposed project as the land is already owned by Eskom. If any portion of the land on which the alternative sites are located is owned by a tribal authority, financial compensation could potentially benefit a larger segment of the affected population as opposed to only the individual.</p> <p>Sites 3A and 3B therefore emerged as the preferred sites as far as this change process is concerned.</p>						

### **3.4.2 Information Gaps**

To fully assess the potential impacts as a result of economic change processes, more information is needed on the following aspects:

- The negotiation process with private landowners in terms of land acquisition, e.g. how compensation is calculated, when the process will take place, etc.
- The local employment opportunities that will be created, both direct and indirect formal and informal job opportunities;
- The expectations of the local communities in terms of employment opportunities; and
- If available, the average period of employment and an outline of a typical salary package for unskilled labour.

### **3.4.3 Recommended Studies**

In order to address these information gaps, the following studies are recommended for the Impact Assessment Phase:

- Obtain information from the public participation consultants on registered landowners in the area to determine which sites are located on privately owned land and would therefore need to be compensated in order to assess the extent of the economic impact as a result of compensation;
- Obtain information from the public participation consultants on possible land claims in the area to determine whether any sites are or have the potential to be owned by tribal authorities;
- Obtain and analyse information from the project proponent on the negotiation process and how compensation is calculated; and
- Obtain and analyse information from the project proponent on an average salary package for an unskilled labourer to determine the extent and timeframe of economic impacts on local residents as a result of employment.

## **3.5 Empowerment and Institutional Processes**

Empowerment and Institutional processes relate to the role, efficiency and operation of government sectors and other organisations within the area in terms of service delivery. It also investigates the ability of people to engage in decision-making processes to such an extent that they have an impact on the way in which decisions are made that would concern them.

### **3.5.1 Municipal Services**

Despite the fact that more than two thirds of all households (69.1%) within the MP have access to electricity and make use of it for lighting, very few households

make use of this energy source for cooking (39.0%) and heating (38.2%). In terms of other municipal services, slightly more than half (50.3%) of households make use of their own refuse dump for waste removal. More than half (52.9%) of all households' sanitation services are below RDP standard, which involves either a pit latrine without ventilation (38.4%) or a bucket latrine (2.6%) or no sanitation services at all (11.9%). The majority of households (72.0%) have access to water that is on par or above the minimum RDP standard, which is defined as reticulated water either inside or within a 200m distance of a dwelling.

Within the GSDM, just over half (58.6%) of all households are connected to the municipality's electricity grid. Despite this, less than a third of all households make use of electricity for cooking (31.8%) or heating (29.1%). In contrast with the MP, slightly more than half (54.1%) of the district's households' refuse is removed at least once a week. Also, more than half (59.4%) of the households have sanitation service that comply with RDP standards of either a flush toilet, a septic tank, a chemical toilet or a pit latrine with ventilation. Three quarters (75.1%) have access to a water supply on par or above the minimum RDP standard. The baseline municipal service delivery profile of the PSLM is similar to that of the GSDM.

Apart from the fact that more than half of the households (52.7%) in ward 7 (Amersfoort) reported no waste disposal facilities; the profile of this ward is in line with that of the PSLM. Also, most of the households (95.2%) in this ward have access to a water supply that complies with the minimum RDP standards. Ward 9 (Daggakloof) deviates from the municipal profile found in ward 7 and the PSLM. Although most of the households have access to electricity (84.9%), most households make use of coal for cooking (86.1%) and heating (88.5%). The majority (78.2%) make use of their own refuse dump for waste removal. Most households' (82.6%) only sanitation services are below the minimum RDP standard. The same goes for the water supply to households in this ward. The same municipal profile can be found in ward 11 as that of ward 9, although it should be noted that in ward 11 even less households (only 45.2%) have access to electricity.

Table 5 below provides an overview of the municipal services of the affected area in relation to the province and the district as a whole. No data could be obtained for the overall municipal service delivery in South Africa. From this table it is evident that the most of households in the affected areas lack efficient municipal services infrastructure and delivery, which further impacts on the already poor living conditions and quality of life for most households in these areas.

**Table 5: Overview of Municipal Service Delivery to the Affected Areas**

	<b>South Africa</b>	<b>Mpumalanga Province</b>	<b>GSDM</b>	<b>PSLM</b>	<b>Ward 7 PSLM</b>	<b>Ward 9 PSLM</b>	<b>Ward 11 PSLM</b>
Energy cooking		Electricity (39.0%)	Electricity (31.8%)	Coal (49.9%)	Coal (37.2%)	Coal (86.1%)	Coal (85.5%)
Energy heating		Electricity (38.2%)	Coal (32.0%)	Coal (50.6%)	Electricity (43.7%)	Coal (88.5%)	Coal (79.2%)
Energy lighting		Electricity (69.1%)	Electricity (58.6%)	Electricity (67.4%)	Electricity (81.5%)	Electricity (84.9%)	Candles (47.8%)
Refuse		Own refuse dump (50.3%)	Removed once a week (54.1%)	Removed once a week (52.3%)	No disposal (52.7%)	Own refuse dump (78.2%)	Own refuse dump (94.6%)
Sanitation		Below RDP standard (52.9%)	Equal or above RDP standard (59.4%)	Equal or above RDP standard (64.8%)	Equal or above RDP standard (84.3%)	Below RDP standard (82.6%)	Below RDP standard (78.7%)
Water		Equal or above RDP standard (72.0%)	Equal or above RDP standard (75.1%)	Equal or above RDP standard (68.8%)	Equal or above RDP standard (95.2%)	Below RDP standard (77.4%)	Below RDP standard (76.1%)



### 3.6 Empowerment and Institutional Change Process

Negotiation for land is a change process on an empowerment and institutional level. The same applies to the stakeholders that will be involved in the public participation process. The EIA process is an opportunity for these stakeholders to give input into the process and project. However, stakeholders would have to offer up their time to become actively involved in the process and they should clearly understand their rights in terms of the process to enable them to use these rights.

When the baseline social profiles of the affected areas are filtered through Maslow's hierarchy of needs (refer to figure 5), it becomes evident that high poverty levels necessitate people to function on a more primary level in terms of meeting their own physiological needs, as indicated by the solid red arrow.

**Figure 5: Maslow's Hierarchy of Needs**



Source: [www.arrod.co.uk](http://www.arrod.co.uk)

To expect people to fully participate in a process that might affect their future, people would have to function on a higher level within the hierarchy of needs (the need for self esteem, characterised by knowledge and understanding needs as well as the need for an environment that is aesthetically appealing, as indicated by the dashed red arrow), which means that their basic needs had to be met first. People living in poverty as a result of high unemployment rates, low income levels and a poor education, struggle to survive on a daily basis and are therefore functioning on a primary, or physiological needs, level. According to Maslow, the type of need that a person experiences is dependent on the fulfilment of other needs. The various categories of needs are organised in a hierarchy, which indicates which level of need has to be fulfilled before the next level of need would be experienced (refer to figure 5).

Local residents from areas such as Daggakraal and Vlakplaats are therefore in a sense *disempowered* to fully participate in the process. The issue here is not that these communities are *misinformed* or lack information as such, but rather that these communities are *ignorant* about their rights and responsibilities as participants in the process. Due to the fact that most of these community members live in severe poverty, have low educational levels coupled with a high unemployment rate, it can very well be expected that their expectation of the project mostly relates to employment opportunities. However, because of these low educational levels, it is highly unlikely that large segments of these populations would be employed on the project, which could lead to potential impacts such as resentment towards and the resultant conflict with outsiders who do get employed on the project.

Due to the fact that residents from these areas mostly function on a very basic needs level, they might fail to comprehend the “bigger picture” or in other words, the associated impacts (both negative and positive) that the proposed project would bring to their area. Their lack of understanding has bearing on future generations that will inhabit the area. From a social perspective this lack of understanding or comprehending the bigger picture, is of concern and has to be addressed throughout the public participation process.

### **3.6.1 Potential Impacts**

Table 5 below provides an overview of the expected change process to occur as well as the expected impacts that might occur as a result of the change process taking place. These potential impacts will be assessed in detail during the Impact Assessment phase.

In the event of a potential impact being identified as a category 2 impact (see section 1.3); a brief assessment was conducted to determine which alternative would create change processes with the least significant impacts, which would then have to be assessed in more detail during the EIA phase. In such an instance, the potential impact has only been briefly assessed *prior* to the implementation of mitigation measures. Therefore, for the purposes of this study, no mitigation measures have been identified, nor any cumulative and/or residual impacts.

**Table 5:** Overview of Expected Empowerment and Institutional Change Processes and Potential Impacts

<b>EMPOWERMENT AND INSTITUTIONAL CHANGE PROCESSES</b>				
<b>Expected Change Process</b>	<b>Potential Impact</b>	<b>Type of Impact</b>	<b>Project Phase</b>	<b>Status</b>
Attitude formation against the proposed project	Attitude formation against the project could have economic impacts and could impact on social well-being.	Category 1	Pre-construction and construction	Negative
Negotiation process	A breakdown in the negotiation process in terms of land acquisition could severely delay the project and result in an economic impact on both the landowner as well as on Eskom.	Category 1	Pre-construction	Negative to neutral
Additional demand on municipal services	Additional demand on municipal services could impact on the availability of these services. A lack of services could impact on health.	Category 2 – refer to table 5a	Pre-construction and construction	Negative
Disaster Management Plan	Disaster Management Plan to enhance safety on site, as well as the safety of the surrounding areas.	Category 1	Construction and Operation	Positive

**Table 5a: Brief Assessment: Additional Demand on Municipal Services**

<b>ADDITIONAL DEMAND ON MUNICIPAL SERVICES</b>						
<b>Category 2 Impact</b>	Additional demand on municipal services could impact on the availability of these services. A lack of services could impact on health.					
	<b>Site 1</b>	<b>Site 2A</b>	<b>Site 2B</b>	<b>Site 3A</b>	<b>Site 3B</b>	<b>Site 3C</b>
<b>Temporal</b>	Short term	Short term	Short term	Short term	Short term	Short term
<b>Spatial</b>	Localised	Localised	Localised	Localised	Localised	Localised
<b>Severity</b>	Moderately severe	Severe	Severe	Moderately severe	Moderately severe	Moderately severe
<b>Significance</b>	Low	High	High	Low	Low	Low
<b>Risk</b>	<b>Unlikely to occur</b>	<b>May occur</b>	<b>May occur</b>	<b>Unlikely to occur</b>	<b>Unlikely to occur</b>	<b>Unlikely to occur</b>
<b>Confidence</b>	Possible	Possible	Possible	Possible	Possible	Possible
<b>Explanatory notes:</b>						
Both sites 2A and 2B are located in fairly close proximity to the two areas that severely lack efficient municipal services (i.e. Daggakraal and Vlakplaats). Although the potential impact on these two areas might only be temporary in nature (during the construction phase), the severity of the impact is regarded as such that the area has been red flagged from a social point of view, due to the lack of services coupled with the high population density in these areas.						

### **3.6.2 Information Gaps**

To fully assess the potential impacts as a result of empowerment and institutional change processes, more information is needed on the following aspects:

- The risk for attitude formation against the project (social mobilisation);
- A settlement's ability to sustain an additional demand on municipal services and/or natural resources in the case of Daggakraal and Vlakplaats;
- The negotiation process with private landowners in terms of land acquisition, e.g. how compensation is calculated, when and how the process will take place, etc,;
- The capacity of the affected local municipality to be able to supply municipal services to both the construction site as well as the construction village (if a village is used to house construction workers); and
- Existing disaster management plans (if any) at power generating facilities such as Majuba power station.

### **3.6.3 Recommended Studies**

In order to address these information gaps, the following studies are recommended for the Impact Assessment Phase:

- Obtain the issues register or issues report from the public participation consultants to determine the recurrent issues raised from the public's side and how these issues were addressed throughout the process. An analysis of these issues would indicate the risk for social mobilisation;
- Obtain information from the local municipality on the existing capacity to deliver municipal services and to determine the capacity for an additional demand on municipal services;
- Obtain and analyse information from the project proponent on the negotiation process; and
- Obtain and analyse information on any existing disaster management plans at similar installations. Also obtain information from the local municipality on any existing emergency and health care services (both governmental as well as private) and determine their capacity to handle potential disasters.

## **3.7 Socio-Cultural Processes**

Socio-cultural processes relate to the way in which humans behave, interact and relate to each other and their environment, as well as the belief and value systems which guide these interactions.

At the time of the study, not enough information was available to determine the level of cultural attachment that residents have to the area. Sense of place goes

hand in hand with place attachment, which is the sense of connectedness a person/community feels towards certain places. Place attachment may be evident at different geographic levels, i.e. site specific (e.g. a house, burial site, or tree where religious gatherings take place), area specific (e.g. a residential area), and/or physiographic specific (e.g. an attachment to the look and feel of an area). The concept of sense of place attempts to integrate the character of a setting with the personal emotions, memories and cultural activities associated with such a setting.

### **3.8 Socio-Cultural *Change Processes***

Socio-cultural change processes that are associated with the construction and operation of the proposed project include changes such as health and safety aspects and sense of place. The concept of 'health' is not only limited to physical health (i.e. the absence of ailments or illness), but also includes mental and social health. The expected changes that can occur in relation to health and safety aspects can be as a result of the presence of the proposed CCGT plant and associated infrastructure (such as elevated, above ground pipelines) during operation, as well as the presence of construction workers and/or job seekers during construction.

#### **3.8.1 *Potential Impacts***

Table 6 below provides an overview of the expected change process as well as the expected impacts that might occur as a result of the change process taking place. These potential impacts will be assessed in detail during the Impact Assessment phase.

In the event of a potential impact being identified as a category 2 impact (see section 1.3); a brief assessment was conducted to determine which alternative would create change processes with the least significant impacts, which would then have to be assessed in more detail during the EIA phase. In such an instance, the potential impact has only been briefly assessed *prior* to the implementation of mitigation measures. Therefore, for the purposes of this study, no mitigation measures have been identified, nor any cumulative and/or residual impacts.

**Table 6:** Overview of Expected Socio-Cultural Change Processes and Potential Impacts

<b>SOCIO-CULTURAL CHANGE PROCESSES</b>				
<b>Expected Change Process</b>	<b>Potential Impact</b>	<b>Type of Impact</b>	<b>Project Phase</b>	<b>Status</b>
Integration of construction workers into local areas	Socially acceptable integration, including the risk of spreading STIs and HIV/AIDS with an impact on health.	Category 1	Pre-construction and construction	Negative
Physical splintering	Impact of construction activities on movement patterns of local communities, potentially impacting on safety and ease of movement, and the establishment and maintenance of social relationships.	Category 1	Construction and Operation	Negative to neutral
Traffic movement	An increase in traffic could lead to a disruption of local movement patterns. An increase in (construction) traffic might damage the road network adding to the impact of frustration and a disruption in the normal traffic movement patterns.	Category 1	Pre-construction and construction	Negative
Safety and security	Presence of construction workers and job seekers on surrounding landowners' sense of safety and security.	Category 1	Pre-construction and construction	Negative
Noise pollution	Psycho-social impact of construction and operational activities and	Category 2 – refer to table 6a	Construction and operation	Negative

<b>SOCIO-CULTURAL CHANGE PROCESSES</b>				
<b>Expected Change Process</b>	<b>Potential Impact</b>	<b>Type of Impact</b>	<b>Project Phase</b>	<b>Status</b>
	resultant noise pollution on surrounding landowners.			
Sense of place	The location of the proposed CCGT plant and associated infrastructure (e.g. pipelines) might impact on sense of place of inhabitants.	Category 2 – refer to table 6b	Operation	Negative to neutral
Movement of maintenance workers	Presence of maintenance workers might impact on surrounding landowners' sense of safety and security.	Category 1	Operation	Negative
Third party tampering (on pipelines)	Tampering on the pipelines that will not only compromise the safety of the pipelines but also on both the local area's residents as well as the offender's, thereby impacting on people's health and safety.	Category 2 – refer to table 6c	Operation	Negative



**Table 6a: Brief Assessment: Noise Pollution**

<b>NOISE POLLUTION</b>						
<b>Category 2 Impact</b>	Psycho-social impact of construction and operational activities and resultant noise pollution on surrounding landowners.					
	<b>Site 1</b>	<b>Site 2A</b>	<b>Site 2B</b>	<b>Site 3A</b>	<b>Site 3B</b>	<b>Site 3C</b>
<b>Temporal</b>	Short to Long term	Short to Long term	Short to Long term	Short to Long term	Short to Long term	Short to Long term
<b>Spatial</b>	Household	Localised	Localised	Household	Household	Household
<b>Severity</b>	Moderately severe	Severe	Severe	Moderately severe	Moderately severe	Moderately severe
<b>Significance</b>	High	High	High	High	High	High
<b>Risk</b>	<b>May occur</b>	<b>May occur</b>	<b>May occur</b>	<b>May occur</b>	<b>May occur</b>	<b>May occur</b>
<b>Confidence</b>	Possible	Possible	Possible	Possible	Possible	Possible
<p><b>Explanatory notes:</b></p> <p>The potential increase in noise levels and the resultant psycho-social impact of such noise levels on surrounding residential areas and/or households can only be determined once the results of the noise specialist’s study has been made available. At this stage it is assumed that the construction and operation of the proposed CCGT plant would lead to an increase in noise levels that would result in a short term impact during construction, but a longer term impact during operation.</p> <p>Due to its location in proximity to large residential settlement areas, sites 2A and 2B are not preferred. Scattered households have also been observed in proximity to Site 1. Sites 3A, 3B and 3C therefore emerged as the preferred sites as far as this change process is concerned.</p>						

**Table 6b: Brief Assessment: Sense of Place**

<b>SENSE OF PLACE</b>						
<b>Category 2 Impact</b>	The location of the proposed CCGT plant and associated infrastructure (e.g. pipelines) might impact on sense of place of inhabitants.					
	<b>Site 1</b>	<b>Site 2A</b>	<b>Site 2B</b>	<b>Site 3A</b>	<b>Site 3B</b>	<b>Site 3C</b>
<b>Temporal</b>	Long term	Long term	Long term	Long term	Long term	Long term
<b>Spatial</b>	Localised	Localised	Localised	Household	Household	Localised
<b>Severity</b>	Severe	Severe	Severe	Moderately severe	Moderately severe	Severe
<b>Significance</b>	High	High	High	Moderate	Moderate	High
<b>Risk</b>	<b>May occur</b>	<b>May occur</b>	<b>May occur</b>	<b>May occur</b>	<b>Unlikely to occur</b>	<b>May occur</b>
<b>Confidence</b>	Possible	Possible	Possible	Possible	Possible	Possible
<b>Explanatory notes:</b>						
All the proposed sites, except for site 3B and to a lesser extent sites 2A and 3A, are located in areas where there is little to no infrastructural development. These areas are characterised by vast open spaces that is mostly used as grazing fields. Site 3B therefore emerged as the preferred site in terms of sense of place, as it is located next to the existing Majuba Power station, and therefore in close proximity to existing infrastructural development of a similar nature.						

**Table 6c: Brief Assessment: Third Party Tampering**

<b>THIRD PARTY TAMPERING</b>						
<b>Category 2 Impact</b>	Tampering on the pipelines that will not only compromise the safety of the pipelines but also on both the local area's residents as well as the offender's, thereby impacting on people's health and safety.					
	<b>Site 1</b>	<b>Site 2A</b>	<b>Site 2B</b>	<b>Site 3A</b>	<b>Site 3B</b>	<b>Site 3C</b>
<b>Temporal</b>	Long term	Long term	Long term	Long term	Long term	Long term
<b>Spatial</b>	Localised	Localised	Localised	Localised	Localised	Localised
<b>Severity</b>	Severe	Severe	Severe	Severe	Severe	Severe
<b>Significance</b>	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate
<b>Risk</b>	<b>Unlikely to occur</b>	<b>May occur</b>	<b>May occur</b>	<b>Unlikely to occur</b>	<b>Unlikely to occur</b>	<b>Unlikely to occur</b>
<b>Confidence</b>	Possible	Possible	Possible	Possible	Possible	Possible
<p><b>Explanatory notes:</b></p> <p>The Opportunity Model highlights the characteristics of a situation in which the crime may occur. The risk rate is not dependent on the number of factors that are present or absent, but rather on the combination of factors that are present or absent, which include exposure, proximity, guardianship, target attractiveness and property of committing the offence. Again sites 2A and 2B are the closest to residential settlements. As have been shown, the majority of the residents in these settlements are unemployed, and living in severe poverty, which might in turn increase the risk for third party tampering on pipelines.</p> <p>Site 3B emerged as the preferred site, again because it is located in close proximity of existing infrastructure of a similar nature and therefore it is assumed that the required security measures are already in place at this particular site (or can be extended with ease to include the site).</p>						

### **3.8.2 Information Gaps**

To fully assess the potential impacts as a result of socio-cultural change processes, more information is needed on the following aspects:

- The cultural dynamics of the existing settlements and their ability to accommodate and/or integrate workers from outside their community;
- The current movement patterns of local residents e.g. do these residents move between Daggakraal and Vlakplaats, do they travel to Amersfoort for supplies, etc. Also, how do these residents move around, i.e. by motor vehicle, on foot, etc?
- Measures that are normally implemented at a construction site of this nature to secure the area and to control access;
- The expected increase in noise levels as a result of the construction and operation of the proposed CCGT plant and associated infrastructure;
- The daily activities of surrounding residents and their cultural attachment to the area;
- The activities of maintenance workers and where these maintenance workers will be sourced from; and
- The layout of the pipeline system, e.g. will it be above ground, how will it be secured, etc.

### **3.8.3 Recommended Studies**

In order to address these information gaps, the following studies are recommended for the Impact Assessment Phase:

- Focus group meetings with community leaders and/or an observational study to determine the cultural dynamics and movement patterns of local residents;
- Obtain and analyse information, if any, from the project proponent on the mechanisms implemented at a construction site to enhance the safety of both the construction worker as well as that of local residents passing through the area;
- Obtain and analyse the results of the noise specialist study to determine the increase in noise levels and the resultant potential psycho-social impact on surrounding residential areas and/or scattered households;
- Obtain information from the public participation consultants on the surrounding landowners. Either attend or organise a focus group meeting with these landowners to determine their attachment to the area;
- Obtain and analyse information from the project proponent on the activities of maintenance workers and where these workers are sourced from; and
- Obtain and analyse information from the project proponent on the proposed layout of the pipelines, also in terms of the construction process of such pipelines.

### 3.9 Geographical Processes

Geographical processes relate to land use patterns and infrastructure in the area. This section therefore describes the land use in the study area from a social perspective.

Land use is defined as “the way land is developed and used in terms of the types of activities allowed (agriculture, residences, industries, etc.) and the size of buildings and structures permitted. Certain types of pollution problems are often associated with particular land uses, such as sedimentation from construction activities.”

Another definition of land use is as follows: “Patterns of land use arise naturally in a culture through customs and practices, but land use may also be formally regulated by zoning, other laws or private agreements such as restrictive covenants.”

A general assessment of the land uses in the area indicated the following trends:

- Residential;
- Commercial cattle and crop farming;
- Mining; and
- Energy generation.

The area surrounding Site 1 is mostly characterised by cattle farming (refer to figure 6a). One residential house has been noted in close proximity to the proposed site (refer to figure 6b).



**Figure 6a:** Cattle farming surrounding Site 1. Farm worker housing has also been observed in the distance.



**Figure 6b:** Residential household in close proximity to Site 1.

Site 2A still has some remains of the Old Mine, as shown in figure 7. The hostel at this mining complex was deserted during the time of the study. As an existing structure, it might be ideal to house construction workers during the construction phase. Site 2B is again characterised by mostly grazing fields.



**Figure 7:** Infrastructure still visible from the Old Mine (site 2A).

As is the case with the sites already mentioned, sites 3A and 3C are also characterised by grazing fields. Site 3B is also an open space, but with the exception that the existing Majuba power station lies adjacent to and north of this site.

### **3.10 Geographical Change Processes**

Geographical change processes refer to land use change as a result of the actual or perceived changes in land use, whether it be on a temporary or permanent basis. The construction and maintenance of the proposed CCGT plant and associated infrastructure might lead to a change in the land use within the local

area. The assessment of a land use change process from a social perspective takes into account how the proposed CCGT plant as associated infrastructure, such as pipelines, might affect the behaviour/lives of land owners and/or land users.

### **3.10.1 Potential Impacts**

Table 7 below provides an overview of the expected change process as well as the expected impacts that might occur as a result of the change process taking place. These potential impacts will be assessed in detail during the Impact Assessment phase.

In the event of a potential impact being identified as a category 2 impact (see section 1.3); a brief assessment was conducted to determine which alternative would create change processes with the least significant impacts, which would then have to be assessed in more detail during the EIA phase. In such an instance, the potential impact has only been briefly assessed *prior* to the implementation of mitigation measures. Therefore, for the purposes of this study, no mitigation measures have been identified, nor any cumulative and/or residual impacts.

**Table 7:** Overview of Expected Geographical Change Processes and Potential Impacts

<b>GEOGRAPHICAL CHANGE PROCESSES</b>				
<b>Expected Change Process</b>	<b>Potential Impact</b>	<b>Type of Impact</b>	<b>Project Phase</b>	<b>Status</b>
Cultivated and grazing land	Temporary loss of cultivated and grazing land due to construction activities, leads to a decreased area for cultivation and grazing, resulting in an economic impact. Also permanent loss of cultivated and grazing land through the land acquisition process.	Category 2 – refer to table 7a	Construction and Operation	Negative
Maintenance of access roads	Non-maintenance on access roads leads to roads becoming impassable, impacting on the road safety and the safety of road users.	Category 1	Construction and operation	Negative
Spatial development (future land use)	The presence of the CCGT plant and pipelines might prohibit future developments encroaching upon the plant footprint or pipeline servitudes, which means that land is lost for development.	Category 1	Operation	Negative
Tourism potential	The visibility of the CCGT plant and pipelines could lead to an indirect economic change if clientele is lost when their expectations of the area is not met.	Category 1	Operation	Negative



**Table 7a: Brief Assessment: Cultivated and Grazing Land**

<b>CULTIVATED AND GRAZING LAND</b>						
<b>Category 2 Impact</b>	Temporary loss of cultivated and grazing land due to construction activities, leads to a decreased area for cultivation and grazing, resulting in an economic impact. Also permanent loss of cultivated and grazing land through the land acquisition process.					
	<b>Site 1</b>	<b>Site 2A</b>	<b>Site 2B</b>	<b>Site 3A</b>	<b>Site 3B</b>	<b>Site 3C</b>
<b>Temporal</b>	Short to Long term	Short to Long term	Short to Long term	Short to Long term	Short to Long term	Short to Long term
<b>Spatial</b>	Localised	Household	Localised	Localised	Household	Localised
<b>Severity</b>	Moderately severe	Slight	Moderately severe	Moderately severe	Slight	Moderately severe
<b>Significance</b>	High	Moderate	High	High	Moderate	High
<b>Risk</b>	<b>May occur</b>	<b>Unlikely to occur</b>	<b>May occur</b>	<b>May occur</b>	<b>Unlikely to occur</b>	<b>May occur</b>
<b>Confidence</b>	Possible	Possible	Possible	Possible	Possible	Possible
<b>Explanatory notes:</b>						
<p>All the sites, except for sites 2A and 3B to a lesser degree, is currently used for cultivated and grazing land. It is therefore believed that the selection of any of these sites would lead to a temporary to permanent loss of land, with a resultant economic impact on the affected landowner. Site 2A was used as a mining area where most of the mine's infrastructure have remained. It is believed that site 3B is already owned by Eskom as part of the Majuba power station.</p> <p>Site 3B therefore emerged as the preferred site, followed by site 2A.</p>						

### 3.10.2 Information Gaps

To fully assess the potential impacts as a result of geographical change processes, more information is needed on the following aspects:

- The agricultural potential of the sites;
- The size and number of expected construction and operational vehicles as well as which route(s) will be used to gain access to the various sites;
- Planned developments for the area;
- Current and planned tourism activities and tourist destinations in the area.

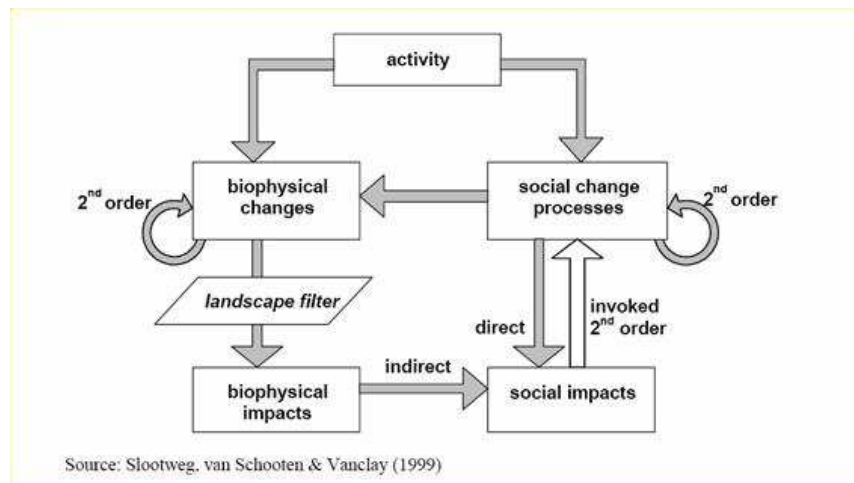
### 3.10.3 Recommended Studies

- Obtain and analyse information from the relevant specialist on the agricultural potential of the sites;
- Obtain and analyse information from the project proponent on the size and number of the construction and operational vehicles. Also obtain information from the relevant specialist conducting the traffic impact assessment, if any.
- Scrutinise the IDP and SDF of the affected district and local municipality in terms of future developments and tourism. If additional information is required other than that contained in the IDP/SDF, conduct interview(s) with relevant town planners and tourism bodies.

## 3.11 Biophysical Processes

The biophysical environment can lead to indirect social impacts, as illustrated in Figure 8. For example, relocation of people can have an impact on income levels, which can lead to processes of rural to urban migration, which can result in further impacts on income levels and changes in food production.

**Figure 8:** Biophysical change processes and indirect social impacts



### **3.12 Biophysical Change Processes**

Social change processes can lead to biophysical change processes. Economic developments to increase tourism numbers can change land use and water quality, which can have indirect human impacts because of the reduction in agricultural production, and subsequent lower income levels (Slootweg et al. 2001).

#### **3.12.1 Potential Impacts**

Table 8 below provides an overview of the expected change process as well as the expected impacts that might occur as a result of the change process taking place. These potential impacts will be assessed in detail during the Impact Assessment phase.

In the event of a potential impact being identified as a category 2 impact (see section 1.3); a brief assessment was conducted to determine which alternative would create change processes with the least significant impacts, which would then have to be assessed in more detail during the EIA phase. In such an instance, the potential impact has only been briefly assessed *prior* to the implementation of mitigation measures. Therefore, for the purposes of this study, no mitigation measures have been identified, nor any cumulative and/or residual impacts.

**Table 8:** Overview of Expected Biophysical Change Processes and Potential Impacts

<b>BIOPHYSICAL CHANGE PROCESSES</b>				
<b>Expected Change Process</b>	<b>Potential Impact</b>	<b>Type of Impact</b>	<b>Project Phase</b>	<b>Status</b>
Pollution and fire risk	The impact of pollution and fire risk on construction workers and the surrounding community's health and safety.	Category 1	Pre-construction and construction	Negative
Sanitation	Lack of sanitation impacts on the environment, which could affect health of people.	Category 1	Pre-construction and construction	Negative
Mining operations	Presence and operation of proposed CCGT plant could impact on safety of these mining operations and vice versa.	Category 1	Construction and Operation	Negative
The presence of the CCGT plant and pipelines	The impact that the presence of the CCGT plant and pipelines have on the physical and mental wellbeing of the local community.	Category 1	Operation	Negative

### **3.12.2 Information Gaps**

To fully assess the potential impacts as a result of geographical change processes, more information is needed on the following aspects:

- Mechanisms implemented at construction sites and/or construction villages to curb pollution, prevent fires and to provide adequate sanitation services;
- Safety mechanisms in use at existing mining operations; and
- Safety mechanisms in place at similar installations such as the proposed CCGT plant and pipelines. Also information on any health studies that have been conducted at such installations.

### **3.12.3 Recommended Studies**

- Obtain and analyse information from project proponent and/or construction contractor(s) on mechanisms implemented at construction sites and/or construction villages in terms of health, safety, sanitation services, etc.
- Obtain information from mining companies on the safety mechanisms in place at the mining operation and how they foresee that the presence and operation of the proposed CCGT plant and pipelines might affect their operations – this information might become available via the public participation process. If not, interview(s) will be conducted with mining house representatives; and
- Obtain and analyse information from project proponent on safety aspects and health studies conducted at similar installations. Also conduct a broad based desktop study on the potential health implications of such an installation, whether it is real or perceived.

#### **4. CONCLUSIONS AND RECOMMENDATIONS**

This report fulfilled the objectives of the Scoping Phase, which was to complete a broad assessment of the project from a social perspective to enable a more focussed study in the Impact Assessment Phase.

A preliminary comparison among the alternative sites was conducted by briefly assessing all of the category 2 impacts identified with a certain change process. A summary of the outcome of this brief assessment is as per table 9 below, where red indicates that the site is not recommended, orange indicates that the site is neither recommended nor flawed, and green indicates that the site is ideal from a social perspective. *Please note that a 'red site' does not constitute a fatal flaw, but does however imply that careful consideration should be given to the development and implementation of mitigation measures in the event that such a site is selected.* Also note that category 1 impacts have not been included in this table, as it is believed that these impacts would occur regardless of which site is selected in the end.

**Table 9:** Summary of Brief Assessments (category 2 impacts)

Process	Change Process	Site 1	Site 2A	Site 2B	Site 3A	Site 3B	Site 3C
Demographic	Relocation of households and/or populations	Orange	Green	Orange	Orange	Green	Orange
Economic	Land acquisition (financial compensation)	Orange	Orange	Orange	Green	Green	Orange
Institutional & Empowerment	Additional demand on municipal services	Green	Red	Red	Green	Green	Green
Socio-Cultural	Noise pollution	Orange	Red	Red	Green	Green	Green
	Sense of place	Red	Orange	Red	Orange	Green	Orange
	Third party tampering	Orange	Red	Red	Orange	Green	Orange
Geographical	Cultivated and grazing land	Red	Green	Orange	Orange	Green	Red
Biophysical	No category 2 impacts foreseen	-	-	-	-	-	-

Based on the results of the brief assessments as summarised in the table above, **site 3B** emerged as the preferred site from a social perspective, followed by **site 3A** and then **site 3C**. This is based on the fact that **site 3B** is located in close proximity to existing infrastructure of a similar nature, whilst at the same time it is located on an Eskom property thereby reducing the number of potential social impacts on the surrounding environment.

During the scoping study, no issues emerged that can be considered as fatal flaws from a social perspective. However, there are areas of concern (notably the potential impact on areas such as Daggakraal and Vlakplaats) and therefore careful consideration should be given to the enhancement and/or mitigation measures (that will be proposed during the next phase of the project), both during the construction as well as the operation phases of the project.

This recommendation was based on the specialist's:

- Understanding of the proposed project, including the alternative route alignments and the nature and timeframe of the proposed activities;
- Assessment of the affected communities, settlements and institutions in terms of:
  - \* **Demographic Processes:** the number and composition of the local population;
  - \* **Economic Processes:** the way in which people make a living and the economic activities within a specific (affected) area;
  - \* **Empowerment and Institutional Processes:** people's ability to become actively involved and influence the decision making process, and also the efficiency and operation of local authorities and other significant organisations);
  - \* **Socio-Cultural Processes:** the way in which humans interact and relate to each other within the context of their environment, and how this interaction is guided by value systems;
  - \* **Geographic Processes:** the land use pattern within the (affected) area; and
  - \* **Biophysical Processes:** the way in which the physical environment influences a person's experience of their social environment.
- Assessment of potential change processes that might occur as a result of the project.



## 5. TERMS OF REFERENCE FOR THE EIA PHASE

This section aims to address the following objective:

- Describe the proposed studies for the Impact Assessment Phase that would ultimately fill the identified information gaps and result in a detailed assessment of the potential impacts.

Change Process	Expected Impact(s)	Information Gap(s)	Recommended Studies
<b>DEMOGRAPHIC</b>			
Relocation of households and/or population segments	Relocation of households would have an impact on their way of life and the standard of life they have grown accustomed to.	<ul style="list-style-type: none"> <li>• The expected population growth within the PSLM as a result of the potentially high HIV infection rate;</li> <li>• The construction processes and associated timeframes;</li> <li>• The composition of the construction workforces in terms of size, skills levels, and origin;</li> <li>• The composition of the maintenance workforce and their activities;</li> <li>• The number of local employment opportunities; and</li> <li>• The expectations of the local communities in terms of employment opportunities.</li> </ul>	<ul style="list-style-type: none"> <li>• Conduct a desktop study to try and determine what the expected population growth rate is and how this would be influenced by the HIV infection rate in order to establish how the population would have expanded without the influx of construction workers and/or job seekers;</li> <li>• Obtain and analyse information from the project proponent on the construction process, the associated timeframes as well as the size and composition of the construction team for both the construction of the CCGT plant itself as well as the associated infrastructure such as pipelines;</li> <li>• Obtain and analyse information</li> </ul>
Influx of construction workers	Influx of construction workers that will lead to a change in the number and composition of the local community, and impact on economy, health, safety and social well-being.		
Influx of job seekers	Influx of job seekers that will lead to a change in the number and composition of the local community, and impact on economy, health, safety and social well-being.		
Outflow of labourers	Outflow of labourers could impact on social well-being, social relationships, and health.		

Change Process	Expected Impact(s)	Information Gap(s)	Recommended Studies
Influx of maintenance workers	Influx of maintenance workers that will lead to a change in the number and composition of the local community, and impact on economy, health, safety and social well-being.		<p>from the public participation consultants on the local residents' expectations in terms of the proposed project within the social realm, in order to better understand local residents' viewpoint on the proposed project and the potential risk for conflict and other forms of active and passive social mobilisation; and</p> <ul style="list-style-type: none"> <li>Obtain and analyse information from the project proponent on the maintenance process of both the CCGT plant as well as associated infrastructure (e.g. pipelines), as well as the size, composition and origin of the maintenance team (e.g. determine whether the maintenance team forms part of the permanent workforce at the plant).</li> </ul>
<b>ECONOMIC</b>			
Land acquisition (financial compensation)	Compensation for land that might lead to an economic impact on the short to medium term.	<ul style="list-style-type: none"> <li>The negotiation process with private landowners in terms of land acquisition, e.g. how compensation is calculated, when the process will take place, etc.</li> </ul>	<ul style="list-style-type: none"> <li>Obtain information from the public participation consultants on registered landowners in the area to determine which sites are located on privately owned land and would therefore need to be compensated in order to</li> </ul>
Direct formal employment opportunities to local individuals	Direct formal job opportunities for local individuals and/or contractors that creates income (economic	<ul style="list-style-type: none"> <li>The local employment opportunities that will be</li> </ul>	<ul style="list-style-type: none"> <li>assess the extent of the</li> </ul>

Change Process	Expected Impact(s)	Information Gap(s)	Recommended Studies
Indirect formal and/or informal employment opportunities to local individuals	<p>impact).</p> <p>Indirect formal and/or informal job opportunities for local individuals and/or contractors that creates income (economic impact).</p>	<p>created, both direct and indirect formal and informal job opportunities;</p> <ul style="list-style-type: none"> <li>• The expectations of the local communities in terms of employment opportunities; and</li> <li>• If available, the average period of employment and an outline of a typical salary package for unskilled labour.</li> </ul>	<p>economic impact as a result of compensation;</p> <ul style="list-style-type: none"> <li>• Obtain information from the public participation consultants on possible land claims in the area to determine whether any sites are or have the potential to be owned by tribal authorities;</li> <li>• Obtain and analyse information from the project proponent on the negotiation process and how compensation is calculated; and</li> <li>• Obtain and analyse information from the project proponent on an average salary package for an unskilled labourer to determine the extent and timeframe of economic impacts on local residents as a result of employment.</li> </ul>
<b>EMPOWERMENT AND INSTITUTIONAL</b>			
Attitude formation against the proposed project	Attitude formation against the project could have economic impacts and could impact on social well-being.	<ul style="list-style-type: none"> <li>• The risk for attitude formation against the project (social mobilisation);</li> <li>• A settlement's ability to sustain an additional demand on municipal services and/or natural resources in the case of Daggakraal and Vlakplaats;</li> <li>• The negotiation process with</li> </ul>	<ul style="list-style-type: none"> <li>• Obtain the issues register or issues report from the public participation consultants to determine the recurrent issues raised from the public's side and how these issues were addressed throughout the process. An analysis of these issues would indicate the risk for social mobilisation;</li> </ul>
Negotiation process	A breakdown in the negotiation process in terms of land acquisition could severely delay the project and result in an economic impact on both the landowner as well as on		

Change Process	Expected Impact(s)	Information Gap(s)	Recommended Studies
	Eskom.		
Additional demand on municipal services	Additional demand on municipal services could impact on the availability of these services. A lack of services could impact on health.	private landowners in terms of land acquisition, e.g. how compensation is calculated, when and how the process will take place, etc.;	<ul style="list-style-type: none"> <li>Obtain information from the local municipality on the existing capacity to deliver municipal services and to determine the capacity for an additional demand on municipal services;</li> </ul>
Disaster Management Plan	Disaster Management Plan to enhance safety on site, as well as the safety of the surrounding areas.	<ul style="list-style-type: none"> <li>The capacity of the affected local municipality to able to supply municipal services to both the construction site as well as the construction village (if a village is used to house construction workers); and</li> <li>Existing disaster management plans (if any) at power generating facilities such as Majuba power station.</li> </ul>	<ul style="list-style-type: none"> <li>Obtain and analyse information from the project proponent on the negotiation process; and</li> <li>Obtain and analyse information on any existing disaster management plans at similar installations. Also obtain information from the local municipality on any existing emergency and health care services (both governmental as well as private) and determine their capacity to handle potential disasters.</li> </ul>
<b>SOCIO-CULTURAL</b>			
Integration of construction workers into local areas	Socially acceptable integration, including the risk of spreading STIs and HIV/AIDS with an impact on health.	<ul style="list-style-type: none"> <li>The cultural dynamics of the existing settlements and their ability to accommodate and/or integrate workers from outside their community;</li> </ul>	<ul style="list-style-type: none"> <li>Focus group meetings with community leaders and/or an observational study to determine the cultural dynamics and movement patterns of local residents;</li> </ul>
Physical splintering	Impact of construction activities on movement patterns of local communities, potentially impacting on safety and ease of movement, and the establishment and	<ul style="list-style-type: none"> <li>The current movement patterns of local residents e.g. do these residents move between Daggakraal and Vlakplaats, do they travel to Amersfoort for</li> </ul>	<ul style="list-style-type: none"> <li>Obtain and analyse information, if any, from the project proponent on the mechanisms implemented at a construction</li> </ul>

<b>Change Process</b>	<b>Expected Impact(s)</b>	<b>Information Gap(s)</b>	<b>Recommended Studies</b>
	maintenance of social relationships.	supplies, etc. Also, how do these residents move around, i.e. by motor vehicle, on foot, etc?	site to enhance the safety of both the construction worker as well as that of local residents passing through the area;
Traffic movement	An increase in traffic could lead to a disruption of local movement patterns. An increase in (construction) traffic might damage the road network adding to the impact of frustration and a disruption in the normal traffic movement patterns.	<ul style="list-style-type: none"> <li>Measures that are normally implemented at a construction site of this nature to secure the area and to control access;</li> <li>The expected increase in noise levels as a result of the construction and operation of the proposed CCGT plant and associated infrastructure;</li> </ul>	<ul style="list-style-type: none"> <li>Obtain and analyse the results of the noise specialist study to determine the increase in noise levels and the resultant potential psycho-social impact on surrounding residential areas and/or scattered households;</li> </ul>
Safety and security	Presence of construction workers and job seekers on surrounding landowners' sense of safety and security.	<ul style="list-style-type: none"> <li>The daily activities of surrounding residents and their cultural attachment to the area;</li> </ul>	<ul style="list-style-type: none"> <li>Obtain information from the public participation consultants on the surrounding landowners. Either attend or organise a focus group meeting with these landowners to determine their attachment to the area;</li> </ul>
Noise pollution	Psycho-social impact of construction and operational activities and resultant noise pollution on surrounding landowners.	<ul style="list-style-type: none"> <li>The activities of maintenance workers and where these maintenance workers will be sourced from; and</li> </ul>	<ul style="list-style-type: none"> <li>Obtain and analyse information from the project proponent on the activities of maintenance workers and where these workers are sourced from; and</li> </ul>
Sense of place	The location of the proposed CCGT plant and associated infrastructure (e.g. pipelines) might impact on sense of place of inhabitants.	<ul style="list-style-type: none"> <li>The layout of the pipeline system, e.g. will it be above ground, how will it be secured, etc.</li> </ul>	<ul style="list-style-type: none"> <li>Obtain and analyse information from the project proponent on the proposed layout of the pipelines, also in terms of the construction process of such pipelines.</li> </ul>
Movement of maintenance workers	Presence of maintenance workers might impact on surrounding landowners' sense of safety and security.		
Third party tampering (on pipelines)	Tampering on the pipelines that will not only compromise the safety of the pipelines but also on both the		

Change Process	Expected Impact(s)	Information Gap(s)	Recommended Studies
	local area's residents as well as the offender's, thereby impacting on people's health and safety.		
<b>GEOGRAPHICAL</b>			
Cultivated and grazing land	Temporary loss of cultivated and grazing land due to construction activities, leads to a decreased area for cultivation and grazing, resulting in an economic impact. Also permanent loss of cultivated and grazing land through the land acquisition process.	<ul style="list-style-type: none"> <li>• The agricultural potential of the sites;</li> <li>• The size and number of expected construction and operational vehicles as well as which route(s) will be used to gain access to the various sites;</li> </ul>	<ul style="list-style-type: none"> <li>• Obtain and analyse information from the relevant specialist on the agricultural potential of the sites;</li> <li>• Obtain and analyse information from the project proponent on the size and number of the construction and operational vehicles. Also obtain information from the relevant specialist conducting the traffic impact assessment, if any.</li> </ul>
Maintenance of access roads	Non-maintenance on access roads leads to roads becoming impassable, impacting on the road safety and the safety of road users.	<ul style="list-style-type: none"> <li>• Planned developments for the area;</li> <li>• Current and planned tourism activities and tourist destinations in the area.</li> </ul>	<ul style="list-style-type: none"> <li>• Scrutinise the IDP and SDF of the affected district and local municipality in terms of future developments and tourism. If additional information is required other than that contained in the IDP/SDF, conduct interview(s) with relevant town planners and tourism bodies.</li> </ul>
Spatial development (future land use)	The presence of the CCGT plant and pipelines might prohibit future developments encroaching upon the plant footprint or pipeline servitudes, which means that land is lost for development.		
Tourism potential	The visibility of the CCGT plant and pipelines could lead to an indirect economic change if clientele is lost when their expectations of the area is not met.		

**BIOPHYSICAL**

Pollution and fire risk	The impact of pollution and fire risk on construction workers and the surrounding community's health and safety.	<ul style="list-style-type: none"> <li>• Mechanisms implemented at construction sites and/or construction villages to curb pollution, prevent fires and to provide adequate sanitation services;</li> <li>• Safety mechanisms in use at existing mining operations; and</li> <li>• Safety mechanisms in place at similar installations such as the proposed CCGT plant and pipelines. Also information on any health studies that have been conducted at such installations.</li> </ul>	<ul style="list-style-type: none"> <li>• Obtain and analyse information from project proponent and/or construction contractor(s) on mechanisms implemented at construction sites and/or construction villages in terms of health, safety, sanitation services, etc.</li> <li>• Obtain information from mining companies on the safety mechanisms in place at the mining operation and how they foresee that the presence and operation of the proposed CCGT plant and pipelines might affect their operations – this information might become available via the public participation process. If not, interview(s) will be conducted with mining house representatives; and</li> <li>• Obtain and analyse information from project proponent on safety aspects and health studies conducted at similar installations. Also conduct a broad based desktop study on the potential health implications of such an installation, whether it is real or perceived.</li> </ul>
Sanitation	Lack of sanitation impacts on the environment, which could affect health of people.		
Mining operations	Presence and operation of proposed CCGT plant could impact on safety of these mining operations and vice versa.		
The presence of the CCGT plant and pipelines	The impact that the presence of the CCGT plant and pipelines have on the physical and mental wellbeing of the local community.		

## **6. SOURCES CONSULTED**

### **6.1 Municipal Documentation**

- Gert Sibande District Municipality Draft IDP 2007-2011.

### **6.2 Project Documentation**

- Bohlweki Environmental (2007). Screening Study for the Combined Cycle Gas Turbine (CCGT) Power Plant in the Amersfoort Area, Mpumalanga Province. Unpublished project report submitted to Eskom Holdings.
- Project generated maps indicating the various alternative site locations.

### **6.3 Other Documentation**

- Sloomweg R, Vanclay F, van Schooten M. Function evaluation as a framework for the integration of social and environmental impact assessment. Impact Assess Project Appraisal 2001; 19(1):19-28.
- Vanclay, F. 2002. Environmental Impact Assessment Review 22:183-211

### **6.4 Websites**

- <http://www.demarcation.org.za> - accessed January 2008.
- <http://www.gsibande.gov.za> - accessed January 2008.
- <http://www.idp.org.za> - accessed January 2008.
- [http://www.arrod.co.uk/archive/concept\\_maslow\\_hierarchy.php](http://www.arrod.co.uk/archive/concept_maslow_hierarchy.php) - accessed January 2008.



# APPENDIX A: SOCIAL WAYPOINTS

