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SOCIAL IMPACT ASSESSMENT FOR THE PROPOSED DECOMMISSIONING AND RELOCATION OF THE THREE GAS TURBINE UNITS AT ACACIA POWER STATION (NEAR GOODWOOD, WESTERN CAPE) AND ONE GAS TURBINE UNIT AT PORT REX POWER STATION (NEAR EAST LONDON, EASTERN CAPE) TO THE EXISTING ANKERLIG POWER STATION SITE, IN ATLANTIS INDUSTRIA, WESTERN CAPE

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Executive Summary

Introduction

Eskom Holdings Limited is investigating the decommissioning of the existing Acacia aero derivative gas turbine units and the relocation of these units to the Ankerlig Power Station site in Atlantis, to stabilise the transmission network in the area and ensure the required dedicated back-up power supply to the Koeberg Nuclear Power Station. In addition, in order to provide additional operational flexibility and to streamline the phasing of the relocation of the Acacia units to the Ankerlig Power Station, an additional aero derivative gas turbine unit is proposed to be decommissioned and relocated to the Ankerlig Power Station site from Eskom's Port Rex Power Station site in East London. Savannah Environmental has been appointed as an independent consultant to undertake the required Environmental Impact Assessment (EIA) and public participation for the proposed project. Savannah Environmental contracted Southern Hemisphere to undertake a specialist social assessment as part of the EIA.

Methodology

The approach to this study follows guidelines outlined in the Western Cape Department of Environmental Affairs and Development Planning's "Guidelines for involving Social Specialists in an EIA."

This scoping study of potential social impacts that may be associated with the proposed Decommissioning and Relocation of the three gas turbine units at Acacia Power Station and one gas unit at Port Rex Station to the existing Ankerlig Power Station site in Atlantis Industria was conducted through a desk-top study in which available information was reviewed. This included information on the socio-economic dynamics of areas surrounding the Acacia, Port Rex and Acacia stations, issues and comments received during the public participation process, and project information obtained from the scoping study.

Socio-economic profile of potentially impacted population

This report presents socio-economic data based on 2001 Census Statistics, as compiled in the City of Cape Town's Suburb Profiles and the Buffalo City Municipality Profiles. Suburbs used in this assessment include: City of Cape Town; Atlantis; Melkbosstrand; and Atlantis non-urban and Buffalo City Municipality.

Ankerlig Power Station, Atlantis

The existing Ankerlig Power Station is located within the western portion of the proclaimed Industrial Area of Atlantis on the Farm No 1183 and a Portion of Farm Witzand 2, Atlantis, Cape Town, both of which are owned by Eskom. The study area is located within the Koeberg and Blaauwberg sub-councils of the City of Cape Town Metropolitan Municipality in the Western Cape Province. According to 2006 Municipal Demarcation, Atlantis falls between Ward 29 (northwest) and Ward 32 (southeast) of the Koeberg sub-council. The Ankerlig Power Station site

is situated in the Atlantis Industrial area, and is currently occupied by the OCGT power station, which is proposed to be converted into a CCGT power station. The existing power station consists of 9 OCGT units (i.e. four existing OCGT units, plus an additional five OCGT units, currently under construction).

The population potentially affected by the development include:

- Residents of Atlantis, particularly the suburbs of Avondale, Wesfleur, Protea Park, Beacon Hill and Robinvale, and the nearby informal settlement of Witsand, situated in close proximity to the Industrial area.
- Residents of Melkbosstrand, Duynfontein and Van Riebeeckstrand
- Residents of Klein Zoute River Agricultural Holdings and landowners of farms situated in the Malmesbury non-urban area immediately south of Atlantis Industrial Area.

At the time of the 2001 Census, the total population of the City of Cape Town was about 2.9 million people. Within the study area, the Atlantis population comprised of just under 55 000 people, while the surrounding non-urban areas (Atlantis non-urban according to suburb profiles) housed just over 4 000 people, and just under 6 500 people resided in the Melkbosstrand area. Females outnumber males in all areas except Atlantis non-urban, where males predominate by a slight margin.

The Atlantis population is predominantly Coloured (92.6%), with a small percentage (6.6%) Black African and less than one per cent respectively White and Indian. The population of Atlantis non-urban is also predominantly Coloured (68%) according to the 2001 census, with a significantly greater percentage of Whites (22%) and slightly more Black African (10%). By contrast Melkbosstrand is predominantly White (89%).

The economically active population comprised of about 46% of City of Cape Town residents aged between 15 and 65 in 2001. Figures for the study area are similar, though slightly lower for Atlantis at 44%, and higher for Melkbosstrand (48%). Of those indicated as economically active, 31% in Atlantis are unemployed, slightly higher than the average for the City of Cape Town as a whole. Over half of those employed in Atlantis, and 62% in Atlantis non-urban earned less than R1 600 per month in 2001, with almost all the remainder (45% in Atlantis and 32% in Atlantis non-urban) earning between R1 600 and R6 400 per month. Income of Melkbosstrand residents was notably higher, with about half earning over R6 400 per month. Over a third of Atlantis households lived on less than R19 200 per annum in 2001, with a further 50% citing an annual household income of between R19 200 and R76 800.

The City Development Index (CDI) is a composite index looking at: infrastructure (water, sewerage, telephone and electricity) health (life expectancy, divided by infant mortality), education (adult literacy and gross enrolment ratio) and income (mean household income). Overall, the City of Cape Town has a higher CDI of 0,88 compared to 0,81 for the rest of the Western Cape Province. Atlantis rates

are slightly lower than the City average at 0.86, but still higher than the broader Western Cape Province. Its rating for health is however slightly lower than that for both City and Province. Melkbosstrand by contrast rates higher than the City of Cape Town at 0.92, scoring higher in all indexes.

Atlantis offers significant potential for economic development. Its assets include proximity to the West Coast Biosphere, the historical settlements of Mamre and Pella and the expanding high-income housing developments on the West Coast. The Cape Town Metropolitan Municipality IDP (2004) identified Atlantis as one of the focal areas for residential upgrading. The City is currently in the process of developing an economic development action plan for the area.

Acacia Power Station

The Acacia Power Station is in Ward 5 of the Cape Town Metropolitan Municipality. The site is located in close proximity to the residential areas of Bothasig, Edgemoed and Monta Vista. The population potentially affected by the development include Residents of these neighbourhoods.

At the time of the 2001 Census, the total population of the City of Cape Town was about 2.9 million people. Within the study area, the population comprised of 24 731 people. Males outnumber the females in all areas, where the females predominate by a slight margin. The population is predominantly White (84%), with a small percentage (1%) of Indian/Asian, 11% of Coloureds and 3% Black African. English is the most common language spoken (75%), while Afrikaans is spoken by 21%.

According to the 2001 Census, the labour force for areas surrounding the Acacia Power Station was estimated to be 10727 people. The area has a low rate of unemployment; Census 2001 puts unemployment at 540 people. With regard to household subsistence level per month (Census 2001), 1% have no income, 3% earn R1-R800, 6% R801-R1600, 46% R1601-R6400, 41% R6401-R25600 and 3% earn R25601-R10400 or more.

With reference to plans for economic development, according to the Cape Town Metropolitan Municipality IDP (2004), in which areas around the Acacia Power Station fall under. The first strategy is to shift the weight of urban growth from the periphery of the City towards the established urban core through facilitating mixed use, mixed income, high-density development in well-located and accessible areas that are already serviced by current infrastructure.

Port Rex Power Station

The Port Rex Power Station is located within the Woodbrook industrial area, Cape Road in East London. East London is in Ward five of the Buffalo City Municipality. It is part of the Eskom's Peaking Generation group of power station. The population potentially affected by the development include residents and landowners of areas surrounding the Woodstock industrial area.

According to Statistics South Africa, the total population of Buffalo City in 2001, was 701 890, of which 201 862 of the population is in the East London area. The age distribution in the Buffalo City area is slightly younger, with a large percentage of 37% aged between 15-34 years. The percentage of the younger population has grown since 1996, indicating an increased number of people looking for employment opportunities.

The labour force for the Buffalo City area in 1994 (Statistic SA, 2001) was estimated to be 285 000 people, of whom 56% were formally employed, 29% were unemployed and 15% were active in the informal sector. Outside of the labour force, at least 70 000 people are engaged in subsistence activities. Buffalo City Municipality has a high percentage of unemployment; Census 2001 puts unemployment at 53%. The city is relatively poor, with about 70% of the city's population earning less than the household subsistence level of +-R1500 per month (Census 2001).

The city's plans for economic development propose an institutional vehicle to advance and leverage the development of potential investment opportunities inherent in various area-specific parts of the city, which is the Buffalo City Development Agency (BCDA). The BCDA has recently been established as a Section 21 Company, to take responsibility initially for managing the development of certain highlighted areas and peripheral areas.

Impact Assessment

Summary of Impacts

Table A below provides a summary of potential social impacts associated with the Decommissioning and Relocation of the three gas turbine units at Acacia Power Station and one gas unit at Port Rex Station to the existing Ankerlig Power Station site in Atlantis Industria. Significance and status of each impact is indicated with and without mitigation.

Table A: Summary of Impacts anticipated during the Decommissioning and Relocation of the three gas turbine units at Acacia Power Station and one gas unit at Port Rex Station to the existing Ankerlig Power Station site in Atlantis Industria

Impact:	Mitigation	Significance	Status
THE DECOMMISSIONING OF THE GAS UNITS AT THE ACACIA SITE			
Employment	Without Mitigation	Low	Positive
	With Mitigation	Low	Positive
Intrusive Impacts	Without Mitigation	Low	Positive
	With Mitigation	N/A	N/A
Impacts on health and safety	Without Mitigation	Low	Positive
	With Mitigation	N/A	N/A
Impacts on land use	Without Mitigation	Negligible	Neutral
	With Mitigation	N/A	N/A
Local traffic Impacts	Without Mitigation	Low	Negative
	With Mitigation	N/A	N/A
THE DECOMMISSIONING OF THE GAS UNITS AT THE PORT REX SITE			
Employment	Without Mitigation	Low	Positive
	With Mitigation	Low	Positive
Intrusive Impacts	Without Mitigation	Low	Positive
	With Mitigation	N/A	N/A
Impacts on health and safety	Without Mitigation	Low	Positive
	With Mitigation	N/A	N/A
Impacts on land use	Without Mitigation	Negligible	Neutral
	With Mitigation	N/A	N/A
Local traffic Impacts	Without Mitigation	Medium	Negative
	With Mitigation	N/A	N/A

Impact:	Mitigation	Significance	Status
THE RELOCATION OF THE GAS UNITS TO THE ANKERLIG POWER STATION SITE			
Employment	Without Mitigation	Low	Positive
	With Mitigation	Low	Positive
Intrusive Impacts	Without Mitigation	Low/ Medium	Negative
	With Mitigation	Low	Negative
Impact on sense of place	Without Mitigation	Medium	Negative
	With Mitigation	Low	Negative
Local traffic Impacts	Without Mitigation	Medium	Negative
	With Mitigation	Low	Negative
Impacts on health and safety	Without Mitigation	Medium	Negative
	With Mitigation	Low	Negative
Impacts on land use	Without Mitigation	Negligible	Neutral
	With Mitigation	N/A	N/A
Social responsibility	Without Mitigation	Low	Positive
	With Mitigation	Medium	Positive
Impact:	Mitigation	Significance	Status
IMPACTS ASSOCIATED WITH THE 132KV POWER LINE BETWEEN THE ANKERLIG POWER STATION AND THE KOEBERG-DASSENBERGH LINE AND HV YARD			
Employment	Without Mitigation	Low	Positive
	With Mitigation	Low	Positive
Intrusive Impacts	Without Mitigation	Low	Negative
	With Mitigation	Low	Negative
Impacts on land use	Without Mitigation	Negligible	Neutral
	With Mitigation	N/A	N/A

Recommendations regarding preferred alternatives

Although a minimum of three gas turbines is required to facilitate the phasing of the Koeberg off-site supply, it is recommended that the fourth unit required to be installed at Ankerlig to facilitate the relocation process should remain at Ankerlig for economic reasons and to provide additional operational flexibility. The recommendation is therefore that four gas turbines will ultimately be installed at the Ankerlig Power Station site, namely three from Acacia and one from Port Rex.

As the relocation of the units to the Ankerlig Power Station site is considered to be technically preferred option and is within the Ankerlig Power Station site, no site alternatives have been investigated as part of the EIA process.

The relocation of the Acacia gas turbines to the Ankerlig Power Station site will relieve the network congestion in and around the Acacia Power Station whilst facilitating the strengthening of the distribution network in the vicinity of the

Ankerlig Power Station located in Atlantis, Cape Town, which is needed for future growth in the area.

Conclusion

Impacts associated with the decommissioning of the units at both Acacia and Port Rex power stations are expected to be localised in the short-term. The power station currently has an existing air quality, noise and visual impact on the local area. The decommissioning of the units will remove this existing impact from the area and is therefore expected to have a positive impact on the local environment.

Potential social impacts on the population of Atlantis and surrounding areas can be considered cumulative to those experienced as result of the existing OCGT units, additional units currently under construction, and the planned conversion of these units to CCGT units. These include the possibility of limited positive impacts of possible casual labour used during construction, and the possibility of increased social investment, and potential negative impacts on 'sense of place' resulting from the perception of the area being used as an electricity generation hub, without sufficient benefits accruing to the host community of Atlantis.

While the relocation of units from Acacia and Port Rex is considered the preferred social alternative from a broader social perspective, it is important that cumulative impacts on the receiving community of Atlantis be considered, and appropriate mitigation applied. This can most effectively be done by maximizing social benefit through an increased focus on social investment in the area.

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List of Acronyms

AH	Agricultural Holdings
ASGI-SA:	Accelerated Shared Growth Initiative of South Africa
BEE:	Black Economic Empowerment
CCGT	Combined Cycle Gas Turbine
CDI	City Development Index
CMC	Community Monitoring Committee
CoCT	City of Cape Town
DEA&DP:	Department of Environmental Affairs and Development Planning
EIA:	Environmental Impact Assessment
EMFs	Electric and Magnetic Fields
ESDEF:	Eskom Social Development Forum
IDP:	Integrated Development Plan
LED:	Local Economic Development
OCGT:	Open Cycle Gas Turbine
SIA:	Social Impact Assessment
SME/SMME:	Small Medium and Micro Enterprises
TBA	To be assessed

List of Annexes:

1 INTRODUCTION

Eskom Holdings Limited is investigating the decommissioning of existing aero derivative gas turbine units at its Acacia and Port Rex Power Stations, and the relocation of these units to the Ankerlig Power Station site in Atlantis, to stabilise the transmission network in the area and ensure the required dedicated back-up power supply to the Koeberg Nuclear Power Station.

Eskom is also proposing to turn the existing Koeberg-Dassenberg 132kv line into Ankerlig and supply the dedicate line to connect the three Acacia and one Port Rex aero derivative gas turbines to Koeberg. This 132kv power line would be connected to a new 132kv HV yard adjacent to the now-to-be extended substation (high voltage (HV) yard) at the Ankerlig Power Station.

Savannah Environmental has been appointed as an independent consultant to undertake the required Environmental Impact Assessment (EIA) and public participation for the proposed project. Savannah Environmental contracted Southern Hemisphere Consultants to undertake a specialist social assessment as part of the EIA. Social inputs have been requested for the decommissioning of the Acacia and Port Rex Units, and the relocation of these units at the Ankerlig Station in Atlantis. The proposed transmission integration component is not anticipated to pose significant social impacts and has thus not been included in the consultants' brief for this assignment.

The consultant's approach to undertaking this assessment is described in Section 2 below.

1.1 Study Area

The Ankerlig Power Station is located within the western portion of the proclaimed Industrial Area of Atlantis on the Farm No 1183 and a Portion of Farm Witzand 2, Atlantis, Cape Town, both of which are owned by Eskom.

Port Rex and Acacia are gas turbine stations owned by Eskom and are part of the Eskom's Peaking Generation group of power stations. These two power stations have three gas turbine generators each with an output of approximately 57 MW per unit. The stations each have an installed capacity of 171MW.

The Acacia Power station is located on Portion 7 of the Farm Montague Gardens in Goodwood. This is located in close proximity to the residential areas of Bothasig, Edgemead and Monta Vista. The Port Rex Power Station is located in Cape Road in the Woodbrook industrial area of East London.

1.2 Alternatives to assess for EIA

Alternatives that have been identified for investigation as part of this social scoping assessment include:

1. Decommissioning and relocation of the three existing aero derivative gas turbine units at the Acacia Power Station to the existing Ankerlig Power Station. As the relocation of three units from Acacia to be relocated to the Ankerlig Power Station site is considered to be technically preferred option and is within the Acacia Power Station site, no site alternatives have been investigated as part of the EIA process. Alternatives assessed were thus:
 - a. Decommissioning and relocation as proposed
 - b. No-go alternative
2. Decommissioning and relocation of one aero derivative gas turbine unit at the Port Rex to the existing Ankerlig Power Station. . As the decommissioning of one unit at Port Rex to be relocated to Ankerlig Power Station site is considered to be technically preferred option and is within the Port Rex site, no site alternatives have been investigated as part of the EIA process. Alternatives assessed were thus:
 - a. Decommissioning and relocation as proposed
 - b. No-go alternative
3. Re-erection and commissioning of four gas turbines at the Ankerlig Power Station, namely one from Port Rex and three from Acacia. . As the relocation of the units to the Ankerlig Power Station site is considered to be technically preferred option and is within the Ankerlig Power Station site, no site alternatives have been investigated as part of the EIA process. Alternatives assessed were thus:
 - a. Commissioning of four additional gas turbine units at Ankerlig as proposed
 - b. No-go alternative
4. The 132KV Power line between Ankerlig Power Station and the Koeberg-Dassenberg line and HV Yard. Two line route options were selected for assessment in this EIA

Option 1: From structure DA-KO9 almost due north-west with a dogleg to the north into the 132kV yard from the east. This route is the shortest at 2.6km and has the least bends and no HV line crossings.

Option 2: From structure DA-KO12 south of and parallel to the 400kV lines into Ankerlig. This route crosses the 400kV lines and heads north-east until it takes the same dog-leg as Option 1 into the 132kV yard from the east. This route is the most problematical as it has to cross below the four 400kV lines and also cross a railway servitude. It is about 3.8km long.

As the relocation of the units to the Ankerlig Power Station site is considered to be technically preferred option and is within the Ankerlig Power Station site, no site alternatives have been investigated as part of the EIA process.

2 APPROACH AND METHODOGOLOY

2.1 Approach

The approach to this study follows guidelines outlined in the **Western Cape Department of Environmental Affairs and Development Planning's Guidelines for involving Social Specialists in an EIA**. Box 1 below provides the definition of Social Impacts and Social Impact Assessments according to these guidelines:

Box 1: Definition of Social Impacts and Social Impact Assessment

(from Western Cape Department of Environmental Affairs and Development Planning

Guidelines for involving Social Specialists in an EIA)

Social impacts can be defined as "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 a physical reality, while other social impacts are perceptual or emotional." (Vanclay, 2002).

However, the issue of social impacts is complicated by the way in which different people from different cultural, ethic, religious, gender, and educational backgrounds etc view the world. This is referred to as the "social construct of reality". The social construct of reality informs people's worldview and the way in which they react to changes.

Social Impact Assessment 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 (Vanclay, 2002).

(Barbour, 2007:9)

The assessment of social impacts that may be associated with the proposed decommissioning and relocation of the three gas turbine units at Acacia Power Station and one gas unit at Port Rex Station to the existing Ankerlig Power Station site in Atlantis Industria was conducted through a combination of:

2.2 Activities

This section provides a brief overview of activities undertaken to assess potential impacts of respectively:

- Decommissioning of the Acacia and Port Rex Units, and
- Relocation and recommissioning of units at the Ankerlig Power Station
- Data analysis and Reporting

2.2.1 Acacia & Port Rex Units Decommissioning

Assessment of potential impacts of the decommissioning of units at the Acacia and Port Rex stations involved:

- **Providing a socio-economic baseline context** - A socio-economic baseline context was done for areas surrounding the Acacia and Port Rex Power Stations based on statistics from the SA Census of 2001, obtained from the City of Cape Town (Acacia) and Municipal Demarcation Board (Port Rex) websites.
- **Review of issues and comments** - Issues and comments obtained during the Public Participation Process were reviewed to identify potential social impacts that may require further investigation.
- **Review of employment impacts**
 - Potential temporary employment opportunities to be created during the decommissioning process were estimated based on information provided by Eskom.
 - Impacts on existing employment at the Acacia and Port Rex Units were estimated based on information obtained from the Draft Scoping Report for the decommissioning process.
 - Potential temporary employment opportunities to be created during the relocation and construction of units were estimated based on employment estimates identified for construction of existing units at Ankerlig, and consultation with Eskom staff.
 - Additional construction employment would be roughly similar to initial construction of the OCGT units. Eskom staff will be used to decommission and to re-assemble. Skilled people from other companies may be use for assistance. The number of unskilled casuals employed will be very low, if any at all.
 - Impacts on ongoing employment for operation and maintenance of the additional units at the Ankerlig station were estimated based on information obtained from the Draft Scoping Report for the decommissioning process.

- **Review of related specialist studies** - A review of social impacts associated with the workers in the area and transportation of the units to Ankerlig. Reconstruction of units at Ankerlig - this has been limited to a review of the visual impact study conducted, as other assessments have not been made available in time for review.
- **Review of previous Ankerlig Assessments** - The assessment of potential impacts of relocating and constructing units at the Ankerlig station in Atlantis was based largely on previous impact assessments that have been undertaken for the initial construction of Gas Turbine units at this location (Afrosearch, 2005), as well as subsequent assessments undertaken for the expansion of the Ankerlig station with the construction of additional units (MasterQ, 2007), and the proposed conversion of the Open Cycle Gas Turbine Units constructed to Combined Cycle Units (Southern Hemisphere, 2008)
- **Review of issues and comments** - Issues and comments obtained during the Public Participation Process were reviewed to identify potential social impacts that may require further investigation.

2.2.2 Reporting

Reporting has been done with reference to the Draft Scoping Report and the Social Impact Assessment of the previous Ankerlig Power Station assessments.

2.3 Assumptions

- All relevant project information has been provided to the consultant.
- The assessment is largely based on a review of previous Ankerlig Power Station assessments; issues identified during the Public Participation, and relevant specialist studies.

3 SOCIO-ECONOMIC PROFILE OF AFFECTED POPULATION

This section provides an overview of the potentially affected socio-economic environment, which includes:

- The population around the Ankerlig Power Station, including the communities of Atlantis as well as Melkbosstrand and Duynefontein in the City of Cape Town Metropolitan Municipality of the Western Cape Province.
- The population around the Acacia Power Station, which includes the communities of Edgemead, Bothasig and Monte Vista in the City of Cape Town Metropolitan Municipality of the Western Cape Province.
- The population around the Port Rex Power Station in the Woodbrooke Industrial Area of East London in Ward 5 of the Buffalo City Local Municipality, situated in the of the Eastern Cape Province,

3.1 Ankerlig Power Station - Atlantis and surrounding communities

This section has been summarised from the Social Impact Assessment conducted in 2008 for the conversion of Open Cycle Gas Turbine Units at the Ankerlig Power Station to Combined Cycle Gas Turbine Units. A detailed socio-economic profile of this area as presented in the Conversion SIA is included in **Appendix 1**.

The study area is located within the Koeberg and Blaauwberg sub-councils of the City of Cape Town Metropolitan Municipality in the Western Cape Province. According to 2006 Municipal Demarcation, Atlantis falls between Ward 29 (northwest) and Ward 32 (southeast) of the Koeberg sub-council.

The population potentially affected by the development include:

- Residents of Atlantis, particularly the suburbs of Avondale, Wesfleur, Protea Park, Beacon Hill and Robinvale, and the nearby informal settlement of Witsand, situated in close proximity to the Industrial area
- Residents of Melkbosstrand, Duynefontein and Van Riebeeckstrand
- Landowners of farms situated in the Malmesbury non-urban area immediately south of Atlantis Industrial Area.

This section begins with an overview of current land uses around the study area. The remainder of the section provides a detailed socio-economic profile of the surrounding population, including Atlantis and surrounding rural areas, as well as Melkbosstrand. The section concludes with an overview of current plans for economic development in the affected wards. **(See Annexure 1 for detailed socio-economic profile)**

3.1.1 Current land uses

The Ankerlig Power Station site is situated in the Atlantis Industrial area, and is currently occupied by the OCGT power station, which is proposed to be converted

into a CCGT power station. The existing power station consists of 9 OCGT units (i.e. four existing OCGT units, plus an additional five OCGT units currently under construction).

3.1.2 Demographic Profile

At the time of the 2001 Census, the total population of the City of Cape Town was about 2.9 million people. Within the study area, the Atlantis population comprised of just under 55 000 people, while the surrounding non-urban areas (Atlantis non-urban according to suburb profiles) housed just over 4 000 people, and just under 6 500 people resided in the Melkbosstrand area. Females outnumber males in all areas except Atlantis non-urban, where males predominate by a slight margin.

The age distribution in Atlantis is slightly younger than the average for the City of Cape Town, with a larger percentage (just under 40%) aged under 17. The corresponding percentage in Melkbosstrand is significantly lower at only 24%. By contrast the percentage of older people in the age categories above 35 is significantly higher in Melkbosstrand (~55%) than in the broader Cape Town (~35%) or Atlantis (28%) and surrounding non-urban areas (37%). Almost a third of the population in Atlantis are between the ages of 18 and 34, while a quarter is aged 35 to 54. These age groups may be considered as the potential labour force, together comprising about 55% of the Atlantis population, and 57% of Atlantis non-urban.

The Atlantis population is predominantly Coloured (92.6%), with a small percentage (6.6%) Black African¹ and less than one per cent respectively White and Indian. The population of Atlantis non-urban is also predominantly Coloured (68%) according to the 2001 census, with a significantly greater percentage of Whites (22%) and slightly more Black African (10%). By contrast Melkbosstrand is predominantly White (89%).

Afrikaans is the most common language spoken in Atlantis (87%), Atlantis non-urban (78%) and to a somewhat lesser extent Melkbosstrand (58%). English is the first language of 38% of Melkbosstrand residents, 16% of those in Atlantis non-urban, and less than 10% of the Atlantis community.

3.1.3 Education, Health and Social Services

Educational facilities in Atlantis include four high schools, 13 primary schools, three special schools catering for students with special needs, and two higher institutions. Just over 20% of Atlantis residents aged over 20 had completed matric in 2001, and of these less than 4% had attained any further levels of education. The percentage with 'no schooling' was slightly higher in Atlantis non-

¹ This proportion can be expected to have increased since 2001, with the Black African group noted to be the fastest growing across the Western Cape.

urban at 9%, compared to 4% in Atlantis. By contrast Melkbosstrand had less than 2% with no education, over three quarters had completed matric, and just under a third had attained some level of tertiary education, about half of which is certificates, with the other half being various levels of degrees.

Health facilities in and around Atlantis include the Wesfleur Hospital, Wesfleur Medical Centre and Wesfleur Private Clinic, as well as Protea Park and Saxon Sea clinics, and the Mamre Clinic. While the most common cause of death recorded in Blaauwberg district in 2002 (9.4% of deaths) as well as 2003 (8.7%) was Ischaemic heart disease, HIV/ AIDS had risen to the greatest killer by 2004 (7% of total deaths). TB accounted for a further 4.5% of deaths in 2004. HIV Prevalence in the Blaauwberg Health District was estimated at 4.5% in 2003/4 according to an ANC HIV Prevalence Survey. Total TB incidence in the District stood at 513 people in 2002, while the total rate recorded for Cape Town was 7 366 infections.

There is a lack of suitable state welfare programmes to meet the specific needs of the area. A Multi-Purpose Community Centre that was erected in Atlantis, and is capable of providing various social services, but remains largely under-utilised. The rapidly growing incidence of HIV/AIDS infection is placing an increasing burden on existing health services, including hospital and medical facilities. The Red Door Database (2007) lists a total of 67 Community Based Organisations (CBOs) operating in Atlantis. Local Government Offices of the Blaauwberg District Council dealing with Social Services include a District Office situated in Atlantis Industria, and a Satellite Office in Sherwood.

3.1.4 Employment and income

The economically active population comprised of about 46% of City of Cape Town residents aged between 15 and 65 in 2001. Figures for the study area are similar, though slightly lower for Atlantis at 44%, and higher for Melkbosstrand (48%). Of those indicated as economically active, 31% in Atlantis are unemployed, slightly higher than the average for the City of Cape Town as a whole. Corresponding percentages are much lower for Atlantis non-urban (13%), and Melkbosstrand (7%).

Of the economically active residents of Atlantis that are employed, approximately 12% commute to jobs outside Atlantis. Another 25% are employed by local industries, and 5% are employed by small- medium- and micro-enterprises (SMMEs). Outsiders who commute to the area hold a significant number of jobs in Atlantis. These jobs generally fall in the educational and other professional occupational categories.

Over 40% of those employed in the Atlantis non-urban area in 2001 were engaged in elementary occupations. By comparison only 22% of employed Atlantis residents were cited in such elementary occupations, although this was still the predominant occupation. Also common however were plant and machine operators and assemblers (19%) as well as craft and related trade workers (18%), while 12% were cited as clerks. The presence of these skills should be

considered with regards to possible employment opportunities that the proposed development may offer.

Manufacturing represents the largest source of employment in the area. A total of 107 Manufacturers are listed in the Red Door database. The area experienced increases in employment in the construction, financial, real estate, business and wholesale sectors between 1996 and 2001. Sectors which experienced the largest setback in terms of growth includes mining (a decrease of 32%) and, to a much smaller extent electricity, gas and water services (a decrease of 10%). The Red Door Database lists a total of 59 SMMEs concerned with construction and building activities. Other SMMEs listed include Automotives (4), Bed and Breakfasts (9), Manufacturing (6), Catering (5), Cleaning services (4), Engineering (8), Information Technologies (2) Labour Consultants (4), Maintenance (18), Retain Suppliers (5), Security Services (5), Services (19), and Transport (11).

Over half of those employed in Atlantis, and 62% in Atlantis non-urban earned less than R1 600 per month in 2001, with almost all the remainder (45% in Atlantis and 32% in Atlantis non-urban) earning between R1 600 and R6 400 per month. Income of Melkbosstrand residents was notably higher, with about half earning over R6 400 per month. Over a third of Atlantis households lived on less than R19 200 per annum in 2001, with a further 50% citing an annual household income of between R19 200 and R76 800. The corresponding percentage for the lowest income group in Atlantis non-urban was 10% higher, with 44% with an annual household income of less than R19 200, with a further 40% in the group between R19 200 and R76 800. By contrast Melkbosstrand only had 14% and 20% of households in these lower income brackets, with about 65% of households citing an income of greater than R76 800 per annum.

3.1.5 Housing and Services

Atlantis has experienced land invasions and the growth of informal settlements, especially in the area that has become known as Witsand. The percentage in informal dwellings is lower than that for the broader Cape Town (18%) in all parts of the study area, but notably higher in Atlantis non urban (11%) and Atlantis (9% - which would include residents of the Witsand settlement) than in Melkbosstrand (1%). While over 70% of Atlantis households live in dwellings which they own, only 22% have fully paid these off. By comparison, 36% of Melkbosstrand households live in houses that are owned and fully paid, and a further 40% in houses they are paying off. In Atlantis non-urban the majority of households either reside rent-free (46%), or rented housing (31%). Housing ownership is relevant to consider when assessing potential impact on people's sense of and attachment to place and personal investment in the area.

According to the 2001 Census, 70% of South Africa's population used electricity as primary source of energy for lighting. The corresponding figure in the Western Cape was significantly higher at 88%, with that in the City of Cape Town being 89%. The current project is intended to provide additional capacity to the National grid, which will thus have a National impact affecting the South African

population of close to 50 million people belonging to about 12 million households according to the 2001 Census. Within the study area electricity use for lighting is almost universal in Melkbosstrand (98% of households) and only slightly less common in Atlantis (92%) where paraffin is the other form most cited (7%). Atlantis non-urban noted this to be slightly less common at only 64% of households using electricity for lighting, while 32% rely on candles, and smaller percentages on gas, paraffin and other sources of energy.

Atlantis receives the bulk of its water supply from the Atlantis Aquifer. Access to piped water inside dwellings is higher in Atlantis (83%) and Melkbosstrand (93%) than in the broader Cape Town (69%). This percentage is significantly lower in Atlantis non-urban at only 36%; with 23% citing piped water in the yard, and over 30% piped water on a community stand, mostly over 200m from the dwelling.

The comparatively lower levels of living prevalent in the Atlantis non-urban area is highlighted in terms of access to sanitation facilities, with only half of all households having access to flush toilets (including both sewerage and septic tanks), compared to over 90% in Atlantis and Melkbosstrand. About a fifth of Atlantis non-urban households have no sanitation facilities, while 17% rely on bucket latrines. The remainder use chemical toilets and pit latrines.

While almost all households in Atlantis and Melkbosstrand had refuse removed by the local authority in 2001, this was true for less than a quarter of households in Atlantis non-urban, the majority (65%) of whom use their own refuse dumps. The potential impact of the proposed transmission line on a proposed municipal landfill site planned for the area needs to be considered in selecting a preferred corridor.

Travelling by foot is the dominant mode of transport to work or school, followed by minibus taxis. The use of buses is somewhat less frequent. Due to the absence of passenger train services in the area, very little use is made of this form of transport.

3.1.6 City Development Index

The City Development Index (CDI) is a composite index looking at: infrastructure (water, sewerage, telephone and electricity) health (life expectancy, divided by infant mortality), education (adult literacy and gross enrolment ratio) and income (mean household income). Overall, the City of Cape Town has a higher CDI of 0,88 compared to 0,81 for the rest of the Western Cape Province. Cape Town outperformed the rest of the province in terms of infrastructure, income and waste disposal. Atlantis rates slightly lower than the City average at 0.86, but still higher than the broader Western Cape Province. Its rating for health is however slightly lower than that for both City and Province. Melkbosstrand by contrast rates higher than the City of Cape Town at 0.92, scoring higher in all indexes.

3.1.7 Plans for economic development

Despite its current problems, Atlantis offers significant potential for economic development. Its assets include proximity to the West Coast Biosphere, the historical settlements of Mamre and Pella and the expanding high-income housing developments on the West Coast. Large areas of land are currently services for industrial investment, and are available at very low cost. Because of this development potential, the Cape Town Metropolitan Municipality IDP (2004) identified Atlantis as one of the focal areas for residential upgrading. The City is currently in the process of developing an economic development action plan for the area

3.2 Acacia Power Station

3.2.1 Current Land Uses

The Acacia Power Station is located in Ward 5 of the Cape Town Metropolitan Municipality. The site is located in close proximity to the residential areas of Bothasig, Edgemean and Monta Vista.

The station was constructed in 1976, and has three gas turbine generators, which are similar to Boeing 707 engines. The first unit was commissioned on 1 March 1976, making the station 26 years old. Acacia provides a dedicated back-up electrical supply to Koeberg Nuclear Power Station, something which is a requirement from the Nuclear Energy Regulator (NER) in terms of the Eskom's license for Koeberg Power Station.

3.2.2 Demographic Profile

At the time of the 2001 Census, the total population of the City of Cape Town was about 2.9 million people. The Acacia site is located in close proximity to the communities of Bothasig, Edgemean and Monte Vista, which are long established formal suburbs of Cape Town. Within the study area, the population comprised of around 24 731 people. Males out-number the females in all areas, where the females predominate by a slight margin.

The age distribution in areas around the Acacia Power Station is slightly older, with a large percentage of 32% aged between 35-54 years. By contrast the percentage of younger people in the age categories of 18-34 is significantly lower. These age groups may be considered as the potential labour force, together comprising of 60% of the study area population.

The population is predominantly White (84%), with a small percentage (1%) of Indian/Asian, 11% of Coloureds and 3% Black African. English is the most common language spoken (75%), while Afrikaans is 21%.

3.2.3 Employment and Income

According to the Census 2001, the labour force for areas surrounding the Acacia Power Station was estimated to be 10 727 people (~43%). The area has a low rate of unemployment: Census 2001 puts unemployment at 540 people. Outside of the labour force, at least 11 267 people (~46%) are economically active. Statistics show that the largest numbers of jobs held are professionals, legislators, senior officials and managers, technicians and associate professionals and the majority being clerks. With regard to household subsistence level per month (Census 2001), the largest percentage (~46%) earn between R1601-R6400 a month, while a slightly smaller percentage (~41%) earn between R6401-R25600. On the lower ends of the spectrum, 1% have no income, 3% earn R1-R800 and 6% R801-R1600 per month. On the higher end 3% earn R25601-R10400 or more per month.

3.2.4 City Development Index

The City Development Index (CDI) is a composite index looking at: infrastructure (water, sewerage, telephone and electricity) health (life expectancy, divided by infant mortality), education (adult literacy and gross enrolment ratio) and income (mean household income). Overall, the City of Cape Town has a higher CDI of 0,83 compared to 0,81 for the rest of the Western Cape Province. Cape Town outperformed the rest of the province in terms of infrastructure, income and waste disposal.

3.2.5 Plans for Economic Development

Regenerating key urban nodes and their surrounds: Considerable success has already been achieved in turning around the Cape Town CBD and significant investment is starting to flow into this areas. There is considerable potential to expand the lessons of urban regeneration to other urban nodes that have undergone decline. In addition, there is also considerable potential for 'infill' housing in proximity to these urban nodes and other places of high opportunity.

3.3 Port Rex Power Station

3.3.1 Current Land Uses

The Port Rex Power Station is located within the Woodbrook industrial area, Cape Road in East London. East London is in Ward five of the Buffalo City Municipality. It is part of the Eskom's Peaking Generation group of power stations. The power station was built in 1976 and still in use. There are no plans to decommission the power station.

3.3.2 Demographic Profile

According to Statistics South Africa, the total population of Buffalo City in 2001, was 701 890, of which 201 862 resided in the East London area. Port Rex is located in Ward 5 of the Buffalo City Municipality, and had a total population of 12 761 people according to the 2001 census. The Buffalo City population has grown relatively slowly from 1996-2001 at 2.87%, an average of 0.6% per annum. Females outnumber the males in all areas at 53%, where the males are 47%. The age distribution in the Buffalo City area is relatively young, with a large percentage of 37% aged between 15-34 years. The percentage of the younger population has grown since 1996, indicating an increased number of people looking for employment opportunities. Approximately 8% of Buffalo city's population is 60 years older (Census 2001).

The population of Ward 5 is predominantly (44%) Black African, with 29% Coloured, 26% White, and 2% Indian.

Just under half (49%) of Ward 5's population aged 20 and above had matriculated, while 17% had attained higher levels of education according to the 2001 Census.

3.3.3 Employment and Income

The labour force for the Buffalo City area in 1994 (Statistic SA, 2001) was estimated to be 285 000 people, of whom 56% were formally employed, 29% were unemployed and 15% were active in the informal sector. Outside of the labour force, at least 70 000 people are engaged in subsistence activities. Buffalo City has a high percentage of unemployment; Census 2001 puts unemployment at 53%. The city is relatively poor, with about 70% of the city's population earning less than the household subsistence level of +-R1500 per month (Census 2001)

Among African and Asian unemployed people, about 20% have been unemployed for up to three years. Only 6% of White population unemployed people fall into this category. One of the main problems of finding work is that people need more skills training and higher qualifications. Statistics show that the formal sector, the public and manufacturing sectors provide the largest number of jobs.

Taking all population groups into account, the biggest single item of expenditure is food and the majority are not able to save.

Within Ward 5 approximately 45% of those in the potentially economically active age group (15-65) were classified as employed in the 2001 Census. Unemployment stood at 20% in this ward, while the remaining 35% were classified as "not economically active". Of those employed the vast majority (88%) were classified as paid employees, 9% could be considered self-employed. Paid family workers comprised 1% of those employed, and employers another 1%. The most common occupation was clerks, accounting for 18% of those employed, followed by technicians and associated professions (15%). Main

sectors of employment were community services (25%), wholesale and retail (19%), manufacturing (15%), and business services (13%).

3.3.4 Plans for Economic Development

Buffalo City municipality has since the late 1990s commissioned a number of studies to investigate economic rejuvenation and integration of its wards. One of the institutional vehicles proposed to advance and leverage the development of potential investment opportunities inherent in various area-specific parts of the city, is the Buffalo City Development Agency (BCDA). The BCDA has recently been established as a Section 21 Company, to take responsibility initially for managing the development of certain areas highlighted and peripheral areas.

4 IMPACT ASSESSMENT

4.1 Summary of potential social impacts assessed in this SIA

Table 1 below provides a summary of potential social impacts of the Decommissioning and Relocation of the three gas turbine units at Acacia Power Station and one gas unit at Port Rex Station to the existing Ankerlig Power Station site in Atlantis Industria assessed in this SIA

Table 1: Summary of Potential Social Impacts Assessed

Impacts	Decommissioning of the gas units at the Acacia and Port Rex sites		Relocation of the gas units to the Ankerlig Power Station		132kv power line between the Ankerlig Power Station and the Koeberg-Dassenberg line and HV yard	
	C	O	C	O	C	O
Intrusive impacts	X	X	X	X	X	X
Local traffic impacts	X		X	X		
Impact on sense of place				X		
Impact on health and safety		X		X		
Employment Opportunities	X		X	X	X	X
Land Use		X		X		X
Social Investment						

The impacts listed above are discussed in more detail in the sections below, dealing with specific project components and phases at which impacts may be expected. Where potential impacts are similar for the different components and project phases, this is noted with cross-references to the relevant sections where these are first described to avoid unnecessary duplication. Potential social impacts associated with the Decommissioning and Relocation of the three gas turbine units at Acacia Power Station and one gas unit at Port Rex Station to the existing Ankerlig Power Station site in Atlantis Industria.

The proposed relocation of the gas units from Acacia and the Port Rex sites will be developed on the site of the existing Ankerlig Power Station, and will not require any additional land take outside of the existing power station boundaries.

The following sections describe the social impacts that are expected to arise during the Decommissioning and Relocation of the three gas turbine units at Acacia Power Station and one gas unit at Port Rex Station to the existing Ankerlig Power Station site. Potentially relevant issues that were considered for this assessment are as follows:

1. Intrusion impacts (including visual and noise impacts)
2. Local traffic impacts (transportation of components and fuel)
3. Impact on sense of place (related to intrusive impacts and perceptions of the development)
4. Impact on health and safety (related to air quality and risks of fuel storage)
5. Potential Employment Opportunities
6. Impacts on Land Use

4.2 Potential Social Impacts associated with the decommissioning of the gas units at the Acacia site

The Acacia Power Station is located in close proximity to the residential areas of Bothasig, Edgemead and Monta Vista. Impacts on the social environmental associated with the decommissioning phase and subsequent long term impacts. Issues that were considered for this assessment are as follows:

1. Employment opportunities
2. Intrusive impacts
3. Impacts on health (Air quality)
4. Impacts on Land Use
5. Impacts on traffic

4.2.1 Employment Opportunities

Nature of Impact

There may be limited employment opportunities associated with the decommissioning of the Acacia and Port Rex units. Eskom staff will be used for the decommissioning. However, the majority of these employment opportunities are expected to require skilled personnel. Skilled people from other companies may be use for assistance. The number of unskilled casuals will be very low, if any at all. Therefore, any benefits to local communities would be limited. Limited opportunities for unskilled (de)construction labour could benefit members of the

Jo Slovo township near Milnerton, which would be the closest source of unskilled labour to the Acacia site.

Eskom will use its people to decommission and to re-assemble; they may use skilled people from other companies to assist with "hands". The number of unskilled casuals will be very low, if any at all.

Impact Summary

Nature: Economic/Social		
	Without Mitigation	With Mitigation
Extent	Local (2)	Local (2)
Duration	Very short (1)	Very short (1)
Magnitude	Small (0)	Low (2)
Probability	Very improbable (1)	Improbable (2)
Significance	$(2+1+0)1=3=$ Low	$(2+1+2)2 =10=$ Low
Status	Positive	Positive
Reversibility		
Can impacts be mitigated?	Minimally	
Mitigation:		
<ul style="list-style-type: none"> • use local casual labour where possible during decommissioning 		
Cumulative Impacts:		
N/A		
Residual Impacts:		
N/A		

Comparison of Alternatives

Alternative	Impact
Decommissioning and relocation as proposed	Limited (if any) potential for temporary casual labour
No-go alternative	No impact

4.2.2 Intrusive Impacts

Nature of Impact

Intrusive impacts mainly relate to visual and noise impacts. Impacts will be very short-term during decommissioning activities and are thus not expected to have any significant impact on the nearest communities in Bothasig, Edgemoed and Monta Vista. The noise impact is therefore expected to be localised and of low significance.

The Acacia Power Station currently has noise and visual impacts on surrounding communities. The decommissioning of the units at the Acacia Power Station site will remove these existing impacts from the area and is therefore expected to have a positive impact on the social environment at a local level. Impacts associated with decommissioning activities are expected to be of local extent and

short duration on the nearest communities in Bothasig, Edgemean and Monta Vista. The Edgemean Residents' Association noted its support of the proposed decommissioning and relocation during the public participation process, noting it to have potentially positive impacts on residents living near the Acacia station. The existing transmission HV yard will not be decommissioned, and therefore this positive impact is expected to be limited.

Impact Summary

Nature: Intrusive impacts		
	Without Mitigation	With Mitigation
Extent	Local (2)	N/A
Duration	Very short (1)	N/A
Magnitude	Low (2)	N/A
Probability	Very improbable (1)	N/A
Significance	(2+2+1) 1 =5=Low	N/A
Status	Positive	N/A
Reversibility	N/A	N/A
Can impacts be mitigated?	N/A	
Mitigation: N/A		
Cumulative Impacts: N/A		
Residual Impacts: N/A		

Comparison of Alternatives

Alternative	Impact
Decommissioning and relocation as proposed	No significant impact during decommissioning. Positive long term impact
No-go alternative	No impact

4.2.3 Impacts on Health (Air quality)

Nature of Impact

Health impacts are mainly associated with impacts on Air Quality. These are not assessed for the Acacia Power Station as it currently has an impact on the local area in terms of air quality. The decommissioning of the units at the Acacia Power Station site will remove these impacts from the area and is therefore expected to have a positive impact on the social environment at a local level, reducing impacts on air quality that could impact on health.

Impact Summary

Nature: Impacts on health		
	Without Mitigation	With Mitigation
Extent	Local (2)	N/A
Duration	Long (4)	N/A
Magnitude	Minor (2)	N/A
Probability	Probable (3)	N/A
Significance	$(2+4+2)3 = 24 = \text{Low}$	N/A
Status	Positive	N/A
Reversibility	N/A	N/A
Irreplaceable loss of resources	N/A	
Can impacts be mitigated?	N/A	
Mitigation: N/A		
Cumulative Impacts: N/A		
Residual Impacts: N/A		

Comparison of Alternatives

Alternative	Impact
Decommissioning and relocation as proposed	No significant impact during decommissioning. Positive long term impact
No-go alternative	No impact

4.2.4 Land Use

Nature of Impact

Land use of the site after decommissioning and relocation of the units is expected to be commercialised and/or industrial. The transmission HV yard on the site will remain in operation, and may be extended in the future. The remainder of the site will remain in use by Eskom, possibly for use as offices. Impact on landuse will thus be insignificant, and is not further addressed.

Comparison of Alternatives

Alternative	Impact
Decommissioning and relocation as proposed	No significant impact
No-go alternative	No additional impact

4.2.5 Local traffic impacts

Nature of Impact

Local traffic impacts are associated with construction vehicles and vehicles transporting components from the Acacia Power Station site to Ankerlig Power

Station site. Increase in traffic during the construction phase can potentially result in the disruption of daily movement patterns for local commuters.

Impact Summary

Nature: local traffic		
	Without Mitigation	With Mitigation
Extent	Widespread (3)	N/A
Duration	Short term (2)	N/A
Magnitude	Low (4)	N/A
Probability	Highly probable (4)	N/A
Significance	$(3+2+4)4 = 36 = \text{Medium}$	N/A
Status	Negative	N/A
Reversibility	Impacts on road conditions and safety would extend and worsen	N/A
Irreplaceable loss of resources	N/A	
Can impacts be mitigated?	N/A	
Mitigation: N/A		
Cumulative Impacts: N/A		
Residual Impacts: N/A		

Comparison of Alternatives

Alternative	Impact
Decommissioning and relocation as proposed	Some short-term impact on traffic and road conditions due to transport of components during decommissioning.
No-go alternative	No impact

4.3 Potential Social Impacts associated with the decommissioning of the gas units at the Port Rex site

Due to the industrial nature of the area within which the Port Rex Power Station is located, impacts on the social environment are expected to be limited. Potential impacts are expected to be similar to those associated with the relocation of the units from the Acacia Power Station site as discussed above.

Other Issues relevant are as follows:

1. Employment opportunities
2. Intrusive impacts
3. Impacts on health
4. Impacts on Land Use
5. Local traffic impacts

4.3.1 Employment Opportunities

Nature of Impact

There may be limited employment opportunities associated with the decommissioning of the Port Rex unit. Eskom staff will be used for the decommissioning. Additional construction employment would be roughly similar to initial construction of the OCGT units. However, the majority of these employment opportunities are expected to require skilled personnel. Skilled people from other companies may be use for assistance. The number of unskilled casuals will be very low, if any at all. Therefore, any benefits to local communities would be limited.

Impact Summary

Same as for Acacia, see 4.2.1

Comparison of Alternatives

Same as for Acacia, see 4.2.1

4.3.2 Intrusive Impacts

Nature of Impact

Intrusive impacts mainly relate to visual and noise impacts. These are discussed in detail in separate specialist studies, but are noted here for their social significance. The Port Rex Power Station currently has some noise and visual impacts on the surrounding Woodbrook Industrial area. The decommissioning of the units at the Port Rex Power Station site will remove these existing impacts from the area and is therefore expected to have a positive impact on the social environment at a local level.

Impact Summary

Same as for Acacia, see 4.2.2

Comparison of Alternatives

Same as for Acacia, see 4.2.2

4.3.3 Impact on Health (Air quality)

Nature of Impact

Decommissioning and relocation of the Port Rex unit will result in lower emissions and thus have a positive impact on surrounding neighbourhoods.

Impact Summary

Same as for Acacia, see 4.2.3

Comparison of Alternatives

Same as for Acacia, see 4.2.3

4.3.4 Land Use

Nature of Impact

As two of the three units at the Port Rex site will remain in operation at this site, the land use of the site will remain that of a power station.

Impact Summary

Same as for Acacia, see 4.2.4

Comparison of Alternatives

Same as for Acacia, see 4.2.4

4.3.5 Local traffic impacts

Nature of Impact

Local traffic impacts are associated with construction vehicles and vehicles transporting components from the Port Rex Power Station site to Ankerlig Power Station site. Increase in traffic during the construction phase can potentially result in the disruption of daily movement patterns for local commuters.

Impact Summary

Same as for Acacia, see 0

Comparison of Alternatives

Same as for Acacia, see 0

4.4 Potential Social Impacts associated with the relocation of the gas units to the Ankerlig Power Station

The Ankerlig Power Station site is located within the Koeberg and Blaauwberg sub-councils of the City of Cape Town Metropolitan Municipality in the Western Cape Province. The population potentially affected by the development include residents of Atlantis, particularly the suburbs of Avondale, Wesfleur, Protea Park, Beacon Hill and Robinvale, and the nearby informal settlement of Witsand, situated in close proximity to the Industrial area as well as, to a lesser extent, the populations of the nearby neighbourhoods of Melkbosstrand and Duynefontein.

Potential impacts on the social environment as a result of the proposed relocation of the OCGT units from Acacia could include:

1. Employment Opportunities
2. Intrusive impacts
3. Impacts on Sense of Place
4. Local traffic impacts
5. Impact on Health and Safety
6. Potential Social Investment.

4.4.1 Employment Opportunities

Nature of Impact

Construction

There may be limited employment opportunities associated with the relocation and commissioning of the Acacia and Port Rex units at the Ankerlig Power Station site. However, the majority of these employment opportunities are expected to require skilled personnel. Therefore, any benefits to local communities would be limited.

Operation

It is envisaged that, initially, the current production staff complement at the Acacia Power Station (approximately 15 people) would be transferred to Ankerlig to specifically operate and maintain the relocated Acacia and Port Rex units . This situation could however be reviewed in future, depending on staff requirements.

Impact Summary

Nature: Economic/Social		
	Without Mitigation	With Mitigation
Extent	Local (2)	Local (2)
Duration	Very short (1)	Very short (1)
Magnitude	Small (0)	Low (2)
Probability	Very improbable (1)	Improbable (2)
Significance	$(2+1+0)1=3=$ Low	$(2+1+2)2 = 10=$ Low
Status	Positive	Positive
Reversibility		
Can impacts be mitigated?	Minimally	
Mitigation: Use local casual labour where possible during relocation and reassembly as well as ongoing maintenance.		
Cumulative Impacts: Any additional temporary casual/ unskilled labour used will be cumulative to current construction activities around the OCGT expansion, and potential future construction labour used for the proposed OCGT to CCGT conversion process.		
Residual Impacts: The very limited number of employment opportunities that can be created by the project can result in negativity from the receiving community of Atlantis as no benefits will be seen to accrue to them.		

Comparison of Alternatives

Alternative	Impact
Decommissioning and relocation as proposed	Limited (if any) potential for temporary casual labour during construction. Limited (if any) potential for ongoing employment during operation and maintenance.
No-go alternative	No impact

4.4.2 Intrusive Impacts

Nature of Impact

Intrusive impacts mainly relate to visual and noise and air quality impacts. These are discussed in detail in separate specialist studies.

The visual impact study has noted visual impacts on the area surrounding Atlantis to be of minimal significance, as the relocated units will be obscured by existing developments at the site.

Noise and air quality assessments could not be obtained in time for review to be considered in this assessment.

Impact Summary

Nature: Intrusive impacts		
	Without Mitigation	With Mitigation
Extent	Local (2)	Local (2)
Duration	Long (4)	Long (4)
Magnitude	Low (4)	Small (0)
Probability	Probable (3)	Very improbable (1)
Significance	$(2+4+4)3 = 30 = \text{Low/Medium}$	$(2+2+0)1 = 4 = \text{Low}$
Status	Negative	Negative
Reversibility	No	
Irreplaceable loss of resources	No	
Can impacts be mitigated?	Yes	
Mitigation: Mitigate for visual and air quality impacts as proposed in relevant specialist studies.		
Cumulative Impacts: Impacts can be considered cumulative to existing and future developments at the Ankerlig site.		
Residual Impacts: N/A		

Comparison of Alternatives

Alternative	Impact
Decommissioning and relocation as proposed	Impact as described
No-go alternative	No impact

4.4.3 Impacts on Sense of Place

Nature of Impact

As the gas units from Acacia and Port Rex are proposed to be relocated to the existing Ankerlig Power Station site in the Atlantis Industrial Area, impact on sense-of place can be expected to be limited. To the extent that such impacts may occur, their significance would relate largely to other impacts, notably visual and noise impacts, as well as impacts on air quality and traffic volumes, both during construction and operation of the recommissioned units, which need to be taken into consideration in assessing this impact.

It is also important to note that the Atlantis community already perceives itself as vulnerable to a variety of developments which many feel are being 'dumped' on them. The impact on sense of place can thus be regarded as a cumulative psychological impact, whereby Atlantis residents increasingly feel victim to broader developments in which they have no say or control potentially impacting on them.

Conversely, if Eskom's presence can be seen to have visible benefits to local communities in terms of job creation, business opportunities, skills development and social investment, perceptions of the area as an 'energy hub' for South Africa may acquire a positive connotation which could change the status of this impact.

Atlantis residents' concerns pertaining to cumulative impacts of ongoing developments at Ankerlig are clearly articulated by a resident in commenting on the Draft Scoping report for the proposed decommissioning and relocation during the public participation process, noted in Box 1 below. The reference made to the potential reduction of negative impacts for Edgemean residents implied by the relocation of three units to Ankerlig is relevant to consider for Ankerlig residents who will now absorb these impacts, in addition to those of the nine OCGT units (four existing and five under construction) at the Ankerlig site.

Box 1

A Strategic Environmental Assessment should be carried out so that this project is not looked at in isolation.

Existing monitoring (noise and pollution) results should be included in the Scope document so that all I&AP can see where the current pollution levels stand at Die Ankerlig, as well as at Acacia Park and what the combined increase in all pollution categories will be.

When Eskom/Die Ankerlig increased their operation by 5 turbines, we objected on the basis that we could hear the noise from our premises and our concerns were, how it would affect the greater Atlantis community. After noise monitoring on our premises, consultation and assurance from both D Herbst and N Gewers that all pollution monitoring results would be sent to us either via email or mail, we withdrew our objection.

Since the withdrawal of our objection, no monitoring results communication has been received from Eskom. The pollution generated is a concern.

I also want to bring an article to your attention: Table Talk, Wednesday 18 June 2008 "Gas turbines in Edgemean to be relocated to Atlantis"

".....It would give relief to Edgemean residents living in the vicinity of the Acacia power station who have complained for some time about the air and noise pollution generated from the gas turbines".

It is imperative that all pollution monitoring results are available for the community.
Mienie Wood's Comments on Acacia (Atlantis Resident)

Impact Summary

Nature: Impacts on sense of place		
	Without Mitigation	With Mitigation
Extent	Local (2)	Local (2)
Duration	Medium (3)	Short (1)
Magnitude	Moderate (6)	Minor (2)
Probability	Probable (3)	Very improbable (2)
Significance	$(2+3+6) \cdot 3 = 33 = \text{Medium}$	$(2+1+2) \cdot 2 = 10 = \text{Low}$
Status	Negative	Negative/ Positive
Reversibility	"Sense of place" essentially alters over time. Ankerlig is situated in an industrial area in a region increasingly characterised by industrial and power developments (Atlantis Industria, Gas turbines and areas located near the site like Koeberg, Nuclear, PBMR etc.) This eventually becomes part of the area's 'sense of place'	
Can impacts be mitigated?	Yes	
Mitigation:	<ul style="list-style-type: none"> Minimise noise, visual, air quality, traffic impacts through appropriate mitigation as proposed in relevant specialist studies for this assessment, as well as for the assessment for the proposed conversion of OCGT units at Ankerlig to CCGT units. Maintain good relationships with local communities through regular, inclusive stakeholder engagement and consultation processes. Maximise local benefit through specific focus on social investment, as other opportunities to benefit, through for example employment creation, will be minimal. 	
Cumulative Impacts:	<ul style="list-style-type: none"> Cumulative psychological impact, whereby Atlantis residents increasingly feel victim to broader developments in which they have no say or control potentially impacting on them. 	
Residual Impacts:	<ul style="list-style-type: none"> Perceiving one's home to be a 'dumping ground' for developments can have detrimental psychological impacts on the local population, particularly if they do not feel appropriately known in these developments through effective public engagement processes 	

Comparison of Alternatives

Alternative	Impact
Decommissioning and relocation as proposed	Impact as described
No-go alternative	No impact

4.4.4 Local traffic impacts

Nature of Impact

Local traffic impacts are associated with construction vehicles and vehicles transporting components from the Acacia Power Station site to Ankerlig Power Station site. Increase in traffic during the construction phase can potentially result in the disruption of daily movement patterns for local commuters.

The issue of potential impacts of transporting additional fuel required for the relocated units to the site, which was noted as a significant concern for the proposed conversion of nine OCGT units to CCGT, was raised again during the public participation process for this EIA. Impacts associated with additional fuel transportation to the Ankerlig site for the Acacia and Port Rex units, are not however considered significant as there will be limited storage on site for these units – 1 million litres (in addition to the 59.4 million litres of fuel to be stored for the nine OCGT units converted to CCGT units at the Ankerlig site).

Eskom is in the process of investigating alternative modes of fuel transportation and is currently undertaking an EIA to this effect. (Comments and Response Report, July 2008).

Impact Summary

Nature: Local traffic impacts		
	Without Mitigation	With Mitigation
Extent	Widespread (3)	Local (2)
Duration	Long (4)	Medium (3)
Magnitude	Moderate (6)	Minor (2)
Probability	Highly probable (4)	Probable (3)
Significance	$(3+4+6)4 = 52 = \text{Medium}$	$(2+3+2) 3 = 21 = \text{Low}$
Status	Negative	Negative
Reversibility	Impacts on road conditions and safety could extend and worsen	Impacts on roads and traffic minimised
Irreplaceable loss of resources		
Can impacts be mitigated?	Yes	
Mitigation:		
<ul style="list-style-type: none"> • Implement mitigation measures proposed in the traffic assessment for the OCGT-CCGT conversion at Ankerlig • Identify alternate means of transporting fuel to site. 		
Cumulative Impacts:		
Though additional impacts of fuel transportation are expected to be minimal, these should be considered cumulative to impacts of additional fuel transportation for the current and potentially converted gas turbine units at Ankerlig.		
Residual Impacts:		
N/A		

Comparison of Alternatives

Alternative	Impact
Decommissioning and relocation as proposed	Impact as described
No-go alternative	No additional impact

4.4.5 Impact on Health and Safety

Nature of Impact

Concerns have been expressed throughout previous public participation processes for the Ankerlig Power Station regarding potential health and safety implications that may result from potential impacts on air quality during operation, and transportation and storage of fuel.

The units from Acacia and Port Rex would be serviced before they are relocated to the Ankerlig site. Fuel tanks will be designed to match the aesthetics of the Ankerlig site and comply with the highest standards for fuel storage.

Air Quality

The scoping assessment noted that: "*The exhaust emissions during normal operation, start-up and upset conditions, can have a negative impact on the air quality of residential townships in close proximity to the power station. Potential impacts are expected to be cumulative at local level. The extent of the potential impacts associated with all emissions from the Ankerlig Power Station site will need to be quantified and assessed in the EIA.*" (P.46, 1st para). Impacts on air quality are assessed in a separate specialist study, which could not be obtained in time for inclusion in this social assessment.

Risk assessment

While a separate risk assessment has not been undertaken for the relocation of Acacia and Port Rex Units, findings from the EIA for the Ankerlig OCGT-CCGT conversion are noted here as these will be relevant to consider with regard to cumulative risks that may be anticipated.

The study was limited to the hazards posed by the fuel oil storage and did not cover mechanical failures such as turbines.

The aim of the investigation was to determine the extent of impact from accidental fires with regards to the proposed CCGT conversion and storage tanks to the Ankerlig Power Station.

Risk calculations were not precise. The accuracy of the predictions was determined by the quality of base data and expert judgements. The risk assessment was done on the assumption that the site will be maintained to an acceptable level and that all-statutory regulations will be applied. It was also assumed that competent people will perform the detailed engineering designs and that the plant requirements will be correctly specified for the intended duty.

A number of incident scenarios were considered and the following conclusions were reached:

Pool fires

Large bund fires and pool fires from spillages from road and rail offloading operations were calculated for the Ankerlig Power Station and the proposed CCGT conversion. The study concluded that Ankerlig Power Station and the proposed CCGT conversion could have impacts a short distance beyond the site boundary.

Jet fires

Jet fires from a release of pressurized propane would form a maximum flame length of 20.4m. This flame would not extend beyond the site's boundary but could injure people and damage equipment within the flame.

Explosions

As a result in additional structures for the CCGT conversion, a large lease of propane could result in a partial confined explosion that could extend beyond the site's boundary. However the risks for offsite are considered acceptable.

Major Hazardous installation

The investigation concluded that the CCGT conversion would have risk excessive 1×10^{-6} fatalities per person per year at the site boundary and would classify the facility as a Major Hazardous Installation. As off-site consequences are possible, a quantitative risk assessment would be required in terms of the Major Hazardous Installation (MHI) Regulations (July 2001) prior to project construction. The risk assessment must be done by an Approved Inspection Authority, as recognized by the Department of Labour, with final designs and layouts.

As a result of the risk assessment study conducted for the proposed CCGT conversion project, no fatal flaws were apparent that could prevent the project proceeding. It is thus recommended that the project proceed into the detailed phase of the design with some provisions, as detailed in the risk assessment.

Impact Summary

Nature: Impacts on health and safety		
	Without Mitigation	With Mitigation
Extent	Local (2)	Local (2)
Duration	Long (4)	Long (4)
Magnitude	Moderate (6)	Small (0)
Probability	Probable (3)	Improbable (2)
Significance	$(2+4+6)3 = 36 = \text{Medium}$	$(2+4+0)2 = 12 = \text{Low}$
Status	Negative	Negative
Reversibility	See relevant specialist studies	See relevant specialist studies
Irreplaceable loss of resources	N/A	
Can impacts be mitigated?	Yes	
Mitigation:		
<ul style="list-style-type: none"> Implement mitigation proposed in Air Quality Assessment for this assessment, and the Risk and Traffic assessments for the proposed CCGT conversion The contingency safety plan outlined in the EMP to be adhered to. 		
Cumulative Impacts:		
<ul style="list-style-type: none"> Potential cumulative impacts of additional fuel storage and emission above what was anticipated as assessed in specialist studies. 		
Residual Impacts:		
If mitigation measures and safety plans are not successfully implemented, Eskom will be seen as a "bad neighbour", and negative attitude towards future projects could jeopardise these		

Comparison of Alternatives

Alternative	Impact
Decommissioning and relocation as proposed	Impact as described
No-go alternative	No additional impact

4.4.6 Land Use

Nature of Impact

As units will be moved to the Ankerlig site already occupied by 9 OGCT/CCGT units, located in the Atlantis Industrial area, the impact on landuse will be insignificant, and is thus not assessed in any more detail.

4.4.7 Social Investment

Nature of Impact

As the number of employment opportunities that will be created during both the construction and operational phases of the project will be limited, it will be

necessary to augment the benefits for surrounding communities by implementing appropriate social investment activities.

Social development is implemented through the Eskom Development Foundation (ESDEF). Eskom Development Foundation is a Section 21 company and a wholly owned subsidiary of Eskom Holdings Ltd ("Eskom"). The Development Foundation is responsible for: initiating and evaluating CSI related projects; coordinating and integrating Eskom's corporate social investment (CSI) activities, and developing grants and donations in South Africa. Table 2 below provides a summary of current and future social and economic Projects funded by the Eskom Development Foundation in Atlantis over the period 2006-2008. Additional projects, particularly in the agriculture sector, are currently being investigated for potential future funding.

Table 2: Current and Future Projects in Atlantis

DATE APPR.	PROJECT NAME	R GRANTED		Benefic. TOT
07/04/2006	City Sq Trading 33	R 281,688.24	Econ	26
14/01/2008	Orion Organisation	R123 678.29	Soc	219
	Ebenezer Village- Awaiting PEC	On hold	Soc	82
	Atlantis Women's Movement for the Abused	Pipeline	Soc	16

Parties affected

- Atlantis community
- Beneficiaries of Social Investment initiatives.

Impact Summary:

Low to High: The significance of this positive impact can be maximised through appropriate targeting of Social Investment.

Nature: Economic, Social		
	Without Mitigation	With Mitigation
Extent	Local (2)	Local (3)
Duration	Short (2)	Medium (3)
Magnitude	Minor (2)	High (8)
Probability	Probable (3)	Highly probable (4)
Significance	$(2+2+2)3 = 18 = \text{Low}$	$(3+3+8)4 = 56 = \text{Medium}$
Status	Positive	Positive
Reversibility	Sustainability of social development initiatives will depend on the manner in which these are identified and implemented.	
Can impacts be mitigated?	Yes - this impact can be optimised.	
Mitigation:		
<ul style="list-style-type: none"> • Ensure appropriate communication channels to disseminate information about the types of assistance available through ESDEF in the community, through initiatives such as Red Door, the LED forum, and Local Council. 		

<ul style="list-style-type: none"> Eskom to take a more pro-active stance in assisting community members to take advantage of its assistance through effective consultation with stakeholders on opportunities for assistance and how to access it.
<p>Cumulative Impacts: Any increased emphasis on social investment due to ongoing developments in the area would have a positive impact on surrounding communities benefiting.</p>
<p>Residual Impacts: Improved relationship between Eskom and local communities.</p>

Comparison of Alternatives

Alternative	Impact
No go option	Eskom's current involvement in the area would mean continued involvement in terms of Social Investment.
Conversion as proposed	Eskom could place special emphasis on Social Investment to show its commitment to the host community of Atlantis where it has been involved for a number of years already, and will be into the future. The additional development could motivate additional social investment spending, and an opportunity to more appropriately liaise with local community representative structures in determining social needs and priorities which may be addressed.

4.5 Potential Social Impacts associated with the 132kV power line between the Ankerlig Power Station and the Koeberg-Dassenberg line and HV yard

4.5.1 Employment Opportunities

Nature of Impact

Limited temporary employment opportunities will be created during construction of the transmission line. No information regarding the potential number of jobs to be created could be obtained from Eskom. This impact can be expected similar for both Options 1 and 2, which are under consideration.

Impact Summary

Nature: Economic/Social		
	Without Mitigation	With Mitigation
Extent	Local (2)	Local (2)
Duration	Very short (1)	Medium (3)
Magnitude	Small (0)	Minor (2)
Probability	Improbable (2)	Probable (3)
Significance	$(2+1+0) 2 = 6 = \text{Low}$	$(2+3+2) 3 = 21 = \text{Low}$
Status	Positive	Positive
Reversibility	Positive impact for duration of employment.	Ongoing positive impact.
Irreplaceable loss of resources	No	
Can impacts be mitigated?	Yes - can be optimised.	
Mitigation:		
<ul style="list-style-type: none"> Local labour and suppliers should be used as far as possible for construction, as well as ongoing maintenance, service provision and any additional opportunities arising during the construction and operational phases 		
Cumulative Impacts:		
<ul style="list-style-type: none"> Any employment opportunities created would be a positive cumulative impact to existing developments. Longer involvement in the area provides additional opportunity to identify and train local people for possible employment, as well as maintenance and provision of general services required. 		
Residual Impacts:		
<ul style="list-style-type: none"> The families of those who secure work will benefit and this will impact on their health and well-being. Impacts on these households will be significant as these are permanent job opportunities created. 		

Comparison of Alternatives

Alternative	Impact
Option 1	Limited (if any) employment creation
Option 2	Limited (if any) employment creation
No-go alternative	No additional impact

4.5.2 Intrusive impacts

Nature of Impact

These relate mainly to potential visual impacts, which, according to the visual impact assessment, are considered negligible for both options.

Impact Summary

Nature: Economic/Social		
	Without Mitigation	With Mitigation
Extent	Local (2)	Local (2)
Duration	Short (2)	Short (2)
Magnitude	Minor (2)	Small (0)
Probability	Improbable (2)	Very improbable (1)
Significance	$(2+2+2)2 = 12 = \text{Low}$	$(2+2+0)1 = 4 = \text{Low}$
Status	Negative	Negative
Reversibility	No	
Irreplaceable loss of resources	No	
Can impacts be mitigated?	Yes	
Mitigation: Mitigation for impacts in broader region to consider recommendations made in visual and air quality specialist studies.		
Cumulative Impacts: N/A		
Residual Impacts: N/A		

Comparison of Alternatives

Alternative	Impact
Option 1	Impact as described
Option 2	Impact as described
No-go alternative	No additional impact

4.5.3 Land Use

Nature of Impact

The 132KV Power line will cover a short distance (Option 1 = 2.6km, Option 2 = 3.8km) between the Ankerlig Power Station and the Koeberg-Dassenberg line and HV Yard.

Option 1 follows the most direct route through the Atlantis Industrial Area, while Option 2 follows numerous existing and proposed 400kv and 133kv lines along the edge of the Industrial area. Neither of these options are expected to have any significant impacts on current land use, and this impact is thus not further assessed here.

Comparison of Alternatives

Alternative	Impact
Option 1	No significant impact
Option 2	No significant impact
No-go alternative	No additional impact

5 RECOMMENDATIONS REGARDING PREFERRED ALTERNATIVES

5.1 Decommissioning of Gas units at the Acacia Power Station and Port Rex Power Station.

Although a minimum of three gas turbines is required to facilitate the phasing of the Koeberg off-site supply, it is recommended that the fourth unit required to be installed at Ankerlig to facilitate the relocation process should remain at Ankerlig for economic reasons and to provide additional operational flexibility. The recommendation is therefore that four gas turbines will ultimately be installed at the Ankerlig Power Station site, namely three from Acacia and one from Port Rex. Social impacts will be predominantly positive, resulting from a reduction in noise, visual and air quality impacts resulting from current units at Acacia and Port Rex stations.

5.2 Relocation of the Gas units to the Ankerlig Power Station

As the relocation of the units to the Ankerlig Power Station site is considered to be technically preferred option and is within the Ankerlig Power Station site, no site alternatives have been investigated as part of the EIA process.

The relocation of the Acacia gas turbines to the Ankerlig Power Station site will relieve the network congestion in and around the Acacia Power Station whilst facilitating the strengthening of the distribution network in the vicinity of the Ankerlig Power Station located in Atlantis, Cape Town, which is needed for future growth in the area.

Potential social impacts on the population of Atlantis and surrounding areas can be considered cumulative to those experienced as result of the existing OCGT units, additional units currently under construction, and the planned conversion of these units to CCGT units. These include the possibility of limited positive impacts of possible casual labour used during construction, and the possibility of increased social investment, and potential negative impacts on 'sense of place' resulting from the perception of the area being used as an electricity generation hub, without sufficient benefits accruing to the host community of Atlantis.

While the relocation of units from Acacia and Port Rex is considered the preferred social alternative from a broader social perspective, it is important that cumulative impacts on the receiving community of Atlantis be considered, and appropriate mitigation applied. This can most effectively be done by maximizing social benefit through an increased focus on social investment in the area.

5.3 132kV power line between the Ankerlig Power Station and the Koeberg-Dassenberg line and HV yard

This component of the development is not expected to have any significant social impacts. Both Option 1 and Option 2 can be considered as feasible alternatives from a social perspective.

6 SUMMARY OF IMPACT RATINGS

The sections and tables below provide a summary of impact ratings for potential social impacts.

6.1 Decommissioning of Gas Units at the Acacia Power Station Site

Impacts associated with the decommissioning of the units are expected to be localised in the short-term. The power station currently has an existing air quality, noise and visual impact on the local area. The decommissioning of the units will remove this existing impact from the area and is therefore expected to have a positive impact on the local environment.

6.2 Decommissioning of Gas Units at the Port Rex Power Station Site

Impacts associated with the decommissioning of the units are expected to be localized in the short-term. The power station currently has an existing air quality, noise and visual impact on the local area. The decommissioning of one of the units at the Port Rex Power Station site will reduce this existing impact and is therefore expected to have a limited positive impact on the local environment.

6.3 Relocation of Gas Units to the Ankerlig Power Station Site

The existing gas units will be decommissioned at the Acacia and Port Rex power station sites, and will be relocated to the existing Ankerlig Power Station site near Atlantis. No additional land take will be required outside of the existing power station boundaries for the establishment of these units. Potential impacts associated with the proposed relocation of the units are expected to occur during both the construction and operational phases. New impact sources associated with the relocation of these units are expected to be cumulative at a local level.

6.4 132kV power line

This component of the development is not expected to have any significant social impacts.

Table 3: Potential Social Impacts associated with the decommissioning of the gas units at the Acacia site

Impact:	Mitigation	Extent	Duration	Magnitude	Probability	Significance	Status
Employment	Without Mitigation	Local	Very Short	Small	Very improbable	Low	Positive
	With Mitigation	Local	Very short	Minor	Improbable	Low	Positive
Intrusive Impacts	Without Mitigation	Local	Very Short	Minor	Very improbable	Low	Positive
	With Mitigation	N/A	N/A	N/A	N/A	N/A	N/A
Impacts on health and safety	Without Mitigation	Local	Long	Minor	Probable	Low	Positive
	With Mitigation	N/A	N/A	N/A	N/A	N/A	N/A
Impacts on land use	Without Mitigation	Site only	Very short	Small	Very improbable	Negligible	Neutral
	With Mitigation	N/A	N/A	N/A	N/A	N/A	N/A
Local traffic Impacts	Without Mitigation	Wide-spread	Short-term	Low	Probable	Low	Negative
	With Mitigation	N/A	N/A	N/A	N/A	N/A	N/A

Table 4: Potential Social Impacts associated with the decommissioning of the gas units at the Port Rex site

Impact:	Mitigation	Extent	Duration	Magnitude	Probability	Significance	Status
Employment	Without Mitigation	Local	Very Short	Small	Very improbable	Low	Positive
	With Mitigation	Local	Very short	Minor	Improbable	Low	Positive
Intrusive Impacts	Without Mitigation	Local	Very Short	Minor	Very improbable	Low	Positive
	With Mitigation	N/A	N/A	N/A	N/A	N/A	N/A
Impacts on health and safety	Without Mitigation	Local	Long	Minor	Probable	Low	Positive
	With Mitigation	N/A	N/A	N/A	N/A	N/A	N/A
Impacts on land use	Without Mitigation	Site only	Very short	Small	Very improbable	Negligible	Neutral
	With Mitigation	N/A	N/A	N/A	N/A	N/A	N/A
Local traffic Impacts	Without Mitigation	Wide-spread	Short-term	Low	Probable	Medium	Negative
	With Mitigation	N/A	N/A	N/A	N/A	N/A	N/A

Table 5: Potential Social Impacts associated with the relocation of the gas units to the Ankerlig Power Station

Impact:	Mitigation	Extent	Duration	Magnitude	Probability	Significance	Status
Employment	Without Mitigation	Local	Very short	Small	Very improbable	Low	Positive
	With Mitigation	Local	Very short	Minor	Improbable	Low	Positive
Intrusive Impacts	Without Mitigation	Local	Long-term	Low	Probable	Low/ Medium	Negative
	With Mitigation	Local	Long-term	Small	Improbable	Low	Negative
Impact on sense of place	Without Mitigation	Local	Medium -term	Moderate	Probable	Medium	Negative
	With Mitigation	Local	Short-term	Minor	Very improbable	Low	Negative
Local traffic Impacts	Without Mitigation	Widespread	Long-term	Moderate	Highly probable	Medium	Negative
	With Mitigation	Local	Medium	Minor	Probable	Low	Negative
Impacts on health and safety	Without Mitigation	Local	Long-term	Moderate	Probable	Medium	Negative
	With Mitigation	Local	Long-term	Small	Improbable	Low	Negative
Impacts on land use	Without Mitigation	Site only	Very short	Small	Very improbable	Negligible	Neutral
	With Mitigation	N/A	N/A	N/A	N/A	N/A	N/A
Social responsibility	Without Mitigation	Local	Short	Minor	Probable	Low	Positive
	With Mitigation	Local	Medium	High	Highly probable	Medium	Positive

Table 6: Potential Social Impacts associated with the 132kV Transmission Line

Impact:	Mitigation	Extent	Duration	Magnitude	Probability	Significance	Status
Employment	Without Mitigation	Local	Very short	Small	Improbable	Low	Positive
	With Mitigation	Local	Medium	Minor	Probable	Low	Positive
Intrusive Impacts	Without Mitigation	Local	Short-term	Minor	Improbable	Low	Negative
	With Mitigation	Local	Short-term	Small	Very improbable	Low	Negative
Impacts on land use	Without Mitigation	Site only	Very short	Small	Very improbable	Negligible	Neutral
	With Mitigation	N/A	N/A	N/A	N/A	N/A	N/A

Impact:	Mitigation	Significance	Status
THE DECOMMISSIONING OF THE GAS UNITS AT THE ACACIA SITE			
Employment	Without Mitigation	Low	Positive
	With Mitigation	Low	Positive
Intrusive Impacts	Without Mitigation	Low	Positive
	With Mitigation	N/A	N/A
Impacts on health and safety	Without Mitigation	Low	Positive
	With Mitigation	N/A	N/A
Impacts on land use	Without Mitigation	Negligible	Neutral
	With Mitigation	N/A	N/A
Local traffic Impacts	Without Mitigation	Medium	Negative
	With Mitigation	N/A	N/A
THE DECOMMISSIONING OF THE GAS UNITS AT THE PORT REX SITE			
Employment	Without Mitigation	Low	Positive
	With Mitigation	Low	Positive
Intrusive Impacts	Without Mitigation	Low	Positive
	With Mitigation	N/A	N/A
Impacts on health and safety	Without Mitigation	Low	Positive
	With Mitigation	N/A	N/A
Impacts on land use	Without Mitigation	Negligible	Neutral
	With Mitigation	N/A	N/A
Local traffic Impacts	Without Mitigation	Medium	Negative
	With Mitigation	N/A	N/A

Impact:	Mitigation	Significance	Status
THE RELOCATION OF THE GAS UNITS TO THE ANKERLIG POWER STATION SITE			
Employment	Without Mitigation	Low	Positive
	With Mitigation	Low	Positive
Intrusive Impacts	Without Mitigation	Low/ Medium	Negative
	With Mitigation	Low	Negative
Impact on sense of place	Without Mitigation	Medium	Negative
	With Mitigation	Low	Negative
Local traffic Impacts	Without Mitigation	Medium	Negative
	With Mitigation	Low	Negative

Impact:	Mitigation	Significance	Status
Impacts on health and safety	Without Mitigation	Medium	Negative
	With Mitigation	Low	Negative
Impacts on land use	Without Mitigation	Negligible	Neutral
	With Mitigation	N/A	N/A
Social responsibility	Without Mitigation	Low	Positive
	With Mitigation	Medium	Positive

Impact:	Mitigation	Significance	Status
IMPACTS ASSOCIATED WITH THE 132KV POWER LINE BETWEEN THE ANKERLIG POWER STATION AND THE KOEBERG-DASSENBERG LINE AND HV YARD			
Employment	Without Mitigation	Low	Positive
	With Mitigation	Low	Positive
Intrusive Impacts	Without Mitigation	Low	Negative
	With Mitigation	Low	Negative
Impacts on land use	Without Mitigation	Negligible	Neutral
	With Mitigation	N/A	N/A

7 SUMMARY OF MITIGATION MEASURES FOR INCLUSION IN EMP

7.1 Potential Social Impacts associated with the decommissioning of the gas units at the Acacia site

7.1.1 Employment Opportunities

OBJECTIVE: Promote economic benefits for host community surrounding Acacia Power Station by maximising the use of local labour and optimising labour conditions during the decommissioning	
Project component/s	Decommissioning of CCGT gas turbine units.
Potential Impact	Creation of temporary employment opportunities, with positive economic spin-offs for the community surrounding Acacia Power Station for the duration of the construction period.
Activity	De-construction of units
Mitigation: Target/Objective	Use local for un/semi-skilled labour that may be required for the actual deconstruction activities

Mitigation:	Responsibility	Timeframe
Maximise opportunities for use of local casual labour	Eskom	De-construction

Performance Indicator	Number of local employment opportunities created
Monitoring	Monitor the use of local labour where relevant.

7.1.2 Intrusive Impacts

N/A - no mitigation required

7.1.3 Impacts on Health (Air quality)

N/A - no mitigation required

7.1.4 Land Use

N/A - no mitigation required

7.1.5 Local traffic impacts

N/A - no mitigation required

7.2 Potential Social Impacts associated with the decommissioning of the gas units at the Port Rex site

7.2.1 Employment Opportunities

See 7.1.1 above.

7.2.2 Intrusive Impacts

N/A - no mitigation required

7.2.3 Impacts on Health (Air quality)

N/A - no mitigation required

7.2.4 Land Use

N/A - no mitigation required

7.2.5 Local traffic impacts

N/A - no mitigation required

7.3 Potential Social Impacts associated with the relocation of the gas units to the Ankerlig Power Station

7.3.1 Employment Opportunities

OBJECTIVE: Promote economic benefits for host community of Atlantis by maximising the use of local labour and optimising labour conditions during construction.	
Project component/s	Construction of CCGT gas turbine units.
Potential Impact	Creation of temporary employment opportunities, with positive economic spin-offs for the Atlantis community for the duration of the construction period.
Activity	Construction
Mitigation: Target/ Objective	Maximise local employment through pro-active targeting of local recruitment. Target - maximise the use of local labour where feasible.

Mitigation:	Responsibility	Timeframe
Use local casual labour where possible during relocation and reassembly as well as ongoing maintenance..	Eskom	Recommissioning Operation

Performance Indicator	Percentage use of local labour during construction. Number of local employment opportunities created during construction.
Monitoring	Eskom to monitor the use of local labour by main contractors during the construction period. Disseminate this information to local communities to show Eskom's commitment to social upliftment in the host community.

7.3.2 Intrusive Impacts

OBJECTIVE: Minimise intrusive impacts for neighbouring residents.	
Project component/s	Construction
Potential Impact	
Activity/ risk source	Residents, Employees
Mitigation: Target/ Objective	To minimise visual and noise impacts by selecting sub-alternative. Also see visual & air quality assessments

Mitigation:	Responsibility	Timeframe
Mitigation for impacts to consider recommendations made in visual, noise and air quality specialist studies.	Eskom	Pre construction

Performance Indicator	See Visual, Noise and Air Quality Assessments
Monitoring	See Visual, Noise and Air Quality Assessments

7.3.3 Impacts on Sense of Place

OBJECTIVE: Minimise potential impacts on neighbouring communities' (Atlantis, Melkmosstrand & Duynefontein) 'sense of place'	
Project component/s	Re-construction of CCGT Gas Turbines
Potential Impact	Impacts on 'sense' of place' related to visual, noise and traffic impacts, and sense of Atlantis being a 'dump' for power developments without sufficient recognition of host community.
Activity	Ongoing developments at Ankerlig
Mitigation: Target/ Objective	Alleviate impacts on 'sense of place' through mitigation of visual, noise and traffic impacts, and ensuring community buy-in.

Mitigation:	Responsibility	Timeframe
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Minimise noise, visual, air quality, traffic impacts through appropriate mitigation as proposed in relevant specialist studies for this assessment, as well as for the assessment for the proposed conversion of OCGT units at Ankerlig to CCGT units.	See relevant specialist studies.	See relevant specialist studies.
Maintain good relationships with local communities through regular, inclusive stakeholder engagement and consultation processes.	Eskom	Pre-construction to operation
Maximise local benefit through specific focus on social investment, as other opportunities to benefit, through for example employment creation, will be minimal.	Eskom (ESDEF)	Pre-construction to operation

Performance Indicator	Perceptions of Ankerlig amongst the host community of Atlantis. Extent to which community's are recognised (number of consultations/ for a for public participation)
Monitoring	Monitoring local perceptions through stakeholder liaison forum. (Also see visual, noise, traffic and air quality assessments, Ankerlig 2008)

7.3.4 Local traffic impacts

OBJECTIVE: To minimise disruption caused to road users by the daily transportation of fuel to the Ankerlig site.	
Project component/s	Operation
Potential Impact	Trucks transporting fuel to the site impacts on traffic flow past Melkbosstrand and Duynefontein into Atlantis, impacting on residents of these communities, as well as other road users.
Activity/ risk source	Transportation of components; Transportation of fuel to site.
Mitigation: Target/ Objective	Minimise impacts on traffic.

Mitigation:	Responsibility	Timeframe
Alternate fuel transportation - notably rail or fuel pipeline- should be considered.	Eskom	Pre construction to Operation
Mitigation as proposed in transport study for Ankerlig Conversion.	Eskom	See transport study

Performance Indicator	Identification of alternate fuel transportation means to be actively pursued Also see transport study for Ankerlig Conversion
Monitoring	Monitor progress with identification and securing of alternate fuel transportation. See transport study for Ankerlig Conversion

7.3.5 Impact on Health and Safety

OBJECTIVE: Minimise potential impacts on health and safety resulting from impacts on air quality and risks associated with fuel storage on-site.	
Project component/s	De-construction - Emissions; Fuel Storage
Potential Impact	Impacts on health Impacts on safety
Activity	Emissions; Fuel Storage
Mitigation: Target/ Objective	Minimise impacts on health and safety.

Mitigation:	Responsibility	Timeframe
Implement mitigation proposed in Air Quality Assessment for this assessment, and the Risk and Traffic assessments for the proposed CCGT conversion	Eskom	See relevant assessments
The contingency safety plan outlined in the EMP to be adhered to.	Eskom	Pre construction

Performance Indicator	See air quality, traffic & risk assessments
Monitoring	See air quality, traffic & risk assessments

7.3.6 Social Investment

OBJECTIVE: To optimally fulfil Eskom’s social obligation to the host community of Atlantis.	
Project component/s	Construction, Operation
Potential Impact	Investment social development and upliftment in the Atlantis community by Eskom and Contractors.
Activity/ risk source	Investment in host community during construction and operational phases.
Mitigation: Target/ Objective	Eskom and contractors contribute to the host community of Atlantis through appropriately targeted social development initiatives.

Mitigation:	Responsibility	Timeframe
Ensure appropriate communication channels to disseminate information about the types of assistance available through ESDEF in the community, through initiatives such as Red Door, the LED forum, and Local Council.	Eskom (through ESDEF)	Construction Operation
Eskom to take a more pro-active stance in assisting community members to take advantage of its assistance through effective consultation with stakeholders on opportunities for assistance and how to access it.	Eskom (through ESDEF)	Construction Operation

Performance Indicator	Number of social development initiatives and activities funded through Eskom and Contractors; Nature of benefits; Number of beneficiaries; Sustainability of benefits.
Monitoring	Monitoring of Eskom and Contractors’ Social Responsibility initiatives in Atlantis to determine impacts i.t.o. beneficiaries reached and nature and sustainability of benefits.

8 CONCLUSION

Impacts associated with the decommissioning of the units at both Acacia and Port Rex power stations are expected to be localised in the short-term. The power station currently has an existing air quality, noise and visual impact on the local area. The decommissioning of the units will remove this existing impact from the area and is therefore expected to have a positive impact on the local environment.

Potential social impacts on the population of Atlantis and surrounding areas can be considered cumulative to those experienced as result of the existing OCGT units, additional units currently under construction, and the planned conversion of these units to CCGT units. These include the possibility of limited positive impacts of possible casual labour used during construction, and the possibility of increased social investment, and potential negative impacts on ‘sense of place’ resulting from the perception of the area being used as an electricity generation hub, without sufficient benefits accruing to the host community of Atlantis.

While the relocation of units from Acacia and Port Rex is considered the preferred social alternative from a broader social perspective, it is important that cumulative impacts on the receiving community of Atlantis be considered, and

appropriate mitigation applied. This can most effectively be done by maximizing social benefit through an increased focus on social investment in the area.