

**SOCIAL ASSESSMENT
FOR
(DRAFT) SCOPING REPORT
UYEKRAAL WIND ENERGY FACILITY
(NEAR VREDENBURG)**

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Prepared for

SAVANNAH ENVIRONMENTAL (Pty) Ltd

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EXECUTIVE SUMMARY

Creative-Renewable-Energy-Solutions (Pty) Ltd (CRENERSOL) is proposing the establishment of a Wind Energy Facility (WEF), consisting of up to 22 turbines and associated infrastructure, on a site located approximately 7km east and 6 km south-east of the towns of Saldanha and Vredenburg respectively in the West Coast region of the Western Cape Province. The site is comprised of two contiguous cadastral portions, viz. Portion 4 of Farm Langeberg 187, and Portion 1 of Farm Uyekraal 189. The proposed site is approximately 541 ha in extent, and is located just to the west of the R27 West Coast Road.

Tony Barbour Environmental Consultants were appointed by Savannah Environmental to undertake a specialist Social Impact Assessment (SIA) as part of the EIA process. This report contains the findings of the initial scoping level social assessment. The scoping study was based on a review of desktop sources only. These included the development proposal, key policy documents, as well as contextual and demographic sources such as the 2001 Census. The scoping level assessment is also informed by the authors experience with SIA's for other wind energy developments in the West Coast region.

The study area is located in the Saldanha Bay Local Municipality (SBLM). The relevant portion of the SBLM has been identified as a major provincial growth node (Saldanha-Vredenburg development corridor). A number of major industrial (Saldanha Steel mills, Exxaro/ Namakwa Sands smelter) land uses are located in close proximity to the Uyekraal site. The site is also located in close proximity to the Oryx railway line as well as the R27 West Coast Road and the R45.

Census 2001 data for the study area communities (Saldanha, Langebaan and Vredenburg) indicated comparable profiles for Saldanha and Vredenburg. The Coloured population group was dominant in these two communities, but that the Black population group had also become firmly established in this traditionally Coloured and White region. Functional illiteracy for the two relevant communities was 21% (Saldanha) and 22% (Vredenburg). Unemployment rates were 17.5% and 19% respectively, but are assumed to be somewhat higher at present due to the declining fortunes of the fisheries sector, economically motivated in-migration, and the downturn in the global economy. Census 2001 indicated that a significant fraction of households were living below the minimum subsistence level in both communities, namely 43% in Saldanha and 40% in Vredenburg. The manufacturing subsector was the most significant provider of employment opportunities, providing respectively 33.5% (Saldanha) and 21% (Vredenburg) of opportunities.

Langebaan was anomalous with regard to all the above indicators. Consistent with its role as residential destination (retirement and lifestyle-driven), its population was largely White (51%), functional illiteracy levels approximately half (11%) of that of the other two study area communities, and its unemployment rate a comparatively low 4%. Income levels were generally higher than for Saldanha and Vredenburg, and the poverty rate less than half (18.5%). The Services (29%) and Wholesale and Retail Trade (21%) subsectors were the most significant providers of employment in Langebaan.

The investigation and assessment of social impacts during the EIA phase will be guided by the Guidelines for specialist SIA input into EIAs adopted by DEA&DP in the Western Cape. This approach will include:

- Identification of key interested and affected parties;
- Meetings and interviews with interested and affected parties;
- Identification and assessment of key social issues based on feedback from key interested and affected parties.
- Recommendations regarding mitigation/optimization and management measures to be implemented.

The key conclusions of the Scoping level study are the following:

- The establishment of wind energy facilities are supported at national and provincial levels by policy and planning documents;
- The proposed WEF appears to be compatible with the economic development vision of the SBLM;
- The potential positive impacts associated with the construction phase relate to the creation of employment and skills development opportunities. The potential negative impacts are linked to the presence of construction workers on the site and in the area, the impact on farming activities and crime levels;
- The potential positive impacts associated with the operational phase relate to the creation of employment opportunities, the promotion of clean, renewable energy. The potential negative impacts are linked to the impact on the rural sense of place and scenic integrity of the landscape. These impacts can in turn impact on the tourism sector in the area.

ACRONYMS

CRENERSOL	Creative-Renewable-Energy-Solutions (Pty) Ltd
DEA&DP	Department of Environmental Affairs and Development Planning (Western Cape)
DWEA	Department of Water and Environmental Affairs (National)
EIA	Environmental Impact Assessment
IDP	Integrated Development Plan
IPP	Independent Power Producer
kV	Kilovolts
LED	Local Economic Development
LM	Local Municipality
Mtoe	Million tonnes of oil equivalent
MW	Megawatt
PGWC	Provincial Government Western Cape
SBLM	Saldanha Bay Local Municipality
SDF	Spatial Development Framework
SIA	Social Impact Assessment
WCDM	West Coast District Municipality
WEF	Wind Energy Facility

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SECTION 1: INTRODUCTION

1.1 INTRODUCTION

Savannah Environmental (Pty) Ltd (hereafter referred to as Savannah) were appointed by Creative-Renewable-Energy-Solutions (Pty) Ltd (hereafter CRENERSOL) as the lead consultants to manage the Environmental Impact Assessment (EIA) process for the establishment of a proposed Wind Energy Facility (WEF) and associated infrastructure, known as the Uyekraal WEF, on a site located south-east of the town of Vredenburg in the West Coast region of the Western Cape Province (Figure 1.1).

Tony Barbour was appointed by Savannah to undertake a specialist Social Impact Assessment (SIA) as part of the EIA process. The terms of reference for the study include a scoping level assessment to identify potential key social issues that would need to be addressed as part of the EIA. This report contains the findings of the initial scoping level social assessment undertaken as part of the EIA process.

1.2 TERMS OF REFERENCE

The terms of reference for the Scoping Report Assessment require:

- A description of the environment that may be affected by the activity and the manner in which the environment may be affected by the proposed facility;
- A description of the potential social issues associated with the proposed facility;
- A description of the approach proposed for assessing the potentially significant issues that will need to be addressed by the SIA study during the EIA phase.

1.3 PROJECT DESCRIPTION

CRENERSOL has identified the potential to establish a new WEF on the Uyekraal site. The site is located in a rural area, approximately 6 km south-east of the town of Vredenburg in the Western Cape Province of South Africa. The site is comprised of two contiguous cadastral units, namely:

- Farm Langeberg 187/4;
- Farm Uyekraal 189/1.

These two cadastral portions form part of larger parent farms (see Figure 1.1).

An area of approximately 541 ha is being considered for the establishment of up to 22 wind turbines and associated infrastructure. The exact number and placement of turbines will be investigated in more detail during the EIA phase of the study. The energy will be fed into the Eskom grid. The project is therefore an Independent Power Producer (IPP) project.

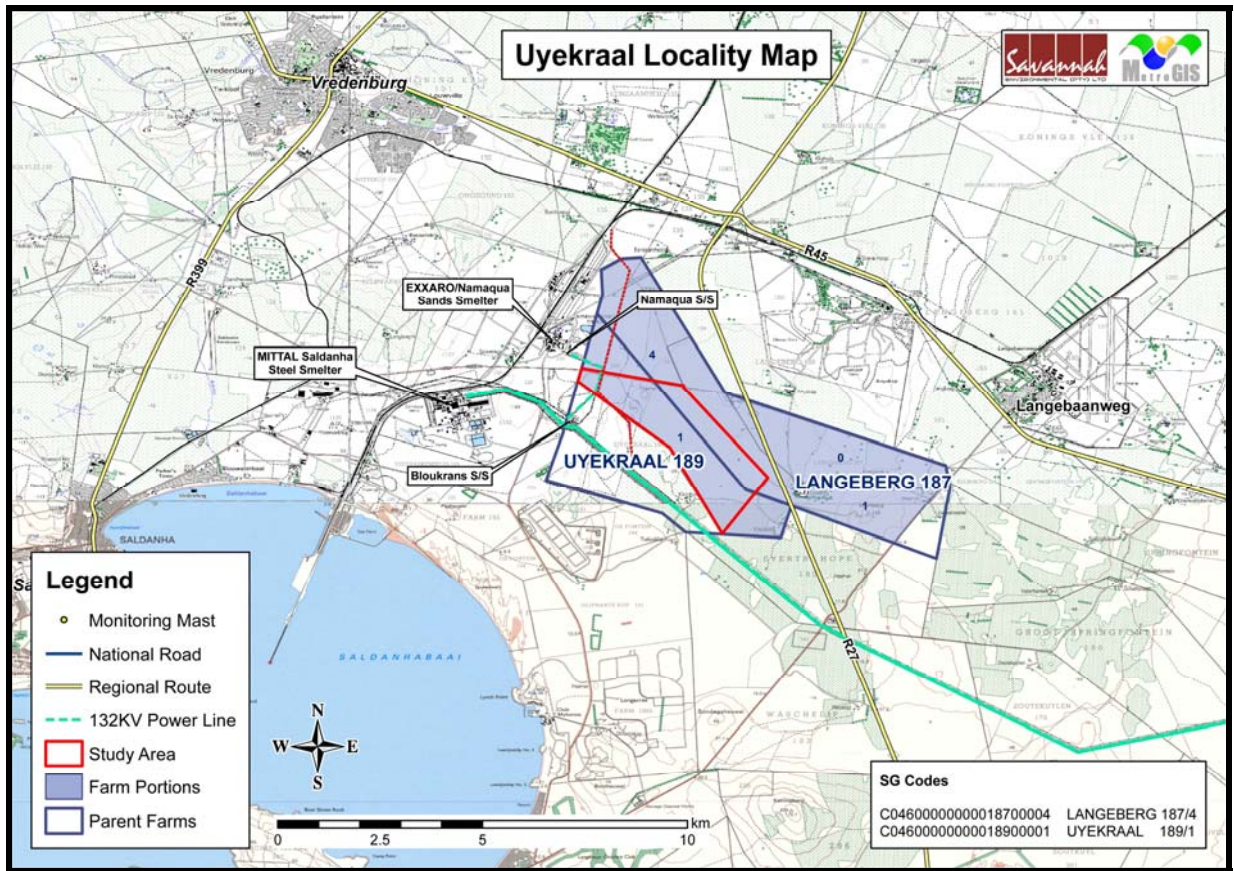


Figure 1.1. Location of the proposed CRENERSOL Uyekraal WEF site

A WEF consists of multiple wind turbines which are used to capture the kinetic energy of the wind and generate electricity. This captured kinetic energy is used to drive a generator located within the wind turbine and the energy is subsequently converted into electrical energy. A typical wind turbine consists of four primary components (Figure 1.2):

- The **foundation unit** upon which the turbine is anchored to the ground;
- The **tower** which is typically between 80m and 100m in height. The tower is a hollow structure allowing access to the nacelle. The height of the tower is a key factor in determining the amount of electricity a turbine can generate. The tower houses the transformer which converts the electricity to the correct voltage for transmission into the grid;
- The **nacelle** (generator/turbine housing). The nacelle houses the gearbox and generator, as well as a wind sensor to identify wind direction. The nacelle turns automatically, ensuring the blades always face into the wind to maximise the amount of electricity generated.
- The **rotor** which is comprised of three rotor blades (each up to 60 m in length). The rotor blades use the latest advances in aeronautical engineering materials science to maximise efficiency. The greater the number of turns of the rotor, the more electricity is produced.

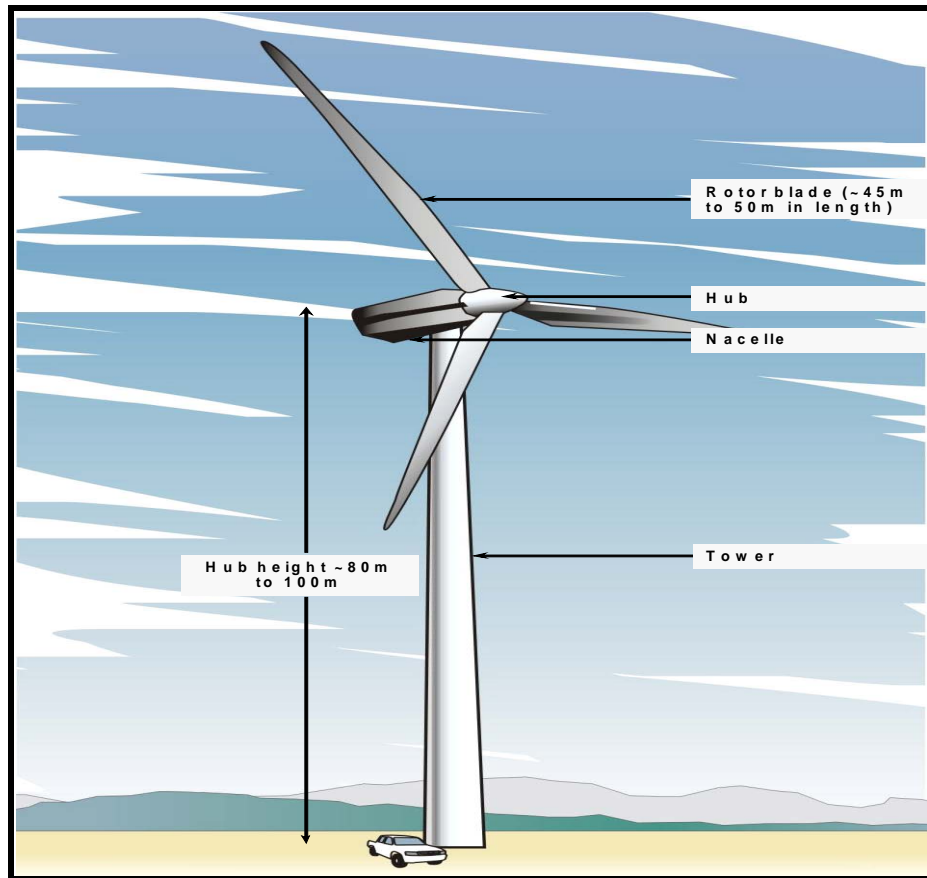


Figure 1.2: Typical turbine structure and components

The amount of energy a turbine can harness is dependent on the wind velocity and the length of the rotor blades. Wind turbines start generating power at wind speeds of between 10-15 km/h, with speeds between 45-60 km/hour required for full power operation. In a situation where wind speeds are excessive, the turbine automatically shuts down to prevent damage.

A turbine is designed to operate continuously, unattended and with low maintenance for more than 20 years, that is >120 000 hours of operation. Once operating, a WEF can be monitored and controlled remotely, with a mobile team used for periodic maintenance, when required. A facility consisting of up to 22 turbines would require approximately 12 months to construct and commission, and requires the expertise of skilled staff.

The basic infrastructure associated with proposed Uyekraal WEF would include:

- Access roads to the site from the main road/s within the area – most likely from the R45 (Vredenburg-Langebaanweg);
- Internal access roads between the wind turbines;
- Cabling between the turbines, to be laid underground where practical;
- Maintenance/ control buildings;

- A 132 kV substation. The most suitable location for the substation will be finalized during the EIA phase;
- An overhead 132 kV distribution line that will link the WEF to the Eskom grid. The proposed site is currently traversed by a 132 kV line providing power to the Exxaro/ Namakwa Sands smelter located just to the north-west of the site, and it is likely that the existing lines or corridor will be used.

1.4 PROJECT LOCATION AND SURROUNDING LAND USES

The Uyekraal site is located in a rural area, approximately 7 km east and 6 km south-east of the harbour town of Saldanha and Vredenburg respectively. The coastal settlement of Langebaan is located approximately 5.5 km to the south of the site. Vredenburg is the largest town and seat of the Saldanha Bay Local Municipality (SBLM). Vredenburg has an assessed high economic growth potential and serves as regional commercial and services centre. Vredenburg, Saldanha and Langebaan form part of one of the major growth axes in the Western Cape, namely the Saldanha-Vredenburg development corridor/ node. The study area site and relevant towns are located in a region traditionally known as the West Coast.

Saldanha is located along the western edge of Saldanha Bay, one of the best natural harbours in the world, and the deepest and safest harbour in South Africa. Until a naval base was established in 1944, Saldanha was essentially a fishing town. Despite the decline in fortunes of the West Coast fishing industry over the past decade or two, Saldanha remains an important fisheries and fish processing centre. More recently, a number of aquaculture operations have been established in the Bay. During the 1970's, the harbour was developed to accommodate the export of iron ore and manganese from the Northern Cape (Sishen). Saldanha harbour has been considerably expanded since then, and is currently the largest harbour on the west coast of the African continent. The harbour is linked to Sishen by means of a dedicated ore railway line, known as the Sishen-Saldanha line. In addition, the harbour also handles the import of crude oil. There are also a number of large industrial sites located in close proximity to the site. These include the Saldanha Steel Mill and Namakwa Sands Smelter located approximately 2 km and 1km west of the western boundary of the Uyekraal site. The Saldanha Steel Mill was commissioned in 1998 and currently employs in the region of 800 employment opportunities and produces approximately 1.25 million tonnes of steel per year.

Langebaan is located on the southern edge of Saldanha Bay. The Langebaan Lagoon, a Ramsar site, is situated south of Langebaan, and separates the town from the Langebaan peninsula. Langebaan's location at the mouth of the lagoon is definitive of its sense of place. The lagoon is also the main asset of Langebaan's tourism-based economy, and one of the key contributing factors responsible for Langebaan's robust property market. Langebaan's sense of place is also enhanced by its location relative to the West Coast National Park.

Langebaanweg is a small settlement located along the Cape Town-Saldanha railway line. The settlement is mainly associated with the South African Air Force base (AFB Langebaanweg) located adjacent to the east of the town, approximately 6.5 km east of the Uyekraal site. The AFB Langebaanweg accommodates the military flying school facility (Central Flying School), as well as an SAAF mechanical servicing unit (2ASU), and 526 protection squadron. Large phosphate mines (Chemfos) are located to the north-west of the town, approximately halfway between the built edge of

Langebaanweg and the proposed Uyekraal site. Fossils were discovered here during mining operations during the 1950's. Subsequently, the site has become an internationally recognised fossil site. As a result 14 ha of the mine has been declared as a National Heritage Site (Langebaanweg Palaeontological Site) and currently forms part of the greater West Coast Fossil Park.

Land located inland has traditionally been used for agricultural purposes (mainly stock and wheat). Due to generally sandy soils and relatively low rainfall, the agricultural potential of the area is generally limited.

A number of other WEF projects are currently being proposed in the Vredenburg area, mainly towards the north and east of the town. These include the proposed Nootgedacht, Britannia Bay and West Coast One WEFs.

As indicated in Figure 1.1, the study area is located in close proximity to both the R27 West Coast Road and the R45. The R27 links Cape Town in the south to Velddrif in the north and is an important tourist route. The R45 links Paternoster in the west to the N7 in the east. The towns of Vredenburg, Langebaanweg and Hopefield gain primary access off the R45. Main access to Saldanha is via the R399 from Vredenburg. Primary access to Langebaan is via Oosterwal Road off the R27. A network of smaller roads provides access to Saldanha Steel and the Exxaro/Namakwa Sand smelter off the R27, R45 and R399.

1.5 ASSUMPTIONS AND LIMITATIONS

1.5.1 Assumptions

Identification of area for the wind energy facility

The identification of the proposed site was informed by technical information relating to local climatic conditions in the area, specifically wind conditions.

Strategic importance of the project

The strategic importance of promoting wind energy is supported by the national and provincial energy policies.

Technical suitability

It is assumed that the development site identified by CRENERSOL represents a technically suitable site for the establishment of a wind energy facility.

Consultation with affected communities

At this stage in the process there has been no interaction by the SIA consultants with communities and other affected parties within the study area. However, the authors have worked on other wind energy projects (within the West Coast as well as other areas). It is assumed that issues identified on those projects are likely to be similar to those for the proposed Uyekraal WEF. Detailed consultation will be undertaken during the assessment stage of the SIA.

1.5.2 Limitations

Demographic data

The demographic data used in the study is largely based on the findings of the 2001 Census¹, or on sources, which based projections on the Census 2001 data. While this data does provide useful information on the demographic profile of the affected area, the actual data is dated and should be treated with care.

1.6 APPROACH TO STUDY

The approach to the study is based on the Western Cape Department of Environmental Affairs and Development (DEA&DP) Planning Guidelines for Social Impact Assessment. These Guidelines have been endorsed by the national Department of Water and Environmental Affairs. The scoping level study involved:

- A review of demographic data from the 2001 Census Survey and other available sources;
- A review of relevant planning and policy frameworks for the WCDM;
- A review of information from similar studies;
- A literature review of social issues associated with wind energy facilities.

The identification of potential social issues associated with the proposed WEF is based on a review of relevant documentation, experience with similar projects, and some familiarity with the study area. Annexe 1 contains a list of the secondary information reviewed.

1.7 REPORT STRUCTURE

The report is divided into three Sections, namely:

- Section 1: Introduction;
- Section 2: Policy and planning environment;
- Section 3: Overview of the study area;
- Section 4: Description of the key social issues that need to be assessed during the EIA phase. This section also includes information that will be required from the developer to facilitate assessment.

¹ The last comprehensive national census was conducted in 2001. Census 2001 provided demographic and socio-economic data from National to Municipal Ward level. An interim Community Survey (sample based) was undertaken in 2007, but provided information only on provincial and district municipal levels. The next comprehensive national census is planned for 2011.

SECTION 2: POLICY AND PLANNING ENVIRONMENT

2.1 INTRODUCTION

Legislation and policies reflect societal norms and values. The legislative and policy context therefore plays an important role in identifying and assessing the potential social impacts associated with a proposed development. In this regard a key component of the SIA process is to assess the proposed development in terms of its fit with key planning and policy documents. As such, if the findings of the study indicate that the proposed development in its current format does not conform to the spatial principles and guidelines contained in the relevant legislation and planning documents, and there are no significant or unique opportunities created by the development, the development cannot be supported.

This section provides an overview of the most significant policy documents of relevance to the proposed Uyekraal WEF, namely:

- The National Energy Act (2008);
- The White Paper on Renewable Energy (2003);
- White Paper on Sustainable Energy for the Western Cape (Final Draft, 2008);
- Strategic Initiative to Introduce Commercial Land Based Wind Energy Development to the Western Cape. Towards a Regional Methodology for Wind Energy Site Selection (2006);
- The Western Cape Provincial Spatial Development Framework (2009);
- Saldanha Bay Municipality Integrated Development Plan (2006-2011);
- Saldanha Bay Municipality Local Economic Development (LED) Strategy (2005).

2.2 NATIONAL LEVEL ENERGY POLICY

2.2.1 National Energy Act (Act 34 of 2008)

The National Energy Act was promulgated in 2008. One of the objectives of the Act was to promote diversity in energy supply and its sources. In this regard, the objectives of the Act, as stated in the preamble, makes direct reference to facilitating the “increased generation and consumption renewable resources”.

2.2.2 The National White Paper on Renewable Energy (2003)

This White Paper on Renewable Energy (further referred to as the White Paper) supplements the *White Paper on Energy Policy* (1998), which recognized the significant medium and long-term potential of renewable energy. The 2003 White Paper sets out Government’s vision, policy principles, strategic goals and objectives for promoting and implementing renewable energy in South Africa.

As signatory to the Kyoto Protocol, Government is determined to make good the country’s commitment to reducing greenhouse gas emissions. To this purpose, Government has committed itself to the development of a framework in which a national renewable energy framework can be established and operate.

Apart from the reduction of greenhouse gas emissions, the promotion of renewable energy sources is aimed at ensuring energy security through the diversification of supply (in this regard, also refer to the objectives of the National Energy Act).

Government's long-term goal is the establishment of a renewable energy industry producing modern energy carriers that will offer in future years a sustainable, fully non-subsidized alternative to fossil fuels.

The medium-term (10-year) target set in the White Paper is:

10 000 GWh (0.8 Mtoe) renewable energy contribution to final energy consumption by 2013, to be produced mainly from biomass, wind, solar and small-scale hydro. The renewable energy is to be utilized for power generation and non-electric technologies such as solar water heating and bio-fuels. This is approximately 4% (1667 MW) of the projected electricity demand for 2013 (41539 MW) (Executive Summary, ix).

2.3 PROVINCIAL LEVEL ENERGY AND SPATIAL POLICY

2.3.1 White Paper on Sustainable Energy for the Western Cape (Final Draft, 2008)

In a nutshell, the purpose of the White Paper on Sustainable Energy (further referred to as the "White Paper" in this subsection) is to create an enabling policy environment in the Western Cape in order to promote and facilitate energy generation from renewable sources, as well as efficient energy use technologies and initiatives. This objective forms an integrated part of the Province's overarching energy policy objectives, namely:

- To ensure medium-term energy security, sufficient in order to support economic growth;
- To reduce energy poverty;
- To increase the efficient use of energy;
- To limit the greenhouse emissions footprint (associated with the use of fossil fuels);
- To decrease reliance on finite fossil fuel resources and associated unpredictable commodity markets.

The White Paper forms part of the Provincial Government of the Western Cape's (PGWC) strategy to aimed at removing a number of barriers (e.g. energy pricing, legal, institutional, low levels of investment confidence, insufficient knowledge) currently frustrating the province's energy goals by preventing the adoption and commercialization of clean energy (including electricity generation from renewable sources such as wind and solar) technologies and initiatives.

The White Paper notes that wind energy represents a commercially viable option in the province, and proposes that special focus should be given to this subsector, and to associated technologies in particular, in order to achieve critical mass of installation, and thus drive down establishment costs and ensure permanent employment opportunities.

The identified goals and targets of the White Paper are briefly discussed below:

Goals

Six goals have been identified in order to realise to this vision. These goals are grouped under economic, environmental and social sustainability categories. These goals are listed below, and each briefly discussed:

- Goal 1: alleviate energy poverty (Social sustainability).
- Goal 2: Improve the health of the nation (Social sustainability).
Renewable energy sources do not emit harmful substances such as smoke, or oxides of sulphur nitrogen into the atmosphere.
- Goal 3: Reduce harmful emissions (Environmental sustainability).
Improved energy efficiency and increased use of renewable energy are cost effective methods to reduce Greenhouse Gas emissions, thereby combating climate change, and at the same time opening the door to utilizing additional finance mechanisms to reduce CO2 emissions.
- Goal 4: Reduce negative footprints in our environment (Environmental sustainability).
The negative impact of using fossil fuels includes health impacts, ground water pollution and air pollution.
- Goal 5: Enhance energy security (Economic sustainability)
It is essential that the Western Cape increases its resilience against external energy supply disruptions and the massive price fluctuations caused by national or international decisions with regard to energy commodities (coal, oil).
- Goal 6: Improve economic competitiveness (Economic sustainability)
It has been demonstrated internationally that one of the ways to improve economic competitiveness is by improving industrial and commercial energy efficiency.

Targets

The PGWC agreed to targets for electricity from renewable sources and for energy efficiency to be achieved by 2014. The purpose of the White Paper is to quantify the relevant targets, and further to provide an incremental implementation plan until 2014. In this regard, four targets have been identified. Of these, two are of direct relevance to the proposed Exxaro WEF:

- Target for electricity generated from renewable sources:

15% of the electricity consumed in the Western Cape will come from renewable energy sources in 2014, measured against the 2006 provincial electricity consumption (White Paper, 21)

In this regard, the White Paper notes that in order to reach this target, it will be necessary for the PGWC to ensure that the environment to establish and generate renewable energy is such that a minimum of 15% of the electricity can be produced, and must be consumed, from renewable sources.

- Target for reducing carbon emissions:

The carbon emissions are reduced by 10% by 2014 measured against the 2000 emission levels (p. 23).

In this regard, the White Paper notes that achieving this target largely depends on achieving the renewables target.

Applicability

The White Paper is currently in a Final Draft stage. The finalized document will be submitted to the Provincial Cabinet for approval, and will then provide the formal policy basis on which the drafting of the envisaged Western Cape Sustainable Energy Facilitation Bill will be based. The White Paper is based on a 5-year horizon (viz. 2010 to 2014), and expires in 2014. A mid-term review is envisaged at the end of 2011.

2.3.2 Western Cape Regional Methodology for Wind Energy Site Selection (2006)

The objective of the study commissioned by the DEA&DP was to develop and establish a policy on the implementation of a methodology to be used for the identification of areas suitable for the establishment of wind energy developments. This study was prepared as an internal document to feed into the Western Cape Sustainable Energy Strategy and Action Plan.

The document focuses specifically on the siting of wind energy facilities. Some of the key findings and recommendations that have a bearing on the study are briefly summarized below.

Cumulative Impact Issues

The experience in Europe is that the very high cumulative (visual) impacts have resulted from the siting of numerous small WEF schemes in relatively close proximity to each other (only 2.5km in Denmark).

As a result the document recommends that:

- Large installations should be located extremely far apart (30 – 50km), and;
- Smaller installations should be encouraged in urban/ brownfield areas.

In this regard, it should be noted that a number of other WEF projects are currently being proposed in the Vredenburg area, mainly towards the north and east of the town. These include the proposed Nooitgedacht, Britannia Bay and West Coast One WEFs. Potential cumulative impacts on sense of place will be investigated during the EIA phase.

Recommended Disturbed Landscape Focus

The document recommends focusing on existing disturbed rural landscapes, and in particular, those rural landscapes that have already been “vertically compromised” by the location, for example, of transmission lines, railway lines, and all phone towers. In this regard, it should be noted that the Uyekraal site is located in relatively close proximity to existing industrial (Saldanha Steel mill and Exxaro/ Namakwa Sands smelter), mining (phosphate mines near Langebanweg) and service industrial (132 kV power lines to south and across western portion of site; Oryx railway line to west of site) land uses.

Landscape Assessment: Subjective/ Qualitative

The role and value of public participation in perceptual based studies to determine landscape character and sensitivity to (wind turbines) has been highly questionable in overseas experience. It is accordingly recommended that a very high value should be placed on professional judgement from practitioners at the local level when assessing landscape values.

Protecting Rural Landscape Values (put after "Urban Emphasis)

Traditional emphasis (in Europe) on views from residential locations has resulted in effectively pushing WEF schemes into more "remote", less inhabited rural locations. Within the Western Cape, such emphasis would need to be carefully balanced against the touristic and lifestyle residential values afforded by undeveloped landscapes. With regard to the proposed Uyekraal site, it should be noted that the site is located in close proximity to the touristically important R27. However, as noted above, the landscape context is not pristine, and currently accommodates a number of industrial and other non-agricultural/ non-conservation land uses.

Site Specific Aesthetic Considerations

The document lists the following site-specific recommendations:

Layout

- Stick to linear, non-organic layouts;
- Straight lines of turbines preferred;
- Consistent hub height (all turbines on same contour level).

Turbines

- Same machines to be used on each project;
- The 1/3rd proportion in turbine form is preferred. (Less than 10% variance between hub height (tower length) and blade diameter).

Colour

- Turbine tower: off white to light grey non-reflective, matt paint;
- Blades: same colour as above (avoid red tips);
- Warning lights on turbine: only in exceptional circumstances (where required by authorities).

The Western Cape Provincial Government is currently in the process of considering applicable zoning for solar and wind energy facilities, but as far as could be established, no directives have been finalized in this regard yet.

2.3.3 Western Cape Provincial Spatial Development Plan (2009)

The Western Cape Provincial Spatial Development Framework (PSDF) has statutory status. The overarching purpose of the PSDF is to provide strategic guidance with regard to the spatial implementation to the goal of environmentally sustainable development within the prevailing land use context of the Western Cape. The PSDF is a long-term planning instrument, which is to be reviewed every five years. The next revision is due in 2014.

Land use orientated objectives and developments are set out in Volume 2 ("Directives and Guidelines Report") of the PSDF. Nine key objectives and associated policy directives are contained in the Report. The following are of specific relevance to the proposed WEF:

Objective 5: Conserve the sense of place of important landscapes

The PSDF notes the vital importance of tourism to the Provincial economy. The PSDF therefore stipulates that, with regard to the siting and design of future power lines and other visibly substantial infrastructural development, the relevant provincial guidelines should be followed, and proposals should include provision for environmental, visual and heritage impact assessments.

Two policy directives are of direct relevance to the proposed WEF:

Transmission lines and wind farms

HR26 (...) transmission lines (...) should be aligned along existing and proposed transport corridors rather than along point to point cross-country routes. (Mandatory directive)

HR27 Wind farms should be located where they will cause least visual impact, taking into consideration the viability of the project. (Guiding directive)

The PSDF notes that the current practice of following a shortest-distance approach to the siting of power lines raises issues of visual blight, unviable-shaped land parcels, the need for access roads and the degradation of cultural landscapes. The PSDF therefore stipulates that, where possible, future power lines should be aligned within existing and proposed combined road and/or rail linkage corridors.

As noted above, the Uyekraal site is located in relatively close proximity to existing industrial (Saldanha Steel mill and Exxaro/ Namakwa Sands smelter), mining (phosphate mines near Langebanweg) and service industrial (132 kV power lines to south and across western portion of site; Oryx railway line to west of site) land uses.

Objective 9: Minimize Consumption of Scarce Environmental Resources

In line with national government's Climate Change Response Strategy, the PSDF makes provisions for a strategy based on demand management and the development of renewable resources. The PSDF proposes that 25% of the Province's energy generation should consist of renewables by 2020. The PSDF notes that, if carefully sited and designed, WEFs need not necessarily have a negative visual impact.

2.4 MUNICIPAL LEVEL DEVELOPMENTAL AND SPATIAL POLICY

2.4.1 Saldanha Bay Municipality Integrated Development Plan (2006-2011)

The Saldanha Bay Municipality IDP identifies 9 key thrust areas within the context of Local Economic Development (LED) for the area. The thrusts are defined as "planned actions aimed at creating an impetus and a critical mass in the local economic environment in order to generate momentum in the economy". These thrusts aim at utilizing existing economic strengths and opportunities by transferring these into workable programmes and projects. These programmes and projects tend to reduce

the current threats, and strengthen the weaknesses in the local economic environment. The thrusts that are relevant to the proposed wind energy facility include:

- Thrust 2: Industrial development;
- Thrust 3: SMME development;
- Thrust 4: Tourism and cultural development;
- Thrust 5: Development of local economic activities;
- Thrust 6: Environmental sustainability;
- Thrust 7: Renewable energy development.

Thrust 7, Renewable energy development is of specific relevance to the proposed wind energy facility. Thrust 7 is however not further described in the IDP document.

The IDP also notes that the local economy is in the midst of a major diversification, from being dependent on fishing and agriculture, to including manufacturing and tourism as major economic sectors. This diversification holds the potential for major economic growth, but may also lead to social displacement. Consequently, the social cohesion of the municipality may be threatened as a result of locals not being able to engage with opportunities within emerging economic sectors due to a lack of skills, and migrants to the area not having the social network of family and friends on whom to rely.

2.4.2 Saldanha Bay Municipality LED Strategy (2005)

This Local Economic Development (LED) Strategy document was prepared for the Saldanha Bay LM in 2005 by Urban Econ. The following summary is taken from the Executive Summary of the document:

The purpose of this study was to investigate the options and opportunities available to the local Municipality, so as to broaden the local economic base of the area in order to address the creation of employment opportunities and the resultant spin-off effects throughout the local economy. The Saldanha Bay Municipality (SBM) is faced with a development problem in that the Municipal area jurisdiction is characterised by a mix of urban and rural economies, ranging from relatively strong economic performances to relatively isolated rural settlements with high levels of poverty.

The following key developmental issues of relevance to the WEF development proposal were identified:

- "From a regional development perspective, the economy is characterised by a few strong sectors, due to the concentration of leading activities such as agricultural production and manufacturing activities, services and utilities. These are significant sources of employment as well as activities with strong forward and backward linkages, although not all of these are realised locally;
- "Spatially it is evident that the area is characterised by a number of towns, villages and settlements, which places a strain on cost-effective infrastructure and service provision. The economic implications are, amongst others, high levels of unemployment, low levels of disposable income, widespread poverty, etc;
- "The labour force can generally be interpreted as inadequate for sustainable economic development in terms of skills levels, etc. A skills scoping is therefore needed to understand the availability of skills, training needs and requirements from employers;

- “Agriculture and fishing as an important economic production sector and source of employment, commercially as well as a source of subsistence income, needs to be evaluated as a priority sector;
- “The area has specific tourism development potential. Specific examples include the coastal villages, the Langebaan wetlands area and National Park, Nature Reserve, wild flowers and other attractions. These opportunities are not fully exploited and need to be unlocked and appropriately focused on niche markets for full benefit for local communities”.

The LED document explicitly discusses the development of renewable energy resources as a viable environmentally sustainable economic sector within the Saldanha Bay LM area (Chapter 7: Economic Development Framework). The following extract is of particular relevance:

Renewable energy is of high priority in South Africa. In the Saldanha Bay Municipal area, most winds occur during May to September, and November to February. Strong winds of over 20km/h are common in this area (...). This illustrates that the Saldanha Bay Municipal area could be the ideal place to implement wind energy (renewable energy), due to the constant occurrence of wind through the year. A feasibility study should be done in order to take this concept further. The Saldanha Bay Municipality is already involved in various activities, regarding renewable energy, and is also part of the Provincial Task Team that is looking into this issue.

SECTION 3: OVERVIEW OF THE STUDY AREA

3.1 INTRODUCTION

Section 3 provides an overview of the study area with regard to:

- The relevant administrative context;
- The municipal-level socio-economic context;
- The local-level socio-economic environment.

3.2 ADMINISTRATIVE CONTEXT

The study area is located within the Saldanha Bay Local Municipality (SBLM) (WC014). The SBLM is one of five B-Municipalities constituting the West Coast District Municipality (WCDM) (DC1). The SBLM is bordered in the west by the Atlantic Ocean, in the south by the West Coast National Park, in the north by the Bergrivier LM (WCDM), and the east by the Swartland LM (WCDM). Vredenburg is the seat of the SBLM. Major towns in the SBLM include Saldanha, Langebaan and St Helena Bay. Smaller settlements include Paternoster, Jakobsbaai, Hopefield and Langebaanweg.

The SBLM is comprised of 14 wards. The proposed site is located in ward 5. Ward 5 also includes Langebaanweg. Vredenburg/ Louwville spans 3 wards, namely wards 8, 9 and 10. Saldanha and Langebaan are located in wards 12 and 6, respectively.

3.3 MUNICIPAL-LEVEL SOCIO-ECONOMIC CONTEXT

Information provided below is mainly derived from the latest West Coast Socio-Economic Profile, which was compiled by the Provincial Treasury in 2006.

Dominant economic sectors (GDP)

In 2004 the SBLM had the largest economy in the WCDM, accounting for 33.5% of the district's total regional gross domestic product (GDPR). The largest sectors were Manufacturing (29,5%), Transport & Communication (14,9%), Wholesale & Retail trade; Catering & Accommodation (14,7%), with a relatively smaller contribution from the Agriculture, Forestry & Fishing sector (11,9%).

Dominant economic sectors (Employment)

Agriculture, forestry and fishing was the biggest employer in Saldanha in 2001, contributing 23.6% to employment. The Manufacturing sector contributed 17.8% to total local employment, followed by CSP services (14,4%) and Wholesale & Retail trade; Catering & Accommodation (13,3%). Collectively, these four sectors represented about 70 % of the SBLM's workforce in 2001. Major employers in the fishing industry included Sea Harvest, Oceana, Southern Seas and West Point; within the steel and mineral-processing industry, the Saldanha Steel Project (Arcelor/Mittal SA), Namakwa Sands and Duferco.



Source: Saldanha Bay Tourism

Figure 3.1: Major roads and settlements within the Saldanha Bay LM

Decline of fishing industry and growing importance of tourism

Commercial fishing and fish processing have historically been dominant within the local economies of coastal towns such as Saldanha, Paternoster and St Helena Bay. Due to natural declines in fishing stocks and other factors over the past two to three decades there has been a significant increase in the role of tourism in the local economy. During the same period, the coastline has become an important retirement, holiday and “lifestyle” resettlement destination.

The municipal region is characterized by exquisite natural beauty. The Langebaan Lagoon, a Ramsar site and popular recreational area, as well as the major portion of the West Coast National Park, the Cape Columbine Nature Reserve (Paternoster) and the West Coast Fossil Park (Langebaanweg), are all located within the Municipality. Other major tourism attractions include the region’s internationally recognized wild flower displays (late August to mid October), as well as whale, dolphin and bird watching opportunities. The coastline is also used extensively for recreational uses such as angling, crayfishing and various water sports. The regions tourism and recreational potential is enhanced by its proximity to Cape Town and a number of large towns in the Boland, such as Stellenbosch, Paarl and Wellington.

Population and population groups

The West Coast district’s total population projection for 2006 was estimated at 320 929 people, with the SBLM accounting for 25.3% of this figure. Between 2001 and 2006, the SBLM’s average annual growth rate of 2.6%. The population is expected to grow at an annual average rate of 2.3% a year between 2006 and 2010, reaching 88 656 people by 2010 or 25.6 % of the estimated district population.

In 2006 the population was predominantly Coloured (73,0%), followed by White (16%) and the Black African (11%). Census 2001 found Saldanha Bay Municipality’s population to be highly urbanized, with 94.4% cent of its total 18 703 households located in urban areas. This was the highest proportion of all the municipalities in the WCDM, and well above the district average of 69.89%.

In-migration trends

The municipality is one of a few local municipal areas in the WCDM where African in-migration rates were estimated to outstrip those of the Coloured group in 2006. The migration pattern of Whites showed net out-migration over the entire period. An increase in net White out-migration is forecasted until 2025.

3.4 LOCAL-LEVEL SOCIO-ECONOMIC CONTEXT

Census 2001 did not provide a disaggregated count for Langebaanweg. Rural populations have been subsumed under urban place names. No disaggregated data is currently available. As indicated under Section 1.5.2 the demographic data for the area is dated (2001 Census). While this data does provide useful information on demographic patterns, numbers and percentages should not be treated as absolutes. During the EIA phase, the SIA team will attempt to supplement Census 2001 data, which may be available from officials and key community representatives.

Population

According to Census 2001 data, the total population of Saldanha was 21 645, that of Langebaan 3 431, and that of Vredenburg 27 085. It is assumed that the populations of all these communities would be significantly higher at present (2010), mainly as a result of the growth of retirement/ residential land uses in the area, as well as economically motivated in-migration (Saldanha and Vredenburg).

Table 3.1: Population

Population Group	Saldanha		Langebaan		Vredenburg	
	Number	%	Number	%	Number	%
Black African	4 691	22	144	4	4 741	17.5
Coloured	13 540	63	1 526	44.5	17 110	63
Indian or Asian	185	1	18	0.5	145	0.5
White	3 229	14	1 743	51	5 089	19
Total	21 645	100	3 431	100	27 085	100

Source: Census 2001

As indicated in Table 3.1, the Coloured population group make up the dominant population group in Vredenburg and Saldanha, while White group is the dominant group in Langebaan. Of interest is the major presence of the Black group (22% in Saldanha; 17.5% in Vredenburg) in this traditionally Coloured and White region. The presence of the Black group is most largely a result of economically-motivated in-migration, specifically since the early 1990's.

Education levels

As indicated in Table 3.2, approximately 21.5% and 22% of the population (aged 20 and older) of Saldanha and Vredenburg respectively, were estimated to be functionally illiterate/innumerate in 2001. Given the strong correlation between education and skills levels, it may be assumed that a significant portion of the study area's working age population have only sufficient skills for elementary jobs.

Table 3.2: Education levels (population aged 20 and older)

Description	Saldanha %	Langebaan %	Vredenburg %
No schooling	4	3	5
Some primary	17.5	8	17
[% functional illiteracy/ innumeracy] ²	[21.5]	[11]	[22]
Complete primary	10	6	8
Some secondary	41	30	40
Std 10/Grade 12	22	36.5	22
Higher	5.5	16.5	7

Source: Census 2001

² In the South African context, having obtained a primary qualification (i.e. having successfully passed Grade 7) is generally held as the absolute minimum requirement for functional literacy/ numeracy. The National Department of Education's ABET (Adult Basic Education and Training) programme provides education and training up to the equivalent of Grade 9. In this more onerous definition, Grade 9 is required as the minimum qualification for having obtained a basic education (www.abet.co.za).

Employment levels

The employment statistics presented in Table 3.3 indicate that 48% of the Saldanha population, 60% of that of Langebaan, and 49% of that of Vredenburg were employed in 2001. Unemployment in Langebaan was estimated at a low 4%. Saldanha and Vredenburg had comparable unemployment rates, viz. 17.5% and 19%, respectively. This is comparable to the 2001 provincial rate of 17%. As a result of the declining fortunes of the West Coast fishing industry, the current unemployment rate in Saldanha is likely to be significantly higher.

Table 3.3: Employment levels (15 – 64 age group)

Description	Saldanha %	Langebaan %	Vredenburg %
Employed ³	48	60	49
Unemployed	17.5	4	19
Not Economically Active ⁴	34.5	36	32

Source: Census 2001

Household income

Census data for 2001 presented in Table 3.4, indicated that a significant portion of households in Saldanha (43%) and Vredenburg (40%) were living below the R1 600/month minimum subsistence level. In comparison, the rate for Langebaan was 18.5%.

Table 3.4: Income (by head of household)

Income per month	Saldanha %	Langebaan %	Vredenburg %
No formal income	13	3	15
R 1 – R 400	3.5	2	3
R 401 – R 800	9	3.5	7
R 801 - R 1 600	17.5	10	15
[% households below minimum subsistence level]	[43]	[18.5]	[40]
R1 601 - R 3 200	21	17	18
R 3 201 – R 6 400	16	21.5	18
R 6 401 – R 12 800	12	24.5	15
R 12 801 – R 25 600	5	12.5	6
R 25 601 and higher	3	6	3

Source: Census 2001

³ Census 2001 official definition of *an unemployed person*: “A person between the ages of 15 and 65 with responses as follows: ‘No, did not have work’; ‘Could not find work’; ‘Have taken active steps to find employment’; ‘Could start within one week, if offered work’.” (www.statssa.gov.za).

⁴ The term “not economically active” refers to people of working age not actively participating in the economy, such as early retirees, students, the disabled and home-makers.

Sectoral employment

Table 3.5 below provides an overview of proportional employment per economic sector for the relevant settlements. The data indicates the primary importance of the manufacturing subsector with regard to both Saldanha (33%) and Vredenburg (21%). The Agriculture/Fishing sub-sector was only significant with regard to Saldanha (16%). With regard to Vredenburg, Wholesale and Retail Trade and Manufacturing were on par, each contributing 21% of the employment opportunities. This is consistent with the town's role as regional leader town and service/retail center. With regard to Langebaan, the Services (29%) and Wholesale and Retail Trade (21%) subsectors were dominant.

Table 3.5: Sectoral contribution to employment

Description	Saldanha %	Langebaan %	Vredenburg %
Agriculture, hunting, forestry and fishing	16	6	6
Mining and quarrying	0.5	2	2
Manufacturing	33.5	15.5	21
Electricity, gas and water supply	0.5	0.5	0.5
Construction	4	8	10.5
Wholesale and retail trade	15	19	21
Transport, Storage and communication	5	5	9
Fin., real estate and bus. Services	6	9	9.5
Community, social and personal services	15.5	29	17
Other and not adequately defined	-	-	-
Private households ⁵	4	7	3.5

Source: Derived from Census 2001

⁵ This category mainly comprises domestic workers and gardeners.

SECTION 4: IDENTIFICATION OF KEY ISSUES

4.1 INTRODUCTION

Section 4 identifies the key social issues that will need to be assessed by the SIA specialist study during the EIA phase. In identifying the key issues the following assumptions are made:

- The area identified for the proposed wind energy facility meets the technical wind and other technical criteria required for such facilities;
- The issues associated with the proposed facility are likely to be similar to the issues associated with other wind energy facilities in the Western Cape, and specifically the West Coast area.

4.2 IDENTIFICATION OF KEY SOCIAL ISSUES

The identification of key social issues that need to be assessed during the EIA includes:

- The policy and planning related issues;
- Local, site-specific issues.

4.2.1 Policy and planning issues

The review of key national and provincial level energy policy documents indicated that the development of energy from renewable sources is strongly supported at both levels.

The national White Paper (2003) sets a national target of 10 000 GWh renewable energy contribution to final energy consumption by 2013.

The White Paper on Sustainable Energy for the Western Cape (2008) has been drafted with the explicit purpose of implementing the PGWC's overarching energy goals of energy security, efficiency, reduced emissions and decreased reliance on finite fossil fuel resources and associated unstable commodity markets. One of the key objectives of the White Paper is to create an enabling policy environment for the generation of electricity from renewable sources, and in particular wind and solar energy. The White Paper further quantifies the targets necessary for realizing the PGWC's overarching energy vision, namely:

- *5% of the electricity consumed in the Western Cape will come from renewable energy sources in 2014, measured against the 2006 provincial electricity consumption;*
- *The carbon emissions are reduced by 10% by 2014 measured against the 2000 emission levels.*

The PGWC's commitment to energy from renewable sources is also expressed in the statutory 2009 PSDF document. In this regard, the PSDF recommends a target of 25% of energy consumed in the province by 2020 from renewable sources.

With regard to spatial siting criteria applicable to WEFs, the PSDF cautions that the siting of such facilities should be done with the necessary sensitivity, specifically bearing in mind potential negative which may adversely affect scenic areas or rural sense of place values. As a general rule, the PSDF promotes the massing of service industrial infrastructure on disturbed sites, and the erection of new power lines within existing servitudes.

On a local level, the Saldanha Bay LM LED strategy (2005) explicitly notes the viability of establishing wind energy facilities in the Municipality, and discusses such as a viable, environmentally sustainable, economic sector within the Saldanha Bay LM area. In addition, renewable energy development is identified as one of seven major developmental thrusts in the 2006-2011 Saldanha Bay LM IDP.

4.2.2 Local and site specific issues

Based on a review of desktop sources, a number of key issues that will need to be investigated during the EIA phase have been identified. These include:

Construction phase:

- Development and implementation of appropriate labour recruitment strategies in order to maximize opportunities for local residents in the area and minimize the potential negative impacts associated with opportunistic in-migration of labour from outside the region;
- The development of suitable training strategies, specifically bearing in mind the generally low education and skills levels in the local area;
- The appropriate siting of construction camps on the site should they be required;
- Adequate on-site management of construction crews in order to manage risks related to infrastructural damage, veld fires and stock and game losses on site adjacent properties;
- Managing potential health risks associated with large groups of construction workers, including the spread of STDs, HIV/Aids and TB;
- Maximizing opportunities to local and regional Small Medium and Micro Enterprises (SMMEs) and other businesses to provide a range of services, which may include, but not limited to, catering, laundry, transport;
- Potential impacts on road surfaces in the study area, associated with the movement of heavy equipment onto the site;
- Potential impacts on traffic flows along roads in the study area associated, with the movement of heavy equipment onto the site.

Operational Phase

- Development and implementation of appropriate labour recruitment strategies, specifically bearing in mind the need for extensive training with regard to the local communities, and setting appropriate local training and employment targets;
- Potential impact on agricultural and other land use options of the site during the operational phase, as well as after decommissioning;
- Potential impacts on existing tourism and tourism potential of the area;

- Potential visual and sense of place impacts on existing receptors, including nearby rural and urban residences. In this regard it is recognized that the site is located in close proximity to a number of existing, large heavy industrial facilities, including the Saldahna Steel Mill and Namakwa Sands Smelter;
- Creation of opportunities to local business during the operational phase, including but not limited to, provision of security, staff transport, and other services;
- Potential up and down-stream economic opportunities for the local, regional and national economy;
- Provision of clean, renewable energy source for the national grid.

4.3 APPROACH TO ASSESSING IMPACTS

The identification and assessment of social impacts will be guided by the Guidelines for specialist SIA input into EIAs adopted by DEA&DP in the Western Cape in 2007. The Guidelines are based on accepted international best practice guidelines, including the Guidelines and Principles for Social Impact Assessment (Inter-organizational Committee on Guidelines and Principles for Social Impact Assessment, 1994). The guidelines have also been endorsed by the national Department of Environment and Water Affairs (DWEA). The approach will include:

- Review of existing project information, including the Planning and Scoping Documents;
- Collection and review of reports and baseline socio-economic data on the area (IDPs, Spatial Development Frameworks etc, See Box 1);
- Site visit and interviews with key stakeholders in the area including local land owners and authorities, local community leaders and councillors, local resident associations and residents, local businesses, community workers etc;
- Identification and assessment of the key social issues and opportunities;
- Preparation of Draft Social Impact Assessment (SIA) Report, including identification of mitigation/optimization and management measures to be implemented.
- Finalisation SIA Report.

As indicated above, the detailed public consultation process will be undertaken during the EIA phase of the project.

4.4 INFORMATION REQUIREMENTS

The following typical, generic project information is required in order to inform the Social Impact Assessment.

Construction phase

(Including all related infrastructure such as transmission lines, access roads, office and warehouse components)

- Comments received from I&APs during the public participation process, including with regard to the Final Scoping Report;
- A draft illustration (plan) of the proposed lay-out(s) of the turbines (including an indication of the phasing sequence on the site), supporting structures and infrastructure;

- Duration of the construction phase (months);
- Number of people employed during the construction phase;
- Breakdown of number of people employed in terms of low skilled, semi-skilled and skilled;
- Estimate of the total wage bill for the construction phase and breakdown in % as per skills categories;
- Total capital expenditure estimate for construction phase;
- Indication of where construction workers will be housed (on site or in nearest town?);
- Opportunities for on site skills development and training;
- Description of the typical activities associated with the construction phase, specifically on-site construction activities. This includes a description of how the large components associated with a WEF will be transported to the site and assembled on the site;
- The size of the vehicles needed to transport the components and the routes that will be used to transport the large components to the site, and an estimate of the number of vehicle trips required and duration of each trip.

Operational phase

- Operating budget per annum;
- Total number of people employed;
- Breakdown in terms of skills levels (see above);
- Annual wage bill;
- Typical activities associated with the operational phase;
- Information on opportunities for skills development and training;
- Typical lifespan of proposed WEF plant;
- Information on the lease / rental agreements with local landowners and or communities. This information is required so as to indicate how local landowners and communities stand to benefit from the project.

ANNEXURE A

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