



# Executive Summary

## Proposed 132kV Powerline, Walmer

### Final Basic Assessment Report

#### 1. Introduction

The proposed project will include the construction of a double circuit 132 kV powerline from the existing Lorraine 132 kV substation to the existing 132 kV 17<sup>th</sup> Avenue substation.

SRK Consulting has been appointed by the Nelson Mandela Bay Municipality, as the independent consultants to conduct an Environmental Basic Assessment (BA) to facilitate authorisation of the proposed 132 kV powerline in terms of the National Environmental Management Act No 107 of 1998 (NEMA) as amended, and the associated Environmental Impact Assessment (EIA) Regulations, 2014.

##### 1.1. Purpose and Structure of the Basic Assessment Report

The NEMA EIA Regulations were promulgated to put into practice the environmental management principles espoused in the Act. The Basic Assessment Report (BAR) provides the competent authority, the Department of Economic Development, Environmental Affairs and Tourism (DEDEAT), with all relevant information about the proposed activity, as well as an assessment of the potential impacts in order to inform the decision as to whether the activity should be approved and, if so, under what conditions.

This BAR comprises of two sections, of which Section 2 is mandatory in terms of the requirements for a Basic Assessment. This Summary Report is intended to provide additional contextual information in support of the application<sup>1</sup>. The BAR contains the following sections:

<sup>1</sup> Note that the full report is a collation of sections and not a sequential compilation of report chapters.

#### Section 1: Summary Report/ Executive Summary

Section 1 (this section) provides an introduction to the project; describes the approach to the Basic Assessment process and provides a description of the activity and the proposed concept alternatives considered. It also describes the public consultation process undertaken during the process, the key findings and recommendations and the way forward. In effect this section provides a summary of the key elements of the Basic Assessment.

#### Section 2: Completed DEDEAT BAR Form

Section 2 contains the completed BAR form, as prescribed by DEDEAT, submitted in support of the application for an Environmental Authorisation of the activity under the NEMA EIA Regulations. Section 2 also contains the Appendices as required by the DEDEAT BAR.

##### 1.2. Approach to the Basic Assessment

The environmental authorisation process prescribed for listed activities under Listing Notices 1, 2 and 3 published in Government Gazette Numbers R983, R984 and R985 respectively are defined in the Environmental Impact Assessment (EIA) Regulations made under section 24(5) of the National Environmental Management Act, 2008 (Act No. 107 of 1998) (NEMA).

Activity 19, listed in GN R983 (Listing Notice 1) of the NEMA EIA regulations and Activity 12 and 14 listed in GN R985 (Listing Notice 3) are the main activities associated with the proposed project, calling for an Environmental Authorisation process to be followed:

*GN R.983 Item 19: The infilling or depositing of any material of more than 5 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 5 cubic metres from – (i) a watercourse.*

The installation of the section of underground cable under William Moffet Drive will trigger this activity.

*GN R.985 Item 12: The clearance of an area of 300 square metres or more of indigenous vegetation except where the clearance of indigenous vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan (a) In Eastern Cape (ii) Within critical biodiversity areas identified in bioregional plans; (iv) On land, where at the time of coming into effect of this Notice or thereafter such land was zoned open space, conservation or had an equivalent zoning.*

The proposed powerline alignment will intersect CBAs identified in the Nelson Mandela Bay Municipality (NMBM) Bioregional Plan.

*GN R.985 Item 12 (xii): The development of Infrastructure or structures with a physical footprint of 10 square metres or more (c) In Eastern Cape (iii) In urban areas (aa) Areas zoned for use as public open space (bb) Areas designated for conservation use in Spatial Development Frameworks adopted by the competent authority, zoned for conservation purpose.*

The section of proposed underground cable will be installed within a CBA identified in the Nelson Mandela Bay Municipality (NMBM) Bioregional Plan.

The BA process entails the assessment of the activity and the compilation of a BAR (see Section 2) for public comment. Issues and concerns raised by the public after the distribution of the Background Information Document (BID), in general inform the BAR and concerns raised on the BAR are incorporated into the report which, together with the prescribed Comment and Responses Report, is submitted to DEDEAT for a decision. A typical Basic Assessment process is depicted in the Figure 1.

### 1.3. Prescribed Requirements for the Basic Assessment

The BAR provides information about the proposed activity, a description of the affected environment (including ecological, land use and socio-economic aspects), a description of the process undertaken in order to consult the public on the activity, as well as a basic assessment of the potential impacts of the activity on the receiving environment.

Several appendices to the BAR are required as supporting documentation. These include:

- Appendix A – Site Plan(s);
- Appendix B – Photographs;
- Appendix C – Facility illustration(s);
- Appendix D - Specialist reports;
- Appendix E – Comments and Responses (Public Participation Process);
- Appendix F – Environmental Management Programme (EMPr);
- Appendix G – Other Information;
- Appendix H – Impact Rating Summary;

- Appendix I – Curriculum Vitae;
- Appendix J – Affirmation by the EAP;

This information is contained in Section 2 of the BAR.

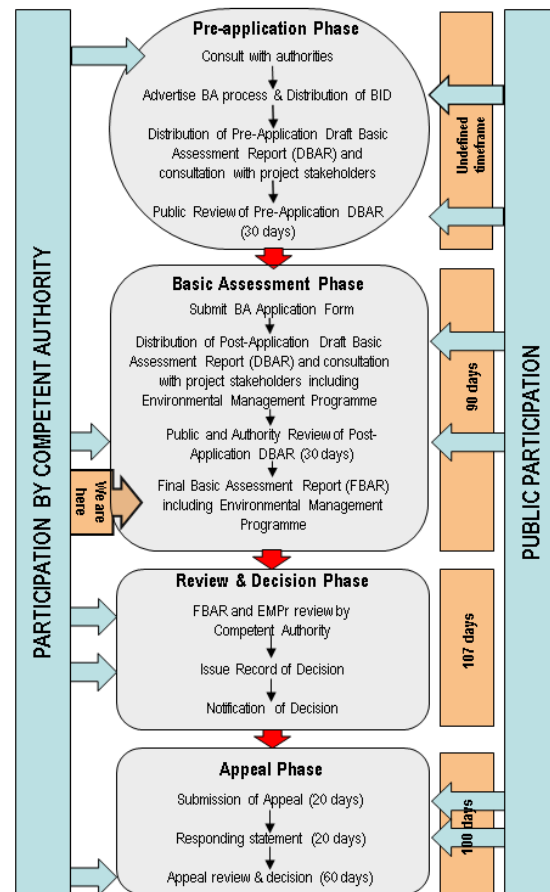


Figure 1: Typical Basic Assessment Process

## 2. Motivation for the Proposed Development

In 2009 the substation at 17<sup>th</sup> Avenue, Walmer was damaged. The load on the substation prior to the damage was 18 MVA. The Nelson Mandela Bay Municipality has predicted a long-term load forecast of about 50 MVA. The predicted load increase is due to residential developments in nearby Fairview, as well as commercial developments along William Moffet Drive and Circular Drive.

The proposed powerline will generate sustainable increase in production and GDP nationally and locally as well as sustainable employment positions.

The proposed 132 kV powerline will connect the Walmer 17<sup>th</sup> Avenue substation to the 132 kV grid via the Lorraine substation. This will stabilise the electricity supply and provide for the predicted future load growth in the area. This will enhance Nelson Mandela Bay's energy supply. The NMBM IDP 2011-2016 identifies Ward 4 and Ward 6 as eligible for electricity upgrades and infrastructure restoration. The proposed alignment is situated within both, ward 4 and ward 6 (as well as a section of ward 8).

The proposed powerline will supply electricity to future proposed residential and commercial developments along the route and greater area as well as supplement the current energy demands of existing residential and commercial properties along the route.

Strengthening of the electricity network in the surrounding area will benefit both residents and business owners, in that the reliability of the current supply will be increased and residences and businesses who do not currently have access to electricity may obtain access. In addition, the engineering team for the proposed 132 kV powerline suggest that it will help to unlock further development in the surrounding suburbs of Fairview, Lorraine and Overbaakens

### 3. Project Description

- The proposed development involves a double circuit 132 kV powerline from the existing Lorraine 132 kV substation to the existing 132 kV 17th Avenue substation.
- The proposed infrastructure will provide for future load growth in this area. Many commercial and residential developments are envisaged by landowners requiring additional capacity to be installed.
- The proposed route is approximately 2.8 km long and will cross private properties as well as NMBM owned land (Please refer to Ownership Map in Appendix A).. An overhead powerline is proposed up to point K on the plan from where an underground cable will be installed and under William Moffet Drive to the eastern side of the existing 17th Avenue substation. Note that an upgrade to this substation is underway within the existing footprint and falls outside the scope of this application and process.
- The following infrastructure specifications are relevant:
  - All overhead lines will be constructed with dual circuit 132 kV monopole self-supporting steel structures, with servitude width of 25 m;
  - Maximum span lengths are limited by line alignment but could be between 140 m and 180 m;
  - Should the 'Petchane' tower type be used the servitude may be reduced to 16 m. The use of the 'Petchane' tower circuit will depend on soil conditions prevalent along the proposed alignment. A geotechnical investigation will be conducted in the detailed design stage to establish the soil conditions along the proposed alignment;
  - A servitude width of 1.5 m is required for the underground cables between points K and L on the map;
  - The powerline will be positioned not closer than 12.5 m from the railway line; and
- Where relevant, tower footing foundations will be specially designed for towers placed near or in a watercourse.

### 4. Public Consultation Process

A Public Participation Process (PPP) aimed at allowing the public to be involved in the environmental process is being carried out. IAPs are encouraged to review the Basic Assessment Report (BAR) to ensure that any comments have been accurately recorded and understood.

The PPP activities that have been conducted to date as part of this BA process are as follows:

- Distribution of a Background Information Document (BID) to identified Interested and Affected Parties (IAPs), stakeholders and authorities on 20 January 2016;
- Placement of a newspaper notice in the EP Herald on 21 January 2016 announcing commencement of the BA and availability of the BID;
- Hand delivery of the BID to residences / businesses in close proximity to the proposed powerline alignment via a 'knock-and-drop' exercise on 22 January 2016;
- Provision of a 32-day comment period on the BID;
- Placement of two onsite posters on appropriate locations on 2 February 2016 inviting IAP registration and comment;
- Compilation of any comments received on the public participation activities to date and integration of these comments into the Pre-application DBAR;
- Distribution of an Executive Summary of the Pre-application DBAR to all IAPs registered for this project and provision of a 30 day comment period;
- Making a copy of the full Pre-application DBAR available in a public library for a 30 day comment period;
- Distribution of the full Pre-application DBAR to organs of state having jurisdiction in respect of any aspect of the activity and provision of a 30 day comment period;
- Compilation of any comments received on the Pre-application DBAR and integration of these comments into the Post-application DBAR;
- Distribution of an Executive Summary of the Post-application DBAR to all IAPs registered for this project and provision of a 30 day comment period;
- Making a copy of the full Post-application DBAR available in a public library for a 30 day comment period;
- Distribution of the full Post-application DBAR to organs of state having jurisdiction in respect of any aspect of the activity and provision of a 30 day comment period;

- Compilation of any comments received on the Post-application DBAR and integration of these comments into the Final Basic Assessment Report (FBAR);
- Distribution of an Executive Summary of the FBAR to all IAPs registered for this project;
- Making a copy of the full FBAR available in a public library; and
- Distribution of the full FBAR to organs of state having jurisdiction in respect of any aspect of the activity.

## 5. Potential Impacts

### 5.1. Impact Rating Methodology

The identification of potential impacts of the proposed activity was based on the following factors:

- The legal requirements;
- The nature of the proposed activity;
- The nature of the receiving environment; and
- Issues raised during the public participation process.

Potential impacts were assessed using SRK's impact assessment methodology, detail of which is provided in Appendix H of the BAR. The significance of an impact is defined and assessed as a combination of the consequence of the impact occurring (based on its extent, intensity and duration) and the probability that the impact will occur.

The impact significance rating should be considered by the competent authority in their decision-making process based on the definitions of ratings ascribed below.

- **Insignificant:** the potential impact is negligible and will not have an influence on the decision regarding the proposed activity.
- **Very Low:** the potential impact is very small and should not have any meaningful influence on the decision regarding the proposed activity.
- **Low:** the potential impact may not have any meaningful influence on the decision regarding the proposed activity.
- **Medium:** the potential impact should influence the decision regarding the proposed activity.
- **High:** the potential impact will affect a decision regarding the proposed activity.
- **Very High:** the proposed activity should only be approved under special circumstances.
- **+ve** – positive impact;
- **-ve** – negative impact

Considering these factors, the key environmental and social impacts identified as potentially resulting from the proposed housing development, are summarised below. The impact significance ratings after effective implementation of key management recommendations are also included.

### 5.2. Construction Impacts

The following potential construction impacts were identified:

- Impacts on Biodiversity:
  - ❖ Loss of Biodiversity/ Vegetation Clearance:
 

Vegetation clearance, vehicular access and excavation activities required during the construction phase may impact negatively on the biodiversity of the area, especially the section of alignment between Circular Drive and William Moffet Drive which is classified as a Critical Biodiversity Area (CBA) according to the Eastern Cape Biodiversity Conservation Plan (ECBCP). The vegetation types which the powerline alignment traverses are listed as critically endangered (Lorraine Grassy Fynbos & Baakens Grassy Fynbos) or endangered (Baakens Forest Thicket) according to the NMBM Bioregional Plan (2009). It must however be noted that the pylon footprints will be minimal in nature and little vegetation clearing will be required. Two potential Yellowwood tree seedlings (*Podocarpus latifolius*) have been planted in the open space adjacent to AG Visser Avenue which may need to be replanted to ensure that they are not damaged during the construction phase. The final significance rating for this impact is MEDIUM (-ve) with or without mitigation measures.
  - ❖ Erosion:
 

Incorrect topsoil stripping may lead to accelerated erosion, resulting in soil loss, and possible sedimentation/ siltation of the watercourse which runs along the southern section of the proposed alignment. The final significance rating for this impact is LOW (-ve) if no mitigation is implemented. However, should the important mitigation measures below be complied with, the significance of the impact could be reduced to INSIGNIFICANT (-ve).
  - ❖ Spread of Alien Invasive:
 

Vegetation clearance required during the construction phase may lead to the spread of alien invasive species. However, vegetation clearing should be minimal and only involve clearing at each tower and along the underground cable route.

The final significance rating for this impact is LOW (-ve) if no mitigation is implemented. However, should the important mitigation measures below be complied with, the significance of the impact could be reduced to INSIGNIFICANT (-ve).
- Impacts on Traffic:
 

Construction at the various road crossings (Bergues Street, Circular Drive and William Moffet Drive) for

the proposed alignment may require detours and/ or traffic control measures. It is important to note that the powerline will cross the road, however no construction is required in the road. The underground crossing at William Moffet Drive will be constructed using directional drilling in order to avoid traffic disruption. Construction traffic may also pose a safety impact to residents living along the proposed alignment. Construction vehicles requiring access to the site may cause wear and tear of the existing roads. The final significance rating for this impact is VERY LOW (-ve) with or without mitigation measures.

- Impacts on Wildlife:

Noise and habitat destruction resulting from construction activities may displace and disturb local wildlife mainly associated with the watercourse and wetland. However, since no activities are planned within any watercourse or wetland and considering the small proposed construction footprint, the potential impact to wildlife should not be significant. The final significance rating for this impact is VERY LOW (-ve) if no mitigation is implemented. However, should the mitigation measures below be complied with, the significance of the impact could be reduced to INSIGNIFICANT (-ve).

- Noise Impacts:

Construction activities will generate noise due to the operation of machinery and vehicles, causing a nuisance to residents along the proposed alignment. The final significance rating for this impact is VERY LOW (-ve) with or without mitigation measures.

- Impacts on Existing Infrastructure and Private Property:

Existing infrastructure including the railway line (north of Macon Road, Lorraine), NMBM road infrastructure, fences and gates, Telkom cables, existing Eskom cables, NMBM water and sewer infrastructure as well as adjacent private property may be disturbed through construction activities. The final significance rating for this impact is VERY LOW (-ve) if no mitigation is implemented. However, should the mitigation measures below be complied with, the significance of the impact could be reduced to INSIGNIFICANT (-ve).

- Impacts on Aquatic Resources (including wetlands):

- ❖ Impact on hydrological regime and increased potential for erosion:

The soils within the study area are susceptible to erosion when subjected to high flows (high volumes and velocities), with head-cuts readily forming within the regional water courses. This creates bed and bank instability in the aquatic ecosystems and consequent sedimentation of downstream areas, which can negatively affect biodiversity and functioning of in stream habitats. Clearing of vegetation could destabilise the soils,

resulting in downstream erosion and or sedimentation that could impact on aquatic habitats within the Baakens River, particularly if no post construction rehabilitation is done to allow revegetation of any disturbed sites. Due to the nature of the study area hydrology, its present state and the surrounding impacts this would although a negative impact, the overall significance of the impact would be rated as LOW (-ve). However should the mitigation measures below be complied with, the significance of the impact could be reduced to INSIGNIFICANT (-ve).

- ❖ Impact on Water Quality:

Presently little is known about the water quality of the water courses directly in the study area, but it is assumed due to the activities observed, the aquatic systems contain some form of pollutants, other than elevated sediment loads during floods. During construction various materials, such as sediments, diesel, oils and cement, could pose a threat to the continued functioning downstream areas, if by chance it is dispersed via surface run-off, or are allowed to permeate into the groundwater. Changes to water quality can negatively impact on the functioning of plants and other instream biota. The final significance rating for this impact is VERY LOW (-ve) if no mitigation is implemented. However, should the mitigation measures below be complied with, the significance of the impact could be reduced to INSIGNIFICANT (-ve).

- ❖ Loss of vegetation, and aquatic habitat and stream continuity:

Wetland vegetation and aquatic corridors create longitudinal links between a variety of habitats and refugia. The refugia are particularly important in times when surface flows are low, i.e. fish populations are able to survive in deeper pools during droughts. These populations are then able to recolonise the remaining river reaches, when reconnected by increased river flows. This function of a catchment and its ability to act as a refugia is highlighted by the conservation plans that have earmarked the study area as such. The proposed transmission line, would see a number of towers located within these areas based on the current alignments, but it is assumed that these tower footprints are small and no access roads will be required within the aquatic habitats. The number of tower footprints directly within or adjacent to the watercourse would be lower if Alternative 1 is selected. However, the impact rating for both alignments is similar. The final significance rating for this impact is LOW (-ve) if no mitigation is implemented. However, should the mitigation measures below be complied with, the

significance of the impact could be reduced to INSIGNIFICANT (-ve).

- Impacts on Archaeological Resources:

Although the proposed alignment is located in an area of low archaeological cultural sensitivity, it is possible that archaeological heritage material exists below the surface and could be impacted during construction. The final significance rating for this impact is VERY LOW (-ve) if no mitigation is implemented. However, should the mitigation measures below be complied with, the significance of the impact could be reduced to INSIGNIFICANT (-ve).

- Impacts on Palaeontological Resources:

Although the proposed alignment is located in an area of low palaeontological cultural sensitivity, it is possible that palaeontological heritage material exists below the surface and could be impacted during construction. The final significance rating for this impact is VERY LOW (-ve) if no mitigation is implemented. However, should the mitigation measures below be complied with, the significance of the impact could be reduced to INSIGNIFICANT (-ve).

- Impacts on Air Quality (Dust):

Windblown dust from material stockpiles and cleared areas may affect surrounding residents, road users and pedestrians by creating a nuisance and safety impact to traffic. However, it is not anticipated that large areas will have to be cleared during the construction phase as the tower footprints are small and minimal new access routes will be required. The final significance rating for this impact is VERY LOW (-ve) with or without mitigation.

- Waste Management:

Construction waste as well as small amounts of domestic waste will be generated. Lack of proper management of the waste on the site may lead to wind-blown litter and dumping creating a negative visual impact and potentially impacting on aquatic ecosystems. The final significance rating for this impact is LOW (-ve) if no mitigation is implemented. However, should the mitigation measures below be complied with, the significance of the impact could be reduced to INSIGNIFICANT (-ve).

- Socio-economic Impacts:

- ❖ Negative changes to the sense of place:

During the construction of the proposed powerline there are likely to be noise impacts caused by the movement of vehicles as well as construction activities on site. These impacts are anticipated to occur primarily during the day with some limited illumination from the site being experienced during the night. The presence of this noise is likely to alter the way the surrounding environment is experienced by

households in the area. As construction activities progress and the footprint of the facility grows, the visual impact will also become more apparent and the sense of place experienced by households residing within the visually affected area will be altered further. It is anticipated that households residing on properties within +/- 500 m from the construction of the powerline will experience the greatest disruption in their sense of place during the construction period. These individuals will, over the course of the construction phase of the project, be subjected to either visual or noise disruptions that are currently not present in the area. The sense of place at the properties located adjacent to or beyond the site of the proposed powerline will also be affected to some extent. The visual exposure on all these properties during the construction phase will not be continuous given the proximity of some of the properties from the proposed powerline. Nevertheless, the knowledge of the powerline near the properties and the fact that it could be seen from some parts will still have a negative connotation and will alter the sense of place experienced by the households residing on these properties. As stated the sense of place of local residents is likely to begin to alter once the construction of the proposed powerline begins. Visual impacts will, however, remain for the entire operation of the development. This means that although the effect on the sense of place could be relatively small considering the population to be affected, the duration of the impact increases it significantly. The effects on the community's sense of place will initially be felt during the construction period and will continue into the operational phase. The impact of the negative change in the sense of place has therefore been assessed for both the construction phase and operational phase. The final significance rating for this impact is MEDIUM (-ve) with or without mitigation measures.

- ❖ Temporary increase in social conflicts associated with influx of people:

Despite the Nelson Mandela Bay Municipality being sufficiently diversified to supply the required workforce for the construction of the proposed powerline, it is highly unlikely that this workforce will be drawn from the surrounding area. Workers involved in the construction of the proposed powerline will therefore be traveling to the site on a daily basis. The influx of construction workers into the area could result in social conflicts between the local population, existing construction workers currently operating in the area and this new

workforce. Likewise, the influx of people into the area, could potentially lead to a temporary increase in the level of crime, illicit activity, waste and possibly a deterioration of the health of the local community through the spread of infectious diseases. The final significance rating for this impact is MEDIUM (-ve) if no mitigation is implemented. However, should the mitigation measures below be complied with, the significance of the impact could be reduced to LOW (-ve).

- ❖ Impact on property and land value in the immediately affected area:

Based on existing research it is estimated that the construction of the proposed powerline could result in a reduction in property values of between R 0 (75% probability) and R 6.8 million (6.0% probability). This equates to a reduction in individual property values of between R 7,564 (Lorraine, Medium scenario) to R 47,726 (Lorraine Manor, High scenario). In viewing these figures it is important to note that, should a reduction in property values occur, it is highly probable that this reduction would only persist for a limited period of time. Furthermore, any impact that does occur would likely diminish over time. The final significance rating for this impact is MEDIUM (-ve) if no mitigation is implemented. However, should the mitigation measures below be complied with, the significance of the impact could be reduced to LOW (-ve).

- ❖ Temporary stimulation of national and local economy:

The proposed powerline will cost between R 4.7 million and R 6.9 million (2016 prices) to establish depending on option selection. This expenditure on the project will stimulate the local and national economies albeit for a temporary period of up one year. It is estimated that the project will increase the production in the country by between R 11.7 million and R 17.3 million in 2016 prices based on route selection, which will translate into an additional between R 4.0 million and R 5.9 million of Gross Domestic Product per Region (GDP-R) (see Table 4.1). These effects will take place for one year. The greatest effects on production and GDP-R stimulated during construction activities will be created through the multiplier effects, specifically through a combination of production and consumption induced effects. The former refers to the impact generated along backwards linkages when the project creates demand for goods and services required for construction and subsequently stimulates the business sales of the suppliers of

inputs that are required to produce these goods and services. The latter refers to the effects of household spending which is derived from an increase in salaries and wages directly and indirectly stimulated by the project's expenditure. The final significance rating for this impact is HIGH (+ve) with or without enhancement measures.

- ❖ Temporary increase in employment in the national and local economies:

The proposed powerline is anticipated to create 15 Full Time Equivalent (FTE) employment positions over the course of the development. Beyond the direct employment opportunities that will be created by the project during the construction phase the development will also have a positive spin-off effect on the employment situation in other sectors of the national and local economies. Through the procurement of local goods (i.e. consumption induced effects) the project will support an additional one FTE employment position. The final significance rating for this impact is HIGH (+ve) with or without enhancement measures.

- ❖ Temporary increase in household earnings:

The proposed powerline will create a total of 16 FTE employment positions during construction generating between R 785 109 (Option 1) and R 1.1 million (Option2) of revenue for the affected households in the country through direct, indirect and induced effects depending on route selection. Of this figure between R 256 910 (Option 1) and R 379 534 (Option 2) will be paid out in the form of salaries and wages to those individuals directly employed during the construction phase. The remaining values of between R 528 119 (Option 1) and R 780 313 (Option 2) in households' earnings will be generated through indirect and induced effects resulting from project expenditure. Given the average household size in the Nelson Mandela Bay Municipality and South Africa was 3.6 and 3.6 respectively, a total of 39 people are likely to benefit from the employment positions created and the income derived through these 11 FTE employment positions. Although temporary, this increase in household earnings will have a positive effect on the standard of living within these households. The average annual salary that will be paid to people employed in the construction of the facility will be R 58,988.16, with this figure varying significantly based on the respective skill levels and job specifications of the employee. The final significance rating for this impact is MEDIUM (+ve) with or without enhancement measures.

- ❖ Temporary increase in government revenue:

The construction of the proposed powerline will generate revenue for the government during the construction period through a combination of personal income tax, VAT, companies tax etc. Additional government revenue will also be earned through corporate income tax. Government earnings will be distributed by national government to cover public spending which includes amongst others the provision and maintenance of transport infrastructure, health and education services as well as other public goods. The final significance rating for this impact is MEDIUM (+ve) with or without enhancement measures.

- Impacts on Aquatic Resources (Cumulative Impact):

- ❖ Impact on Water Quality:

As noted in the Aquatic Impact Assessment (Appendix D), potential cumulative impacts regarding the impact of changes to water quality of nearby watercourses is likely due to the construction of the Lorraine bulk stormwater project. However, the impacts should be short-term and could be rated as Moderate – Low with mitigation. This rating is also based on the assumption that the first detention pond near Circular Drive will capture any pollutants/sediments derived from the stormwater project, stormwater project, which would result in altered hydrological patterns that also then affect migration routes / patterns

### 5.3. Operational Impacts

The following potential operational impacts were identified:

- Socio-economic Impacts:

- ❖ Sustainable increase in production and GDP nationally and locally:

Proposed powerline will require annual operational expenditure of R 320,000 for the first five years after which an additional R 250,000 may be required in order to address routine maintenance and/or component replacements. The total impact on production in the country as a result of the powerline's operations will equate to R 657,490 in 2016 prices per annum and R 1.1 million in the fifth year after completion. Aside from the utilities sector, industries that will experience the greatest stimulus from the project will include electrical machinery and apparatus, insurance, and transport service. In addition, many commercial and residential developments are envisaged by landowners in and around the proposed powerline development. These new developments will require additional electrical capacity to be installed. The construction of the

powerline will therefore help to contribute to the further economic development of the area. The final significance rating for this impact is MEDIUM (+ve) with or without enhancement measures.

- ❖ Creation of sustainable employment positions nationally and locally:

The ongoing maintenance and monitoring of the proposed powerline will create 16 permanent employment positions irrespective of the route selection all of which will be retained for the lifespan of the powerline. Aside from the direct employment opportunities, the powerline will support one FTE employment positions created through the production and consumption induced effects. Due to the spatial allocation of procurement spending and direct employment created, most of the indirect and induced positions will also be created within the local area. The final significance rating for this impact is MEDIUM (+ve) with or without enhancement measures.

- ❖ Improved standards of living for benefiting household:

The creation of 17 Full Time Equivalent (FTE) employment positions throughout the country will generate R 83,495 of additional personal income (2016 prices), which will be sustained for the entire duration of the powerline's lifespan. Given the average household size in affected local municipalities and nationally, this increase in household earnings will support up to 61 people. The sustainable income generated as a result of the project's operation will positively affect the standard of living of all benefiting households. The final significance rating for this impact is MEDIUM (+ve) with or without enhancement measures.

- ❖ Sustainable increase in national and local government revenue:

The proposed powerline will, through salaries and wages payments, contribute towards both local and national government revenue. This will occur at a national level with the revenue derived from the payment of salaries and wages to permanent employees involved with the maintenance of the powerline will contribute to the national fiscus. Although it is impossible to trace exactly how such revenue is allocated, any additional revenue generated means that national governments can increase its spending on public goods and services. The final significance rating for this impact is MEDIUM (+ve) with or without enhancement measures.

- ❖ Provision of electricity for future development:

Strengthening of the electricity network in the surrounding area will benefit both residents and business owners, in that the reliability of the



current supply will be increased and residences and businesses who do not currently have access to electricity may obtain access. In addition, the engineering team for the proposed 132 kV powerline suggest that it will help to unlock further development in the surrounding suburbs of Fairview, Lorraine and Overbaakens. Construction of the powerlines is therefore not anticipated to limit the expansion potential of the residential or commercial areas. The final significance rating for this impact is MEDIUM (+ve) with or without enhancement measures.

- Avifauna Impacts:

- ❖ Bird collisions with infrastructure:

Avifauna impacts relating to collisions with the powerline infrastructure are a possibility especially near watercourses, however, due to the suburban nature of the proposed alignment, the species of avifauna likely to occur in the area should be adapted to suburban situations and should be able to continue to use the flyway without risk of collision.

- ❖ Electrocutation of avifauna:

Avifauna within the local area may be at risk of electrocution due to the installation of the powerline infrastructure. However, large bird species (i.e Blackheaded Heron) are most prone to electrocution, and it is not anticipated that many of these species will occur in the study area being a built-up suburban area.

- ❖ Perching, Roosting and Breeding on infrastructure:

Avifauna in the surrounding area may use the proposed infrastructure for perching and breeding, however the design of the towers should be designed in such a way that it discourages or is not conducive to provide suitable nesting sites for avifauna.

The final significance rating for this impact is LOW (-ve) if no mitigation is implemented. However, should the mitigation measures below be complied with, the significance of the impact could be reduced to VERY LOW (-ve).

- Noise Impacts:

Noise generated by the powerlines during the operational phase may have a nuisance effect on surrounding residents. Noise may result from older or dirty powerlines or during periods of high humidity or rainfall. However, these impacts will only affect people in very close proximity to the powerline and are generally considered insignificant in assessments as the standard establishment of appropriate servitude widths as well as proper maintenance of the lines will mitigate such impacts. The final significance rating for this impact is VERY LOW (-ve) with or without mitigation mainly because the impact is permanent.

- EMF (Electro-Magnetic Field):

The proximity of residential and commercial properties to the proposed powerlines has the potential for EMF exposures. Scientific research on the effects of EMFs on public health has not demonstrated clearly the existence of a significant risk, nor has it proven the complete absence of risk. Despite the large number of studies published, several endpoints have not been rigorously examined in a sufficient number of studies. As the methodology of studies improved, the estimates of risk have become lower, making it unlikely that these studies are failing to identify a high risk. Nevertheless, a sufficient uncertainty remains as to the potential of EMF involvement in the causes of cancer. Therefore, even a small risk associated with EMF exposure could have important public health consequences. EMF fields are known to interact with tissues by inducing electric fields and currents in them. The electric currents induced by EMF fields commonly found in the typical human environment, however, are normally much lower than the strongest electric currents naturally occurring in the body such as those that control the beating of the heart. In general, the width of the servitude proposed for the different capacity powerlines are specifically prescribed to ensure safety related to potential impacts such as EMF and noise. A maximum servitude width of 25 m is prescribed for the proposed overhead powerline which will prevent the exposure of the general public (including adjacent property owners) to EMF for long periods as no buildings may be constructed within the servitude. The International Commission for Non-ionizing Radiation Protection (ICNIRP) specified guidelines for EMF exposure in 1998 (subsequently updated in 2010). The guidelines recommend the maximum Electric and Magnetic Fields allowable for limiting EMF exposure that will provide protection against adverse health effects. According to the updated 2010 guidelines the recommended guideline for Electric Field is 5 kV/m for general public (10 kV/m for occupational) and for Magnetic Field 200  $\mu$ T (1 mT for occupational). An EMF study conducted by Eskom (please refer to Appendix G) specifies the maximum magnetic field at a 132 kV powerline servitude boundary of 15.5 m in width from the centreline as 1  $\mu$ T and the maximum electric field at a servitude boundary of 15.5 m in width from the centreline as 0.5 kV/m, therefore below the stated guidelines set out by the ICNIRP in 2010. According to data from [www.emfs.info](http://www.emfs.info), the electric and magnetic fields experienced at 12.5 m from the centre line of the proposed alignment will still fall below the guidelines specified by the ICNIRP, therefore the potential for adverse health effects due to long-term exposure to EMF resulting from the proposed powerline is expected to be low. The final significance rating for this impact is LOW (-ve) with or without mitigation. Since the proposal already

includes the establishment of a servitude, the impact rating without and with mitigation was done for installing the powerline with a servitude

- Fire (Indirect Impact):

Failure to maintain the powerline and powerline servitude may pose a potential fire risk.

The final significance rating for this impact is INSIGNIFICANT (-ve) with or without mitigation.

The Summary Impact Rating Table for the above-mentioned potential impacts is included below (Table 2).

## 6. Key Management Recommendations

With effective implementation of the Environmental Management Programme (EMPr) included as Appendix F of the BAR, and regular audits throughout construction to monitor and report on compliance with the conditions of the EMPr, it is anticipated that the significance of all negative potential impacts identified can be reduced to low or less.

The following key management measures are included in the EMPr for the construction phase:

- A detailed walk down survey must be conducted once the towers positions are known by an aquatic specialist due to the close proximity of either of the options to the wetlands and water courses. This must also include an opportunity to assess the final design provisions prior to construction to ensure that minimal impact will occur. Once the tower positions are known site specific recommendations could be provided by the specialist;
- Minimise cleared and disturbed areas and use already transformed areas where possible;
- Permits would be required for the relocation of any protected plants, e.g. Yellowwood trees;
- Use existing access roads and where new routes are required use transformed areas wherever possible, most importantly in the CBA areas;
- Tower footprints must be kept to a minimum and if possible outside of the demarcated water course;
- Rehabilitation of cleared areas should be conducted as soon as possible after construction at the specific site;
- Littering and contamination of water sources during construction must be prevented by effective construction camp management;
- All loads shall be secured / enclosed to prevent spillage during transport;
- Implementation of strict traffic safety measures and speed limits for all construction related traffic;
- Appropriate road maintenance programme to be implemented;
- Locations of existing services to be determined and mapped prior to the commencement of construction;
- Should any existing services be damaged as a result of the construction activities, the affected parties should be notified and the relevant actions taken to repair damages as soon as possible;
- If concentrations of archaeological, palaeontological and/ or historical heritage material, marine shells, and/ or human remains are uncovered during construction, all work must cease immediately and be reported to the Albany Museum (046 622 2312) and/ or ECPHRA (043 745 0888) so that systematic and professional investigation/ excavation can be undertaken;
- The contractor shall take all reasonable steps to prevent the pollution of soil and/or groundwater by fuels and oils as a result of his activities;
- No vehicles to refuel within watercourse / wetlands;
- Chemicals used for construction must be stored safely on site and surrounded by bunds. Chemical storage containers must be regularly inspected so that any leaks are detected early;
- Emergency plans must be in place in case of spillages onto road surfaces and water courses;
- The construction camp and necessary ablution facilities meant for construction workers must be beyond the 32m of any of the watercourses;
- Dust suppression techniques, such as wetting or covering potential dust sources, should be implemented to minimise the dust impact if required, especially on windy days;
- No stockpiling should take place within a water course;
- All stockpiles must be protected from erosion, stored on flat areas where run-off will be minimised, and be surrounded by bunds;
- Stockpiles must be located away from river channels;
- Erosion and sedimentation into channels must be minimised through the effective stabilisation (gabions and Reno mattresses) and the re-vegetation of any disturbed riverbanks;
- Construction activities should be kept to normal working hours (i.e. 6:00 to 18:00, Monday to Saturday) according to the Noise Control Regulations in terms of the Environmental Conservation Act (Act 73 of 1989) to reduce the noise impact to an acceptable level;
- Activities that may disrupt neighbours (e.g. delivery trucks, blasting and other excessively noisy activities) must be preceded by notice being given to the affected neighbours at least 24 hours in advance;
- No sound amplification equipment such as sirens, loud hailers or hooters are to be used on site except in emergencies and no amplified music is to be permitted on site;
- Smoking shall only be permitted in designated smoking areas in the site camp;

- A fire officer shall be appointed by the contractor who shall be responsible for co-ordinating rapid, appropriate responses in the event of a fire;
- Toilets are to be provided by the contractor for workers at a ratio of at least 1 toilet per 20 workers or as per specifications of the supplier, and must be situated in close proximity to all work areas;
- Natural areas that are not affected by the footprint should remain as such. Efforts should also be made to avoid disturbing such sites during construction;
- Activities that may disrupt neighbours must be preceded by notice being given to the affected neighbours at least 24 hours in advance;
- Establish a management forum comprising key stakeholders to monitor and identify potential problems that may arise due to the influx of workers to the area;
- The developer should encourage the contractor to increase the local procurement practices and promote the employment of people from local communities, as far as feasible, to maximise the benefits to the local economies;
- Employment labour-intensive methods in construction where feasible;
- Sub-contract to local construction companies particularly SMMEs and BBBEE compliant enterprises where possible;
- Use local suppliers where feasible and arrange with the local SMMEs to provide transport and other services to construction crews; and
- The developer should engage with local authorities and business organisations to investigate the possibility of procuring construction materials, goods and products from local suppliers where feasible.

The following key management measures are included in the EMP for the operational phase:

- Regular maintenance of infrastructure, including swift and appropriate repairs if required;
- The powerline servitude shall be kept clear of alien vegetation and dumping;
- In the event that illegal dumping is observed along the power line alignment, then the NMBM's Electricity and Energy personnel shall notify the NMBM cleansing/ waste management personnel;
- Should illegal dumping persist, then the NMBM Electricity and Energy Business Unit shall consult with the NMBM's waste management personnel to identify methods (e.g. bollards restricting access or lockable entrance points) for reducing instances of illegal dumping;
- Proper rehabilitation as well as monitoring and clearing of alien invasive vegetation by the

Contractor, during the course of the construction and defects liability periods, before they become seed bearing;

- Monitoring for avifaunal mortality along the powerline during maintenance activities and additional mitigation measures such as bird flight diverters should be fitted if there are places where regular mortality occurs;
- Emergency plans and procedures should be in place in case of any spills or leaks;
- Where possible, local labour should be considered for employment so as to increase the positive impact on the local economy;
- As far as possible, local small and medium enterprises should be approached to investigate the opportunities to supply maintenance services; and
- The operator responsible for the maintenance of the powerline and servitude should be encouraged to, as far as possible, procure materials, goods and products required for the operation of the facility from local suppliers to increase the positive impact in the local economy.

## 7. Key Findings

The most significant negative impacts which are associated with the construction phase of the development include socio-economic impacts associated with the negative change in sense of place, impacts on property values and potential conflict with influx of people. The impact associated with negative change in sense of place has been given an impact rating of MEDIUM significance with or without mitigation measures. The other negative socio-economic impacts have been given a rating of MEDIUM without mitigation, which can be reduced to LOW if adequate mitigation measures are applied.

The most significant positive impacts associated with the construction phase of the development include socio-economic impacts associated with the temporary stimulation of the local and national economy as well as the temporary increase in employment opportunities. Both impacts have been rated as HIGH significance with or without enhancement measures.

The most significant negative impacts which are associated with the operational phase of the development include socio-economic impacts associated with the negative change in sense of place related to the 132 kV powerline. The socio-economic impacts have been given an impact rating of MEDIUM significance with or without mitigation measures. All other negative impacts have received significance ratings of LOW or lower ratings.

The most significant positive impacts associated with the operational phase of the development include socio-economic impacts associated with the sustainable increase

in production and GDP of the local and national economy, the sustainable increase in employment opportunities, improved standards of living for benefiting households, the sustainable increase in national and government revenue as well as the provision of electricity for future developments. All of these described impacts have been rated as MEDIUM significance with or without enhancement measures.

Note that the impacts described above relate to both alignment alternatives. The impacts for both alternatives have been rated exactly the same in all instances, even though a preference for Option 1 has been indicated by the aquatic specialist. Option 1 is therefore indicated at the environmentally preferred option.

## 8. The Way Forward

The FBAR has assessed the environmental acceptability of the proposed project. It is believed that this report have

assessed the full suite of potential environmental impacts related to the proposed project and that sufficient information regarding the identification, assessment and potential mitigation of impacts has been presented to facilitate informed decision-making by DEDEAT. The FBAR will assist DEDEAT in deciding whether to approve or reject the proposed project. If DEDEAT approves the project, the recommendations and mitigation measures in this report will help to identify the conditions attached to this approval. This Executive Summary of this report has been distributed to all IAPs.

A hard copy of the complete FBAR will be made available inspection at Walmer Public Library.

The report can also be accessed as an electronic copy on SRK Consulting's webpage via the 'Public Documents' link <http://www.srk.co.za/en/page/za-public-documents>.

**Table 1: Issues raised by Interested and Affected Parties in response to the BID**

Interested and/or Affected Party	Issue raised	Response
<b>Comments relating to the process</b>		
J Baeyens - Capeco	The Background Information Document was only forwarded to Capeco on 18 February 2016, two working days before the deadline for comment.	[SRK] Please refer to Appendix E2 containing a delivery receipt for the BID forwarded per email to Capeco on 20 January 2016. The email of 18 February 2016 was a reminder of the deadline for comment on the BID, which expired at 12h00 on 22 February 2016. Capeco was thus afforded 32 calendar days to submit their initial comments. Further opportunities to comment were provided on the BAR.
Cllr G Rautenbach – Ward 8 Councillor	Why was the ward 8 office not informed of the project?	[SRK] Please refer to Appendix E2 containing a delivery receipt for the BID serving as notice of the project and requesting initial comments, forwarded to the Ward 8 office on 20 January 2016. A reminder of the deadline was also forwarded on 18 February 2016. SRK has, incorporated the Councillor's comments received on 2 March 2016. Further opportunities to comment were provided on the BAR.
J Baeyens - Capeco	Require the names and contact details of all IAPs and stakeholders.	[SRK] A list of all notified and registered parties appears in Appendix E5 of the BAR (this report).
J Baeyens - Capeco	The BID does not specify crucial elements pertaining to electricity masts, location of servitudes, design etc.	[SRK] The purpose of the BID is to alert potential IAPs of the proposed project. More detailed information has been provided in the BAR (this report).
M Crocker – Capeco W Parker (JGS) – obo Stylestar Properties 191 (Pty) Ltd	Regulations pertaining to EIA state that applicant must first obtain written consent of landowner to undertake the activity before applying for environmental authorisation. No written consent has been sought or obtained in respect of erf 1226 Fairview. No servitude is registered in favour of the municipality or Eskom over the property and no special conditions in favour of Eskom is reflected on the title deed.	[SRK] According to regulation 39(2) of the NEMA 2014 EIA Regulations, written consent is not required for linear activities. In this Basic Assessment process all landowners were notified of the proposed activity and will have various opportunities to comment on the assessment. The registration of a servitude is a process that falls outside the EIA Regulations and will be conducted by the NMBM.
Cllr G Rautenbach – Ward 8 Councillor	When was the public consultation for the project conducted?	[SRK] The public participation process is still ongoing and commenced with the distribution of the BID. The BID (Appendix E1) contains a flow diagram which sets out the process and indicates further opportunities for public input.
<b>Comments relating to design</b>		
E van Wyngaardt – Local Resident	Section A to B should not require to be overhead as an underground pipe (conduit) exists.	[NMBM] The option of underground cables for additional sections of the route is not financially feasible. [SRK] Please refer to section A(2) of the BAR for a discussion on project alternatives.
M Crocker - Capeco	Capeco will not permit overhead cables to run through its property (erf 1126 Fairview), however will accommodate proposal if electrical supply is placed underground. We will consider option of underground installation from numbers G, E1 to E and GF to E respectively as you only need a servitude width of 1.5m.	[NMBM] Comment noted. The option of underground cables for additional sections of the route is not financially feasible. [SRK] Please refer to section A(2) of the BAR for a discussion on project alternatives.
R van Schalkwyk – Local Resident W Parker (JGS) – obo Stylestar Properties 191 (Pty) Ltd	Underground cable is a better option.	[NMBM] The option of underground cables for additional sections of the route is not financially feasible. [SRK] Please refer to section A(2) of the BAR for a discussion on project alternatives.

Interested and/or Affected Party	Issue raised	Response
R Odendaal – Ward 3 Councillor	Alternatives to high level masts must be investigated.	[NMBM] The option of underground cables for additional sections of the route is not financially feasible. [SRK] Please refer to section A(2) of the BAR for a discussion on project alternatives.
R van Schalkwyk – Local Resident	Oppose the erection of petechane style towers in the area between points A & C.	[SRK] Comment noted.
R vanderlinden – Local Resident	Powerlines should be placed on the other side of the railway line towards Lorraine and not Lorraine Manor and Lovemore Heights.	[NMBM] The option of installing the powerline on the railway side was initially considered, but due to the plans of refurbishing the railway line this option is practically not feasible. Space is a limitation for the clearance between the proposed powerline and the railway line.
W Parker (JGS) – obo Stylestar Properties 191 (Pty) Ltd	Eskom guideline provides that for a 132 kV powerline a minimum width is 18 m from the centreline of the powerline, thus minimum servitude distance of 36 m. However BID indicated a servitude width of 25 m.	[Bosch Stemele – Project Engineers] The Municipal By-Laws allow for a 25 m servitude.
<b>Comments relating to the environment</b>		
NR Jali – Local Resident	Presence of guinea fowl in the Overbaakens area that will be affected by the bush clearing.	[SRK] All potential impacts, including wildlife, are discussed in section D(2) of the BAR (this report), including proposed mitigation measures.
W Parker (JGS) – obo Stylestar Properties 191 (Pty) Ltd	Aboveground powerlines will affect animals and birdlife in the area. Animals will suffer loss of habitat and environmental look would be unsightly.	[SRK] All potential impacts, including wildlife and avifauna, are discussed in section D(2) of the BAR (this report) including proposed mitigation measures.
NR Jali – Local Resident	Area in Overbaakens is used by people as a dumping site.	[SRK] Comment noted. Please refer to section D(2) of the BAR (this report) for a discussion on potential impacts, including waste management, as well as proposed mitigation measures.
J Baeyens - Capeco	The proposed alignment crosses over onto property owned by Capeco and classified as 'sensitive ecological areas' in our RoD.	[SRK] All potential impacts, including terrestrial and aquatic areas and resources, are discussed in section D(2) of the BAR (this report). An Aquatic Impact Assessment has also been conducted by a specialist and is included in Appendix D of the BAR.
M Crocker - Capeco	Water channel along which the electrical supply is proposed to run is sensitive no-go area together with a 100 year floodline which has already encroached and minimized the footprints of our approved development rights (as per approved RoD ECm1/LN1&3/M/12-88)	[SRK] All potential impacts, including terrestrial and aquatic areas and resources, are discussed in section D(2) of the BAR (this report). An Aquatic Impact Assessment has also been conducted by a specialist and is included in Appendix D of the BAR.
<b>Comments relating to social impacts</b>		
E van Wyngaardt – Local Resident R van Schalkwyk – Local Resident	Open space is utilised by public for various recreational activities which overhead powerlines would interfere with.	[SRK] Comment noted. It is not clear from the comment what recreational activities are referred to. Please refer to section D(2) of the BAR (this report) for a discussion on potential impacts as well as proposed mitigation measures.
NR Jali – Local Resident	Proposed alignment crosses over a path used by residents as a shortcut to the shops.	[SRK]. Comment noted. The proposed powerline will not impact on pedestrians visiting the nearby shops.

Interested and/or Affected Party	Issue raised	Response
W Parker (JGS) – obo Stylestar Properties 191 (Pty) Ltd	A cultural heritage expert must be consulted. The natural landscape would be negatively affected by aboveground powerlines.	[SRK] All potential impacts, including archaeological and palaeontological impacts, are discussed in section D(2) of the BAR (this report). Specialist input is included in Appendix D of the BAR. The report will be submitted to the heritage authorities, who will comment on the need to assess impact on cultural landscapes. To SRK's knowledge, the visual quality of the area does not enjoy special protection in terms of the National Heritage Resources Act (Act No. 25 of 1999).
<b>Comments relating to the economic impacts</b>		
R vanderlinden – Local Resident M Crocker – Capeco R Odendaal – Ward 3 Councillor	Depreciation of property values due to presence of overhead powerlines.	[SRK] Comment noted. Please refer to section D(2) of the BAR (this report) for a discussion on potential impacts, which includes impact assessment on property values.
M Crocker – Capeco W Parker (JGS) – obo Stylestar Properties 191 (Pty) Ltd	Erf 1226 Fairview has approval for residential development and the potential for negative financial impact on the landowner must be considered.	[SRK] Comment noted.
M Crocker – Capeco R Odendaal – Ward 3 councillor	Construction of high level masts will have a negative impact on future growth and development in the area.	[SRK] A clear reason is not provided regarding how high level masts would limit future growth and development in the area. In terms of the electricity provision, the distribution network is critical to enhance development growth in the larger area.
W Parker (JGS) – obo Stylestar Properties 191 (Pty) Ltd	Maintenance of aboveground powerlines is costly compared to underground cables.	[Bosch Stemele – Project Engineers] Maintenance cost of overhead line is not that much higher and if the capital cost of underground cable is considered, the maintenance cost of overhead lines becomes immaterial.
<b>Comments relating to the visual impacts</b>		
J Baeyens - Capeco	Since no pictures of the visual impact are included, IAPs cannot judge the necessity to register.	[SRK] The purpose of the BID is to alert potential IAPs of the proposed project. Further opportunities to comment were provided by the distribution of the Pre-application DBAR and the Post Application DBAR.
M Crocker - Capeco	Visual impact will impact viability of the area as a residential intensification and infill node. Will negatively impact character of the area.	[SRK] All potential impacts, including visual impacts, are evaluated and discussed in section D(2) of the BAR (this report), including proposed mitigation measures.
<b>Comments relating to safety concerns</b>		
M Crocker – Capeco R Odendall – Ward 3 Councillor	Concern regarding electromagnetic radiation from masts.	[SRK] All potential impacts, including the electromagnetic field (EMF), are discussed in section D(2) of the BAR (this report).
W Parker (JGS) – obo Stylestar Properties 191 (Pty) Ltd	Aboveground powerlines create health risks which place cost and burden on the state.	[SRK] All potential impacts, including health risks associate with powerlines in general, are discussed in section D(2) of the BAR (this report). It is unclear whether this comment refers to health risks that are specific to overhead powerlines as opposed to health risks that are specific to underground powerlines.
W Parker (JGS) – obo Stylestar Properties 191 (Pty) Ltd	Aboveground powerlines pose health danger to schools, residential areas and a soon-to-be hospital nearby.	[SRK] Note that no specifics are mentioned regarding the type of health dangers referred to in the comment. All potential impacts, including health risks associate with powerlines in general, are discussed in section D(2) of the BAR (this report).
W Parker (JGS) – obo Stylestar Properties 191 (Pty) Ltd	Fire hazards would be negated by underground cables.	[SRK] All potential impacts, including fire, are discussed in section D(2) of the BAR (this report), including proposed mitigation measures.

Interested and/or Affected Party	Issue raised	Response
W Parker (JGS) – obo Stylestar Properties 191 (Pty) Ltd A cultural heritage expert must be consulted. The natural landscape would be negatively affected by aboveground powerlines.	Aboveground powerlines will affect the functioning of hospital's equipment.	[SRK] It is not clear in what way the proposed powerline could affect equipment used in the hospital that is to be constructed. Also, it is unclear whether this comment refers to risks that are specific to overhead powerlines as opposed to risks that are specific to underground powerlines. Note that all potential impacts are discussed in section D(2) of the BAR (this report), including proposed mitigation measures.
W Parker (JGS) – obo Stylestar Properties 191 (Pty) Ltd	Discussion of foreign law pertaining to issue of electromagnetic frequency.	[SRK] This BA process is conducted according to South African legislation. No comparative legislation applies. All potential impacts, including electromagnetic field (EMF), are discussed in section D(2) of the BAR (this report).  An underlying assumption is that design standards, including buffers for powerlines, as applied by the NMBM, already incorporate health and safety considerations consistent with international standards.
<b>Comments of a general nature</b>		
E van Wyngaardt – Local Resident	All the residents of Macon Road object to an overhead line in front of our houses.	[SRK] Note that <u>no</u> signed petition was included to confirm that all residents of Macon Road object to the overhead powerline.
NR Jali – Local Resident	At this stage I do not know if I will be affected by the powerline however, point K is almost at my backyard.	[SRK] Please refer to map in Appendix A indicating property details in the surrounding area. The proposed powerline does not extend across your property.
M Crocker - Capeco	Provided hard copy of full objection submitted in respect of previous EIA carried out by Coastal and Environmental Services (CES).	[SRK] Noted and acknowledged. All objections contained in the document which are applicable and relevant to the current BA have been dealt with under the specific headings in this Comments & Responses Table.
W Parker (JGS) – obo Stylestar Properties 191 (Pty) Ltd	Applicant must in terms of NEMA implement mitigation measures. Mitigation measure would be to construct an underground cable system.	[SRK] The option of installing an underground cable for the entire route has been eliminated during the design phase of the proposed development due to costs. Please see the discussion regarding alternatives in section A(2) of the BAR.
W Parker (JGS) – obo Stylestar Properties 191 (Pty) Ltd	Applicant must consider any feasible and reasonable alternatives to the activity, such as underground cables.	[NMBM] The option of installing an underground cable for the entire route was eliminated during the design phase of the proposed development due to costs.  [SRK] Please see the discussion regarding alternatives in section A(2) of the BAR.
W Parker (JGS) – obo Stylestar Properties 191 (Pty) Ltd	Eskom is bound by the constitutionally guaranteed right to an environment which is not harmful to your health or wellbeing, which is not achieved by aboveground powerlines.	[SRK] Note that the NMBM is the applicant for this proposed powerline. The environmental basic assessment process is conducted to assess any potential impacts that could result from the proposed activity including impacts to health and well-being. Please refer to section D(2) of the BAR for a discussion on all potential impacts, including recommended mitigation measures.



**Table 2: Comments from Interested and Affected Parties on the Pre-Application Draft Basic Assessment Report (DBAR)**

Interested and/or Affected Party	Issue raised	Response (by SRK unless otherwise specified)
<b>Comments relating to the process</b>		
J Baeyens - Capeco	Who is the party driving the application, Eskom or the municipality?	[SRK] The NMBM is the applicant for the proposed powerline.
J Baeyens - Capeco	Who is the legal representative of the applicant (director, government official)?	[SRK] The Basic Assessment process (at this stage) is not litigious in nature, therefore no legal representative has been appointed for this purpose.
W Parker (JGS) – obo Stylestar Properties 191 (Pty) Ltd and Kirland Investments (Pty) Ltd	The delay in responding to clients' request for additional information as well as denying their request for an extended deadline for comment was aimed at frustrating their ability to submit full and comprehensive comments on the DBAR.	[SRK] Note that it is not SRK's intension to prevent any comments from any IAP or stakeholder. We welcome any comments and all IAPs have been advised of the process and public comments periods. SRK advised the commenter per email on 17 May 2016 that their request for additional information would be reflected and addressed in the Post-Application DBAR and that they would have the opportunity to comment on our responses prior to any decision being made by the competent authority. The commenter confirms his knowledge of this in point 31 of his letter.
W Parker (JGS) – obo Stylestar Properties 191 (Pty) Ltd and Kirland Investments (Pty) Ltd	Requests a copy of any further report to be provided immediately once finalized.	[SRK] Noted.
<b>Comments relating to design</b>		
R van Schalkwyk – Local Resident L Minnie – Local Resident M Elliot – Local Resident S Clegg – Local Resident T Swart – Local Resident L Pieters – Local Resident E van Wyngaardt – Local Resident H Gray – Local Resident M Reid – Local Resident K Steyn – Erstwhile Resident C Gagiano – Local Resident P Alberts – Local Resident R Vanderlinden – Local Resident	Insist that powerline be underground.	[NMBM] The option of installing an underground cable for the entire route was eliminated during the design phase of the proposed development due to costs. [SRK] Please see the discussion regarding alternatives in section A(2) of the BAR.
E van Wyngaardt – Local Resident	It is stated that underground cabling is not financially feasible. Are you aware that there is currently a 3m deep trench available as they are laying stormwater pipes? With correct planning the same trench can be utilized for the cables (photos of trench attached),	[SRK] Note that the largest cost of the installation of underground cable is not the trenching but the actual cable.
W Parker (JGS) – obo Stylestar Properties 191 (Pty) Ltd and Kirland Investments (Pty) Ltd	We suggest that the information furnished by the applicant in relation to the relative cost of constructing the powerline underground as opposed to aboveground, be circulated to all interested parties and that the date for submission of comments be extended.	[SRK] Please refer to section section A(2) of the BAR where a cost breakdown has been provided.
J Baeyens - Capeco	What is the extra cost for (partly) putting the powerline under the ground?	[SRK] Please refer to section A(2) of the BAR where a cost breakdown has been provided.

Interested and/or Affected Party	Issue raised	Response (by SRK unless otherwise specified)
W Parker (JGS) – obo Stylestar Properties 191 (Pty) Ltd and Kirland Investments (Pty) Ltd J Baeyens - Capeco	Request documentation supporting costs difference in respect of overhead and underground powerlines. A detailed cost breakdown is required from the involved engineers.	[SRK] Please refer to section A(2) of the BAR where a cost breakdown has been provided.
W Parker (JGS) – obo Stylestar Properties 191 (Pty) Ltd and Kirland Investments (Pty) Ltd	The NMBM statement that it is not economically feasible to place the cabling underground due to budget restraints is misleading as: <ul style="list-style-type: none"> <li>• Any additional cost incurred by underground cabling would be recoverable by an electricity tariff determined by NERSA; and</li> <li>• No consideration has been given to imposing a levy on the approval of the developments necessitating the additional capacity, to fund the cost of improvements to the NMBM electrical distribution network.</li> </ul>	[NMBM] Underground is extremely expensive compared to overhead cable (refer to the cost breakdown in the BAR) and the NMBM generally does not put 132 kV infrastructure underground due to the cost unless it is practically impossible to do otherwise. The cost of the underground will be borne by the NMBM which would mean recovery of the cost from the tariff leading to every customer would have to pay because of the demand of a single customer. Technically having a combination of underground and overhead poses problems in the reliability of supply as the overhead protection scheme poses risk of damage to the underground cable.
J Baeyens - Capeco	It is unclear where the powerline will run. The drawing is vague over a satellite picture. We need precise drawings where the powerlines would be running over (or under) and also the exact locations of the infrastructure on the ground (pilots in concrete).	[SRK] Maps indicating property numbers and boundaries are included in Appendix A.  Exact positions of the pylons will only be determined in the detailed design phase. These will be design to avoid sensitive areas (e.g. wetlands) as described in the BAR.
J Baeyens - Capeco	We are unable to assess the impacts with the proposed alignment co-ordinates provided in the DBAR (Appendix G). We need detailed architectural drawings of any infrastructure (pillars, concrete foundations, access roads, fences) that would be constructed.	[SRK] Exact positions of the pylons will only be determined in the detailed design phase. These will be design to avoid sensitive areas (e.g. wetlands) as described in the BAR. Concerns regarding sensitive areas should be submitted as soon as possible for this to be included in the detailed design process.
J Baeyens - Capeco	It is unspecified how and on what grounds these pillars would be placed on our land, how much land would be bought, at which conditions.	[NMBM] An 'Affected Properties' map is included in Appendix A of the BAR. Pillars will be placed more or less in line with the alignments showed on this map depending on the option chosen for development. The NMBM will appoint services providers to conduct the detailed design in due course. In addition, the NMBM Estate Division will arrange meetings with affected property owners.
J Baeyens - Capeco	What are the needs (from where to where) for which these line will cater and what causes the extra demand?	[SRK] Please refer to section A(9) of the BAR talk details the need and motivation for the project.
J Baeyens - Capeco	Why can the existing lines running alongside William Moffat on one side and Dijon on the other side of Circular Drive not be upgraded to cater for extra capacity?	[NMBM] The existing lines are fed from the 66 kV network and the plans are to establish 132/11 kV transformation which will take care of the current load and future load growth. Upgrading the lines will not be a solution as long lengths of cable will have to be run to supply the load. Such action will cause voltage drops which are not a desired situation as it will lead to overheating.
J Baeyens - Capeco	We need a detailed study of what the alternative options were and how they were studied.	[SRK] Please refer to section A(2) of the BAR. Additional information has been added regarding the project alternatives as well as a cost breakdown of the above and below ground infrastructure requirements.

Interested and/or Affected Party	Issue raised	Response (by SRK unless otherwise specified)
<b>Comments relating to the environment</b>		
J Baeyens - Capeco	The proposed powerline appears to run in /over a riverbed, with 100 year floodline.	[SRK] Please refer to section D(2) of the BAR as well as the Aquatic Specialist Study in Appendix D for a discussion regarding the watercourses in the area and potential impacts.
W Parker (JGS) – obo Stylestar Properties 191 (Pty) Ltd and Kirland Investments (Pty) Ltd	The DBAR does not indicate whether the placement of the powerline bases occurs within the 1:100 year flood line for the water courses along and in which the proposed powerline shall travel.	[SRK] Note that detailed design for the pylon positions has not been completed. The design will consider all recommendation in the BAR as well as the Aquatic Specialist study in order to minimize impacts to the watercourses in the vicinity.
<b>Comments relating to the economic impacts</b>		
R van Schalkwyk – Local Resident L Minnie – Local Resident M Elliot – Local Resident S Clegg – Local Resident T Swart – Local Resident L Pieters – Local Resident E van Wyngaardt – Local Resident H Gray – Local Resident M Reid – Local Resident K Steyn – Erstwhile Resident C Gagiano – Local Resident P Alberts – Local Resident R Vanderlinden – Local Resident	Residents are expected to absorb a loss in value to their property.	[SRK] All potential socio-economic impacts, including impact on property values have been included in section D(2) of the BAR as well as the Socio-Economic Specialist Report included in Appendix D.
R van Schalkwyk – Local Resident	There will be a definite drop in property values. What are the proposed mitigation measures for this?	[SRK] All potential socio-economic impacts, including impact on property values have been included in section D(2) of the BAR as well as the Socio-Economic Specialist Report included in Appendix D. Recommendations for mitigation are included in this section as well.
J Baeyens - Capeco	Presence of powerlines will result in a loss of revenue/ land of Capeco because people will not buy units because of health concerns and aesthetic impact.	[SRK] All potential socio-economic impacts as well as health impacts have been included in section D(2) of the BAR as well as the Socio-Economic Specialist Report included in Appendix D. Please specifically refer to the discussion in the Socio-Economic Specialist Report regarding sense of place.
<b>Comments relating to the visual impacts</b>		
R van Schalkwyk – Local Resident L Minnie – Local Resident M Elliot – Local Resident S Clegg – Local Resident T Swart – Local Resident L Pieters – Local Resident E van Wyngaardt – Local Resident H Gray – Local Resident M Reid – Local Resident K Steyn – Erstwhile Resident C Gagiano – Local Resident P Alberts – Local Resident R Vanderlinden – Local Resident	Natural appearance and tranquility of area will be lost.	[SRK] All potential socio-economic impacts, including impact on sense of place have been included in section D(2) of the BAR as well as the Socio-Economic Specialist Report included in Appendix D.

Interested and/or Affected Party	Issue raised	Response (by SRK unless otherwise specified)
R van Schalkwyk – Local Resident L Minnie – Local Resident M Elliot – Local Resident S Clegg – Local Resident T Swart – Local Resident L Pieters – Local Resident E van Wyngaardt – Local Resident H Gray – Local Resident M Reid – Local Resident K Steyn – Erstwhile Resident C Gagiano – Local Resident P Alberts – Local Resident R Vanderlinden – Local Resident	Residents are expected to live with ugly appearance of powerlines.	[SRK] All potential socio-economic impacts, including impact on sense of place have been included in section D(2) of the BAR as well as the Socio-Economic Specialist Report included in Appendix D.
<b>Comments relating to safety concerns</b>		
R van Schalkwyk – Local Resident L Minnie – Local Resident M Elliot – Local Resident S Clegg – Local Resident T Swart – Local Resident L Pieters – Local Resident E van Wyngaardt – Local Resident H Gray – Local Resident M Reid – Local Resident K Steyn – Erstwhile Resident C Gagiano – Local Resident P Alberts – Local Resident R Vanderlinden – Local Resident	Risk and dangers associated with such wires in close proximity to residential homes.	[SRK] Potential safety-related impacts have been addressed in section D(2) of the BAR.
J Baeyens - Capeco	Powerlines poses a health risk for feature residents of Capeco development.	[SRK] Potential health-related impacts during the operational phase have been addressed in section D(2) of the BAR.
<b>Comments relating to noise pollution</b>		
R van Schalkwyk – Local Resident L Minnie – Local Resident M Elliot – Local Resident S Clegg – Local Resident T Swart – Local Resident L Pieters – Local Resident E van Wyngaardt – Local Resident H Gray – Local Resident M Reid – Local Resident K Steyn – Erstwhile Resident C Gagiano – Local Resident P Alberts – Local Resident R Vanderlinden – Local Resident	Residents are expected to live with noise associated with overhead powerlines.	[SRK] Potential noise impacts during the operational phase have been addressed in section D(2) of the BAR.
<b>Comments of a general nature</b>		
J Baeyens - Capeco	Please take into consideration the RoD on our land south of the river.	[SRK] Noted.
J Baeyens - Capeco	Please take into account the impact on erven/ units (people cannot and do not want to live directly under the lines)	[SRK] All potential socio-economic impacts, including impact on sense of place have been included in section D(2) of the BAR as well as the Socio-Economic Specialist Report included in Appendix D.

**Table 3: Comments from Interested and Affected Parties on the Post-Application Draft Basic Assessment Report (DBAR)**

Interested and/or Affected Party	Issue raised	Response (by SRK unless otherwise specified)
<b>Comments relating to the process</b>		
Department of Water and Sanitation (DWS)	According to Section 21 (c) and (i) water uses of the National Water Act 36 of 1998 the proposed activities will require water use authorisation.	[SRK] It is of our understanding that the proposed development (municipal transmission and distribution power line) is exempted from a General Authorisation (GA) in terms of Appendix D2 of the latest GA regulations (August 2016) as per Section 6(2) and therefore a water use authorisation will not be required. The relevant Section 21(c) and (i) forms will be completed and delivered to DWS for registration and the NMBM (proponent) will be made aware of the conditions set out in the latest GA regulations which will be required to be adhered to.
<b>Comments relating to design</b>		
Greyvensteins Inc. – obo – Capeco	The document refers to the installation of an underground powerline as “ <i>not feasible</i> ”. In Section A2 of the post-application draft basic assessment report the 3 options are stipulated together with the cost of installation. What has not been taken into account is the fact that there might be a fourth option which entails the installation of a part overhead part underground powerline.	[SRK] The alternatives that have been proposed as feasible alternatives by the NMBM are the alternatives that have been assessed in this BA process. In the event that the overhead powerline is authorised and NMBM are subsequently persuaded that a portion of that authorised powerline can be installed underground, then an amendment to the environmental authorisation would be required.
Marc Crocker - Capeco	Section A(2) of the Post-Application DBAR briefly explains 3 alternatives and the feasibility thereof. Capeco would like to record that “Route Alignment 2” will not be an option and be omitted from the report.	[SRK] The proponent, the NMBM, together with project engineers identified the project alternatives which are practically feasible and which have been incorporated and assessed in the basic assessment process. As mentioned in the Final Impact Statement, the impacts for both alternatives have been rated exactly the same in all instances, even though a preference for Option 1 has been indicated by the aquatic specialist. Option 1 is therefore indicated at the environmentally preferred option.
Marc Crocker - Capeco	Only considering erf 1226 and the proposed developments. A business model / agreement can be negotiated between the NMBM and Capeco to cover this shortfall of installing cables underground. Capeco would be prepared to cover this shortfall and be reimbursed through rebates on development levies (i.e. rebates on the kVA per unit payable). Capeco formally requests that SRK adds this alternative to the BAR for consideration by the NMBM.	[SRK] The alternatives that have been proposed as feasible alternatives by the NMBM are the alternatives that have been assessed in this BA process. In the event that the overhead powerline is authorised and NMBM are subsequently persuaded that a portion of that authorised powerline can be installed underground, then an amendment to the environmental authorisation would be required.  [NMBM] Building this powerline will be of benefit to the economy of the city as it is built with the aim of meeting the demand of growing new commercial loads and ensuring the reliability of supply to existing businesses and residential loads.

Interested and/or Affected Party	Issue raised	Response (by SRK unless otherwise specified)
<b>Comments relating to the economic impacts</b>		
Greyvensteins Inc. – obo – Capeco	The document refers to “medium economic impact” and low economic impact with mitigating measures on our client’s land. The entire development will have visibility of the overhead powerline and the front row of the Deansgate development will be rendered unsaleable.	[Urban-Econ] It is acknowledged that there are real concerns amongst property owners and developers that HVTLs (High-Voltage Transmission Lines) adversely affect the saleability of properties within close proximity to powerlines. However, as outlined in section 3.2.1 (pp. 19 – 23) of the Socio-Economic Impact Assessment, the prevailing academic literature on the impact of HVTL on residential property does not support the assertion that the presence of overhead powerlines will render properties “unsaleable”. Some studies (Real Property Analytics, 2007) however, do indicate that due to the presence of powerlines, the days that the property is on the market (before being sold) can increase by between 0 and 60 days. This was only observed amongst 50% of respondents in the study.  Accordingly, the “medium economic impact” is assigned based on these real perceptions. With mitigation measures, such as the notification of property owners that the likelihood of their property being unsaleable is small, the economic impact of the powerline development is reduced to “low”.
Marc Crocker - Capeco	36 units in the proposed retirement village and 52 units in the Deansgate development would have very high negative socio-economic impacts which have not been conveyed in the DBAR. These 88 units are basically situated directly adjacent to the proposed pylons. It must also be said that the units in the second and third row of both these developments’ market value would also be affected negatively.	[Urban-Econ] As part of the methodology adopted for the study a suburb approach was followed whereby any impacts were quantified at a suburb level rather than at an individual property (or development level). Impacts were subsequently assigned to each suburb based on the percentages of properties within that suburb that had a medium to high degree of visual impact of the proposed powerline (see Section 3.2.2, pp. 24 of the specialist report). The impacts on the market value of individual properties are likely to vary significantly based on a range of factors that cannot be exclusively attributed to the presence of a powerline (e.g. number of rooms, marketing efforts of the estate agent, buyer’s intangible perception of the property). Cumulative suburb values were utilised to address this problem as well as to address the fact that the proposed powerline spans several suburbs and properties and is likely to affect a significant number of properties.
Marc Crocker - Capeco	Mitigation methods related to loss in value of property does not explain how devaluation can be prevented.	[SRK] Mitigation measures given under the <i>Impact on property and land value in the immediately affected area</i> (Impact 11.3) are specifically aimed at the construction phase. Note that additional mitigation measures also relevant are listed under Impact 11.1 - <i>Negative changes to the sense of place</i> .

Interested and/or Affected Party	Issue raised	Response (by SRK unless otherwise specified)
Marc Crocker – Capeco	Our developments will be the most impacted by these pylons and the impact on 1000 residential units will be highly affected. Thus again making our developments undesirable to the end user, which will affect the economy of our city. Your client should calculate what the income would be on rates, taxes and consumption charges for 1000 new households in this area. The municipal revenue generated from these dwellings would be substantial on an annual basis and can only benefit the city.	<p>[Urban-Econ] It is acknowledged that the cumulative impact of the powerline on the proposed additional 1000 residential dwellings will be higher than the impact on existing single residential erven along the proposed powerline route.</p> <p>It is however important to note several factors identified in the Socio-Economic specialist report (see Appendix D of the BAR). Firstly, there is an estimated 75% probability that the proposed powerline will have no impact on the value of individual properties as borne out by the academic literature. Should a negative impact on property values occur, it is highly unlikely to exceed 5% (see Table 3.3, pp. 25 of the specialist report).</p> <p>Secondly, as highlighted in Section 4.3.1 (e) the benefits of the proposed powerline will help to unlock future development in the area. This will accordingly have a strong positive socio-economic impact on the broader Port Elizabeth community.</p> <p>On balance, the positive socio-economic impacts of increased electricity access to the broader community out way the potential adverse impact on properties values of the proposed 1000 residential unit development.</p> <p>[NMBM] Building this powerline will be of benefit to the economy of the city as it is built with the aim of meeting the demand of growing new commercial loads and ensuring the reliability of supply to existing businesses and residential loads. Therefore more jobs will be created and significantly reducing the unemployment rate which plays a role in surging crime rate in the city and lastly the economy will be positively affected.</p>
Marc Crocker - Capeco	Letter by marketing agent for Erf 1226, Fairview expressing concerns regarding marketability. For specific concerns please see Appendix E9 (Annexure J of letter from Capeco).	[SRK] Please see impacts regarding property values and marketability specifically addressed in Section 3.2 and Section 4.2.2 of the Socio-Economic Impact Assessment (attached as Appendix D of the BAR).
<b>Comments relating to the visual impacts</b>		
Marc Crocker - Capeco	The dwellings / units which are positioned and orientated to take advantage of the environmentally sensitive watercourse will be the most desirable from a saleable point of view. The sought after positions of these units would be eliminated by the construction of overhead pylons, not only decreasing the value of the property but Capeco would also suffer damages from loss of income by not being able to sell these units.	[Urban-Econ] It is acknowledged that there are real concerns amongst property owners and developers that HVTLs (High-Voltage Transmission Lines) adversely affect the saleability of properties within close proximity to powerlines. However, as outlined in section 3.2.1 (pp. 19 – 23) of the specialist report, the prevailing academic literature on the impact of HVTL on residential property does not support the assertion that the presence of overhead powerlines will render properties “unsaleable”. Some studies (Real Property Analytics, 2007) however, do indicate that due to the presence of powerlines, the days that the property is on the market (before being sold) can increase by between 0 and 60 days. This was only observed amongst 50% of respondents in the study.

Interested and/or Affected Party	Issue raised	Response (by SRK unless otherwise specified)
Marc Crocker - Capeco	The visual impact assessment carried out by SRK Consulting is quite vague, as a site visit was not conducted and only a desktop study was submitted. As per your Visual Analysis carried out clearly shows that the entire area over a kilometre around the proposed path of the powerlines are highly impacted by the visual impact of these power masts. Not desirable for a densely populated residential area.	[SRK] The viewshed analysis performed in the Visual Impact Opinion (as stated in section 2 of said report) illustrates the area from which the proposed powerline is likely to be visible. It does not take local undulations, existing vegetation and man-made structures into account. Therefore the proposed development might not be visible from every position within the viewshed area, as the development may be obscured by existing infrastructure, vegetation of topographical features. This study was mainly used to inform the Socio-Economic Impact Assessment which required the relevant data.
<b>Comments relating to safety concerns</b>		
Greyvensteins Inc. – obo – Capeco	The health risks associated with overhead powerlines in close proximity to residential development are very well documented; also with previous cases in South Africa, which Eskom lost. The document completely denies this.	[SRK] The statement by the IAP is incorrect. The potential impacts on health due to the close proximity of powerlines have been well researched and addressed in section D of the BAR. Some important literature was also included in Appendix G for additional reading by IAPs and stakeholders. Below is an extract from Impact 4 of the operational phase impacts from the Post-Application DBAR: <i>The proximity of residential and commercial properties to the proposed powerlines has the potential for EMF exposures. Scientific research on the effects of EMFs on public health has not demonstrated clearly the existence of a significant risk, nor has it proven the complete absence of risk. Despite the large number of studies published, several endpoints have not been rigorously examined in a sufficient number of studies. As the methodology of studies improved, the estimates of risk have become lower, making it unlikely that these studies are failing to identify a high risk. Nevertheless, a sufficient uncertainty remains as to the potential of EMF involvement in the causes of cancer. Therefore, even a small risk associated with EMF exposure could have important public health consequences.</i>



Interested and/or Affected Party	Issue raised	Response (by SRK unless otherwise specified)
Marc Crocker - Capeco	We feel that impacts indicated in the DBAR are not a realistic reflection of potential negative effects that EMF's can have and our opinion is that health and safety impacts of the overhead powerlines should be documented as significantly higher than stated. Studies are also mentioned regarding health risks associated with overhead power lines.	<p>[SRK] Impacts described and rated in the BAR and the Socio-Economic specialist study have been done considering a number of credible resources including those reports that are included in Appendix G of the BAR for background purposes. Extracts from studies quoted by the IAP does not mention the voltage of the powerlines in the various studies which makes a large difference with regards to the impact of EMF.</p> <p>The following is an extract from Impact 4 of the operational impacts in section D2 of the BAR:</p> <p><i>The International Commission for Non-Ionizing Radiation Protection (ICNIRP) specified guidelines for EMF exposure in 1998 (subsequently updated in 2010). The guidelines recommend the maximum Electric and Magnetic Fields allowable for limiting EMF exposure that will provide protection against adverse health effects. According to the updated 2010 guidelines the recommended guideline for Electric Field is 5 kV/m for general public (10 kV/m for occupational) and for Magnetic Field 200 <math>\mu</math>T (1 mT for occupational). An EMF study conducted by Eskom (please refer to Appendix G) specifies the maximum magnetic field at a 132 kV powerline servitude boundary of 15.5 m in width from the centreline as 1 <math>\mu</math>T and the maximum electric field at a servitude boundary of 15.5 m in width from the centreline as 0.5 kV/m, therefore below the stated guidelines set out by the ICNIRP in 2010. According to data from <a href="http://www.emfs.info">www.emfs.info</a>, the electric and magnetic fields experienced at 12.5 m from the centre line of the proposed alignment will still fall below the guidelines specified by the ICNIRP, therefore the potential for adverse health effects due to long-term exposure to EMF resulting from the proposed powerline is expected to be low.</i></p>
Marc Crocker - Capeco	Safety Specialist for Eskom, Lenny Babulall, stated in a 2005 publication that houses should not be built underneath powerlines as it is a risk to the health and safety of people. Our argument is that the area for the proposed powerlines crossing erf 1226 is very narrow, taking the watercourse into account. Does Eskom also apply this statement if the houses are existing structures before installation of the powerlines are implemented.	[SRK] The letter written by Lenny Babulall (on behalf of Eskom) in 2005 was aimed at people living in informal settlements, within the City of Cape Town, illegally building shacks within powerline servitudes (directly underneath overhead powerlines). The servitude widths (per transmission line voltage) as prescribed by Eskom have been allocated to ensure a safe buffer between the general public and potential impacts with overhead powerlines. No existing structures occur in the proposed powerline servitude.
Marc Crocker - Capeco	In recent years there have been many cases of the public against Eskom's installations of overhead powerlines. Ref: Residents of Midrand North in Johannesburg who won their case against Eskom.	[SRK] To our knowledge, the only case Eskom has lost is the case referenced by the IAP. In that specific case, Eskom mainly lost due to procedural errors. Information available suggests that Eskom didn't follow the correct public participation process (they notified the residents but did not allow for concerns to be raised). Also, the powerline infrastructure was constructed outside of their servitude.

Interested and/or Affected Party	Issue raised	Response (by SRK unless otherwise specified)
<b>Comments of a general nature</b>		
Greyvensteins Inc. – obo – Capeco	The document mentions “low density residential developments”. 30 – 65 units will be built per hectare right under the overhead powerline, on two sides of a stretch of 700m. Surely this cannot be construed as low density.	[SRK] The Socio-Economic Impact Assessment, under Section 2.4.1, states the following: <i>“In addition to the existing investments in the area there are also a number of planned developments for the immediate area surrounding the proposed powerline”, “Of these proposals, the two most significant are the developments on erf 1226 and erf 4033. The latter development proposes the development of ten (10) separate medium density residential clusters, a retirement village and access roads on the north-eastern part of erf 1226.”</i>
Marc Crocker - Capeco	The DBAR refers to medium to low impacts over the path of the proposed lines related to the socio-economic impacts. For the majority of the path the pylons pass single residential erven where these perceived impacts might be the case. Erf 1226, Fairview on the other hand will be a densely populated area comprising of about 1000 residential dwellings which we consider all socio-economic to be negatively high.	[Urban-Econ] It is acknowledged that the cumulative impact of the powerline on the proposed additional 1000 residential dwellings will be higher than the impact on existing single residential erven along the proposed powerline route.  It is however important to note several factors identified in the Socio-Economic specialist report (see Appendix D of the BAR). Firstly, there is an estimated 75% probability that the proposed powerline will have no impact on the value of individual properties as borne out by the academic literature. Should a negative impact on property values occur, it is highly unlikely to exceed 5% (see Table 3.3, pp. 25 of the specialist report).  Secondly, as highlighted in Section 4.3.1 (e) the benefits of the proposed powerline will help to unlock future development in the area. This will accordingly have a strong positive socio-economic impact on the broader Port Elizabeth community.  On balance, the positive socio-economic impacts of increased electricity access to the broader community outweigh the potential adverse impact on properties values of the proposed 1000 residential unit development.
Marc Crocker - Capeco	To conclude, Capeco will not permit overhead powerlines to cross over erf 1226, Fairview, which will be a densely populated residential area. We believe that the underground option is the only option for our property and that the shortfall can be negotiated between the parties positively in the best interests of the residents of this city.	[SRK] Noted. The shortfall option which you mention has not been evaluated within this Basic Assessment Report. This does not preclude Capeco from further discussions with the NMBM with regard to this alternative which will have to be handled as an amendment should the current proposal be authorised.

**Table 2: Summary Impact Rating Table**

IMPACT	CONSTRUCTION				OPERATION			
	WITHOUT MITIGATION		WITH MITIGATION		WITHOUT MITIGATION		WITH MITIGATION	
Impacts on Biodiversity 1: Vegetation Clearance	Medium	- ve	Medium	- ve	N/A		N/A	
Impacts on Biodiversity 2: Erosion	Low	- ve	Insignificant	- ve	N/A		N/A	
Impacts on Biodiversity 3: Spread of Alien Invasive Species	Low	- ve	Insignificant	- ve	N/A		N/A	
Impacts on Traffic	Very Low	- ve	Very Low	- ve	N/A		N/A	
Impacts on Wildlife	Very Low	- ve	Insignificant	- ve	N/A		N/A	
Noise Impacts	Very Low	- ve	Very Low	- ve	Very Low	- ve	Very Low	- ve
Impacts on Existing Infrastructure and Private Property	Very Low	- ve	Insignificant	- ve	N/A		N/A	
Aquatic Impact 1: Changes to Hydrological Regime and increased potential for erosion	Low	- ve	Insignificant	- ve	N/A		N/A	
Aquatic Impact 2: Impact of Changes to Water Quality	Very Low	- ve	Insignificant	- ve	N/A		N/A	
Aquatic Impact 3: Loss of Wetland Vegetation / Aquatic Habitat	Low	- ve	Insignificant	- ve	N/A		N/A	
Impacts on Archaeological Resources	Very Low	- ve	Insignificant	- ve	N/A		N/A	
Impacts on Palaeontological Resources	Very Low	- ve	Insignificant	- ve	N/A		N/A	
Impacts on Air Quality	Very Low	- ve	Very Low	- ve	N/A		N/A	
Waste Management	Low	- ve	Insignificant	- ve	N/A		N/A	
Socio-economic Impact 1: Negative Changes to Sense of Place	Medium	- ve	Medium	- ve	Medium	- ve	Medium	- ve
Socio-economic Impact 2: Temporary increase in social conflicts associated with influx of people	Medium	- ve	Low	- ve	N/A		N/A	
Socio-economic Impact 3: Impact on property and land value in the immediately affected area	Medium	- ve	Low	- ve	N/A		N/A	
Socio-economic Impact 4: Temporary stimulation of national and local economy	High	+ ve	High	+ ve	N/A		N/A	
Socio-economic Impact 5: Temporary increase in employment in the national and local economies	High	+ ve	High	+ ve	N/A		N/A	
Socio-economic Impact 6: Temporary increase in household earnings	Medium	+ ve	Medium	+ ve	N/A		N/A	
Socio-economic Impact 7: Temporary increase in government revenue	Medium	+ ve	Medium	+ ve	N/A		N/A	
Socio-economic Impact 8: Sustainable increase in production and GDP nationally and locally	N/A		N/A		Medium	+ ve	Medium	+ ve
Socio-economic Impact 9: Creation of sustainable employment positions nationally and locally	N/A		N/A		Medium	+ ve	Medium	+ ve
Socio-economic Impact 10: Improved standards of living for benefiting household	N/A		N/A		Medium	+ ve	Medium	+ ve
Socio-economic Impact 11: Sustainable increase in national and local government revenue	N/A		N/A		Medium	+ ve	Medium	+ ve
Socio-economic Impact 12: Provision of electricity for future development	N/A		N/A		Medium	+ ve	Medium	+ ve
Impacts on Aquatic Resources (Cumulative)	Insignificant	- ve	Insignificant	- ve	N/A		N/A	
Impacts on Avifauna	N/A		N/A		Low	- ve	Very Low	- ve
EMF (Electro-Magnetic Field)	N/A		N/A		Low	- ve	Low	- ve
Fire (Indirect)	N/A		N/A		Insignificant	- ve	Insignificant	- ve





Figure 2: Site Locality Plan