

**SOCIAL ASSESSMENT  
FOR  
SCOPING REPORT  
(DRAFT)**

**OYSTER BAY WIND ENERGY FACILITY**

**November 2010**

**Prepared for**

**SAVANNAH ENVIRONMENTAL (Pty) Ltd**

**By**

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## EXECUTIVE SUMMARY

Renewable-Energy Systems (RES) Southern Africa (Pty) Ltd is proposing the establishment of a Wind Energy Facility (WEF), consisting of up to 50 x 3 MW or 80 x 1.8 MW wind turbines and associated infrastructure, on a site located approximately 6 km north of the town of Oyster Bay in the Eastern Cape Province. The site is comprised of five contiguous cadastral units, namely:

- Farm Klein Rivier 713/3;
- Remainder of Farm Rebok Rant 715 and Portion 1, 2, 3 and of Farm Rebok Rant 715
- Farm Ou Werf 738/1, 3;
- Farm Klippedrift 732/5; and
- Farm Kruis Fontein 681/10, 12.

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, including 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 Eastern and Western Cape Provinces of South Africa.

The study area is located in the Kouga Local Municipality (KLM), which in turn forms part of the Cacadu District Municipality. The KLM had the second largest economy in the Cacadu District Municipality (CDM). The major economic activities in the KLM include agriculture (deciduous fruit and dairy), tourism, game farming and hunting.

The Cacadu District's total population projection for 2006 was estimated at 6 527 747 people, with the KLM accounting for 18 % (73 274) of this figure (Community Survey, 2007). The average annual growth rate within the KLM is ~2.4% (Kouga Local Municipality IDP, 2007-2012).

In 2001, just under half of the population was classified as Coloured (47.7%) followed by Black African (33.4%) and White (18.7). These demographics are reflected in the dominant languages within the Municipality, with 64.9% of the population speaking Afrikaans as their first language, 29% isiXhosa speaking and 4.9% English speaking. The KLM IDP (2007-2012) indicates that the Municipality's population is highly urbanized, with more than 70% its households located in urban areas.

According to the KLM IDP (2007-2012), the major migratory patterns within the KLM are experienced during the peak holiday periods, when owners of holiday properties and holidaymakers visit the area. This places pressure on the KLMs resources and services. In Jeffery's Bay (population 40 203), for example, the population increases by 800% (321 624 people) over major holiday periods

Unemployment within the KLM is estimated at 15.4% (2001), which is below the Eastern Cape average of ~32% (Eastern Cape State of the Environment Report, 2004), while ~42% of the population are listed as 'not economically active'. The largest sectors in terms of employment within the KLM in 2001 were Agriculture,

Forestry & Fishing (~9%), Community Service (~8%), Wholesale and Retail (4%) Construction (~3%) and Manufacturing (~2%). The 2001 Census data listed 73% as Undetermined.

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 the Western Cape Environmental authorities. 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 at a national level by the Department of Water and Environmental Affairs. The approach includes:

- Review of relevant socio-economic baseline data for the area;
- 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 KLM;
- 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 and the establishment of infrastructure for the generation 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**

DEA&DP	Department of Environmental Affairs and Development Planning (Western Cape)
DWEA	Department of Water and Environmental Affairs (National)
ECPGDP	Eastern Cape Provincial Growth and Development Programme
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
RES	Renewable Energy Systems
KLM	Kouga Local Municipality
SDF	Spatial Development Framework
SIA	Social Impact Assessment
CDM	Cacadu District Municipality
WEF	Wind Energy Facility

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## **SECTION 1: INTRODUCTION**

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### **1.1 INTRODUCTION**

Savannah Environmental (Pty) Ltd (hereafter referred to as Savannah) were appointed by Renewable Energy Systems Southern Africa (Pty) Ltd (hereafter RES Southern Africa) 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 Oyster Bay WEF, on a site located north of the town of Oyster Bay on the south-west coast of the Eastern 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.

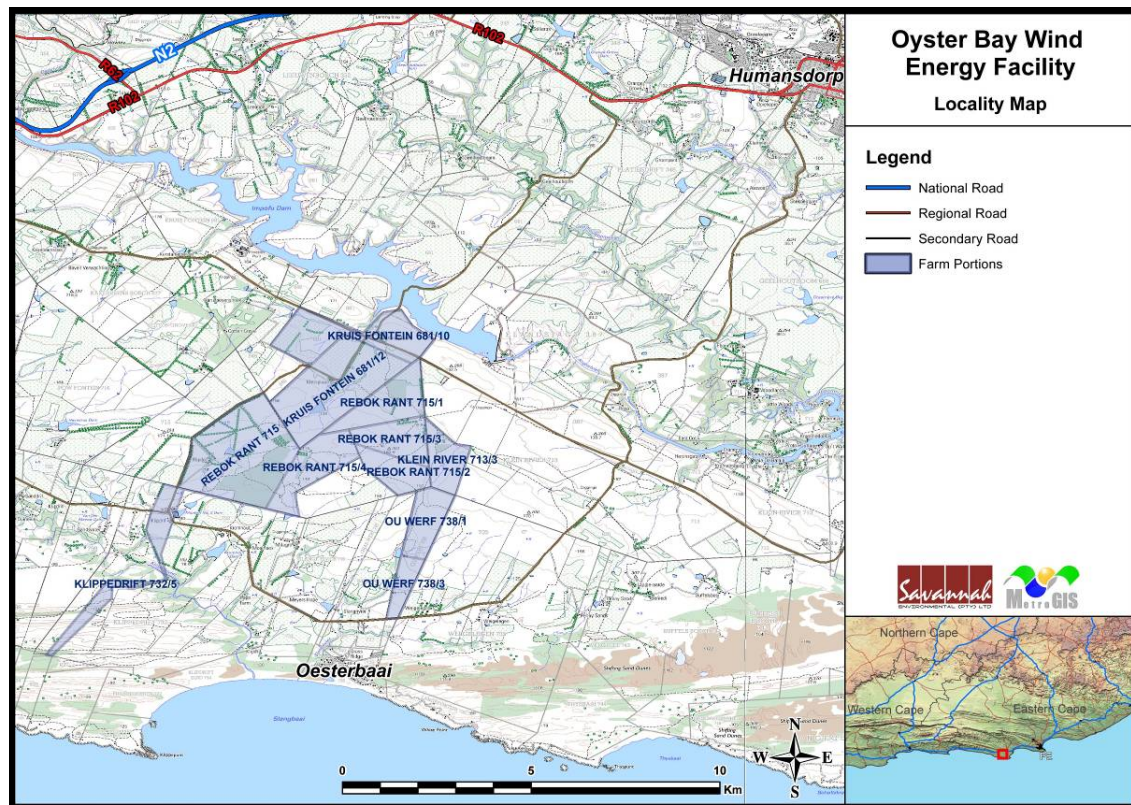
### **1.3 PROJECT DESCRIPTION**

RES Southern Africa has identified the potential to establish a new WEF on the Oyster Bay site. The site is located in a rural area, approximately 6 km north of the town of Oyster Bay in the Eastern Cape Province of South Africa. The site is comprised of five contiguous cadastral units, namely:

- Farm Klein Rivier 713/3;
- Remainder of Farm Rebok Rant 715 and Portion 1, 2, 3 and of Farm Rebok Rant 715;
- Farm Ou Werf 738/1, 3;
- Farm Klippedrift 732/5; and
- Farm Kruis Fontein 681/10, 12

An area of approximately 23km<sup>2</sup> is being considered for the establishment of up to 50 x 3MW or 80 x 1.8MW wind turbines (depending on the technology deemed to be

most appropriate for the proposed development site) 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 via the Melkhout Substation. The project is therefore an Independent Power Producer (IPP) project.



**Figure 1.1. Location of the proposed Oyster Bay 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:

- The **foundation unit** upon which the turbine is anchored to the ground;
- The **tower** which is typically between 80m and 120m 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.

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 50 x 3 MW or 80 x 1.8 MW turbines would require approximately 12-24 months to construct and commission, and requires the expertise of skilled staff.

The basic infrastructure associated with proposed Oyster Bay WEF would include:

- Access road/s to the site from the west, north or east of the proposed site.
- Internal access roads between the wind turbines;
- Cabling between the turbines, to be laid underground where practical;
- Maintenance/ control buildings;
- A 132/66 kV substation. The most suitable location for the substation will be finalized during the EIA phase;
- An overhead 132/66 kV distribution line that will link the WEF to the Eskom grid via the Melkhout substation located ~20 km from the proposed site.

#### **1.4 PROJECT LOCATION AND SURROUNDING LAND USES**

The Oyster Bay site is located in a rural/agricultural area south of the Impofu Dam and approximately 22 km west of the town of St. Francis Bay, ~23 km south of the town of Humansdorp and ~39 km north west from the coastal settlement of Jeffery's Bay. Jeffery's Bay is the largest town in the KLM and is also the administrative seat of the KLM.

Jeffery's Bay is an established economic hub that serves as a regional commercial and service centre with a population of approximately 40 000 and an annual population growth rate of 2.5%. Jeffery's Bay, St. Francis Bay and Oyster Bay are all major local, national and international tourist areas within the KLM centred around ocean-related sports activities. Despite the relatively small total population within the KLM, the area is one of the fastest growing municipalities in the country driven largely by property development in the form of residential estate developments with some commercial and industrial developments (Kouga Local Municipality website, 2010).

The dominant land use within the proposed WEF site and the surrounding area is linked to agriculture. The main forms of agriculture in the area include deciduous fruit and dairy farming and game farming (Kouga Local Municipality IDP, 2007-2012)



A number of other WEF projects are currently being proposed in the KLM, around Humansdorp (Happy Valley WEF), Jeffery's Bay (Jeffery's Bay WEF) and Oyster, Gibson and Krom Bay (Kouga WEF).

## **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 RES Southern Africa 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 Eastern Cape as well as other areas). It is assumed that issues identified on those projects are likely to be similar to those for the proposed Oyster Bay 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 Census<sup>1</sup>, 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 EIA Regulations and requirements of the National Environmental Management Act and additionally in line with the Western Cape Department of Environmental Affairs and Development (DEA&DP) Planning Guidelines for Social Impact Assessment. These Guidelines are based on international best practice and have been endorsed at a national level by the national Department of Water and Environmental Affairs. The scoping level study involved:

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<sup>1</sup> 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.

- A review of demographic data from the 2001 Census Survey and other available sources;
- A review of relevant planning and policy frameworks for the study area;
- 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 STUCTURE**

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.

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## **SECTION 2: POLICY AND PLANNING ENVIRONMENT**

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### **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 Oyster Bay WEF, namely:

- The National Energy Act (2008);
- The White Paper on Renewable Energy (2003);
- Strategic Initiative to Introduce Commercial Land Based Wind Energy Development to the Western Cape. Towards a Regional Methodology for Wind Energy Site Selection (2006)<sup>2</sup>;
- The Eastern Cape Provincial Growth and Development Plan (2004-2014);
- The Cacadu District Municipality Integrated Development Plan (IDP) (2007-2012);
- Kouga Local Municipality Integrated Development Plan (2008-2012)

### **2.2 NATIONAL LEVEL ENERGY POLICY**

#### **2.2.1 National Energy Act (Act 34 Of 2008)**

The National Energy Act was promulgated in 2008 (Act 34 of 2008). One of the objectives of the Act was to promote diversity of supply of energy and its sources. In this regard, the preamble makes direct reference to renewable resources, including wind:

“To ensure that diverse energy resources are available, in sustainable quantities, and at affordable prices, to the South African economy, in support of economic growth and poverty alleviation, taking into account environmental management requirements (...); to provide for (...) increased generation and consumption of renewable energies...” (Preamble).

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<sup>2</sup> While no policy or methodology on wind energy site selection exists specifically for the Eastern Cape, the guidelines developed by the Western Cape Department of Environmental Affairs and Development Planning (DEA&DP) do provide useful policy and methodology guidelines for site selection that are applicable all regions, including the Eastern Cape Province.

### 2.2.2 White Paper on the Energy Policy of the Republic of South Africa

Investment in renewable energy initiatives, such as the proposed wind energy facility, is supported by the White Paper on Energy Policy for South Africa (December 1998). In this regard the document notes:

“Government policy is based on an understanding that renewables are energy sources in their own right, are not limited to small-scale and remote applications, and have significant medium and long-term commercial potential”.

“Renewable resources generally operate from an unlimited resource base and, as such, can increasingly contribute towards a long-term sustainable energy future”.

The support for renewable energy policy is guided by a rationale that South Africa has a very attractive range of renewable resources, particularly solar and *wind* and that renewable applications are in fact the least cost energy service in many cases; more so when social and environmental costs are taken into account.

Government policy on renewable energy is thus concerned with meeting the following challenges:

- Ensuring that economically feasible technologies and applications are implemented;
- Ensuring that an equitable level of national resources is invested in renewable technologies, given their potential and compared to investments in other energy supply options; and,
- Addressing constraints on the development of the renewable industry.

The White Paper also acknowledges that South Africa has neglected the development and implementation of renewable energy applications, despite the fact that the country's renewable energy resource base is extensive and many appropriate applications exist. The White Paper also notes that renewable energy applications have specific characteristics that need to be considered. Advantages include:

- Minimal environmental impacts in operation in comparison with traditional supply technologies;
- Generally lower running costs, and high labour intensities.

Disadvantages include:

- Higher capital costs in some cases;
- Lower energy densities; and;
- Lower levels of availability, depending on specific conditions, especially with sun and wind based systems.

### 2.2.3 White Paper on Renewable Energy

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

The White Paper notes, that while South Africa is well-endowed with renewable energy resources that have the potential to become sustainable alternatives to fossil fuels, these have thus far remained largely untapped. 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-subsidised 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 utilised 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).*

#### **2.2.4 Strategic plan for the Department of Agriculture, Forestry and Fisheries 2010/11**

Honourable Tina Joemat-Pettersson (MP) Minister of Agriculture, Forestry and Fisheries *"In the light of the impact of the rising costs of energy in the sector, we will champion the need to explore renewable energy through biofuel strategies, excluding maize, as well as exploring solar and wind energy possibilities."*

Also to take note of is South Africa's draft national Climate Change Policy, which will be considered in the EIA phase.

### **2.3 PROVINCIAL LEVEL ENERGY AND SPATIAL POLICY**

#### **2.3.1 Eastern Cape Provincial Growth And Development Programme**

The Eastern Cape Provincial Growth and Development Programme (PGDP) 2004-2014 sets out the vision and plan for development for the Eastern Cape until 2014. It highlights, in particular, strategies to fight poverty, promote economic and social development, and create jobs.

The strategy document does not highlight any specific measures to promote the development of renewable energy sources. However, an analysis of energy sources within the province reveals that 23% of the population of the province still rely on paraffin for their energy needs while 25% rely on candles for lighting.

Energy demands and electricity infrastructure rollout forms part of the Strategic Infrastructure Programme of the PGDP. The PGDP states that the, "...economic

logistics infrastructure – energy, roads, rail, ports, and air transport among others – is a necessary condition for economic growth and development.”

Section 5 of the PGDP (2004-2014) identifies six strategic objective areas of the PGDP. Of these the infrastructure programme is of relevance to the study. The report notes that development of infrastructure, especially in the former homelands, is a necessary condition to eradicate poverty through:

- The elimination of social backlogs in access roads, schools and clinics and water and sanitation;
- To leverage economic growth through access roads and improving the road, rail and air networks of the Province.

Infrastructure development, in turn, will have strong growth promotion effects on the agriculture, manufacturing and tourism sectors by improving market access and by “crowding in” private investment. Poverty alleviation should also be promoted through labour-intensive and community based construction methods.

The PGDP indicates that the programmes have been selected for their potential in leveraging significant resources, creating a large multiplier effect, and providing a foundation for accelerated economic growth. Of specific relevance is the Strategic Infrastructure Programme. This programme indicates that enabling economic and logistics infrastructure – energy, roads, rail, ports, and air transport among others – is a necessary condition for economic growth and development. Specific reference is therefore made to energy infrastructure.

The Strategic Infrastructure Programme also seeks to consolidate and build on this coastal advantage through the provision of world-class infrastructure and logistics capability at the Coega and East London IDZs, and improving connectivity and linkages with major industrial centres such as Johannesburg.

The high-level objectives of the Strategic Infrastructure Programme include consolidating and building upon the strengths of the Province’s globally-competitive industrial sector through the development of world-class infrastructure and logistics capability in the East London and Coega IDZs. A reliable energy supply will be critical to achieving these objectives. The proposed WEF will contribute to the future energy requirements of the Eastern Cape, and its proximity to the Coega IDZ will also benefit these key initiatives.

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

While no policy or methodology on wind energy site selection exists specifically for the Eastern Cape, the 2006 report series “Towards A Regional Methodology For Wind Energy Site Selection” compiled by the Department of Environmental Affairs and Development Planning (DEA&DP) of the Western Cape, includes some useful policy and methodology guidelines for site selection that are applicable to the Eastern Cape Province.

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 KLM, around Humansdorp (Happy Valley WEF), Jeffery's Bay (Jeffery's Bay WEF) and Oyster, Gibson and Krom Bay (Kouga WEF). Potential cumulative impacts on sense of place, should all these facilities be approved and constructed, 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 Oyster Bay site is located in a rural/agricultural context where the landscape has not been "vertically compromised" by any industrial developments.

### **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 Eastern Cape, such emphasis would need to be carefully balanced against the tourist and lifestyle residential values afforded by undeveloped landscapes. With regard to the proposed Oyster Bay site, it should be noted that the site is located in close proximity to the tourist corridor between the Gamtoos River Mouth (north of Jeffery's Bay) and Oyster Bay itself.

### **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).

## **2.4 MUNICIPAL LEVEL DEVELOPMENTAL AND SPATIAL POLICY**

### **2.4.1 Cacadu District Municipality Integrated Development Plan**

The Cacadu District Municipality Integrated Development Plan (IDP) (2007-2012) identifies 7 key strategic priorities based on the Medium Term Strategic Framework (MTSF) published by the National Minister of Planning as a directive to all spheres of government in July 2009. The strategic priorities that are relevant to the SIA are listed:

- Identification of Economic Opportunities - Efforts are to be undertaken to identify and enhance existing economic opportunities in the interests of work creation and sustainable livelihoods;
- Provision and Maintenance of Infrastructure - Promote an infrastructure investment program aimed at expanding and improving social and economic infrastructure, transportation, energy, water, sanitation and information and communications infrastructure;
- Enhancement of Skills and Education Systems - Investment in quality education for all people and in skills development including information and communications technology (ICT, artisan and agricultural skills development to improve food security and land-based livelihoods);
- Sustainable Resource Management and Use - Investigate and validate renewable energy alternatives, promotion of energy efficiency and accreditation of carbon credits, adopt waste reduction practices, enforce zero tolerance of illegal and unsustainable exploitation of resources, support sustainable water use and the provision of quality drinking water and enhance biodiversity and the preservation of natural habitats.

These strategic priorities form the framework for the District analysis of the status quo across numerous sectors within the District. The District analysis, in turn, informs the development priorities for the municipality.

The IDP development priorities highlighted in the Cacadu IDP are as follows:

- Priority 1: Infrastructure Investment - "Without appropriate infrastructure development and appropriate infrastructure maintenance the sustainability of local municipalities will be severely compromised as its existing and future tax base is dependant on appropriately maintained infrastructure. In addition, appropriate infrastructure at appropriate locations can create an environment conducive to economic development"
- Priority 2: Capacity Building and Support to Local Municipalities – *"Local municipalities within the District are required by the Constitution to 1) provide democratic and accountable government for local communities; 2) provide services to the communities in an equitable and sustainable manner; 3) promote social and economic development; and 4) promote a safe and healthy environment. Although obligated to perform those duties as listed above, local*



*municipalities are often overwhelmed in terms of available resources and capacity to adequately deliver on the above. The Cacadu District Municipality therefore has an obligation to support and provide capacity to those local municipalities within the District."*

- Priority 3: Economic Development – *"Existing resources need to be properly leveraged in order to benefit the community at large while taking into account the total resources available within the municipality. In achieving the above the following principles must be applied:*
  - *Sustainability;*
  - *SMME development;*
  - *Impact assessment; and*
  - *Good municipal governance."*
- Priority 4: Community Development – *"The Cacadu District Municipality is responsible for the overall planning and co-ordination of service delivery within the boundaries of the District Municipality. Due to the vastness of the geographical area and the diversity within the boundaries, there are numerous and unique situations being encountered in terms of the provision of a range of services, in particular "community services", i.e. Health, disaster management, etc."*

The applicable objectives and strategies with respect to the development priorities outlined above form the basis of the draft District Service Delivery & Budget Implementation Plan (SDBIP). Within the SDBIP, these strategies and objectives utilise existing economic strengths and opportunities to inform the establishment of workable programmes and projects. These programmes and projects tend to reduce the current threats, and strengthen the weaknesses in the local economic environment. The Cacadu IDP identifies the promotion and utilization of renewable energy as core initiative that influences its policies, objectives, strategies and projects. As such, the proposed WEF could play an important role in the District realising some of its key IDP objectives.

#### **2.4.2 Kouga Local Municipality Integrated Development Plan (2007-2012)**

The Kouga Local Municipality Integrated Development Plan (IDP) (2007-2012) identifies 5 Key Priority Areas (KPA) in line with the National standards to address the municipality's development objectives:

- Infrastructure and Basic Services;
- Socio-economic Development;
- Institutional Transformation;
- Good Governance and Public Participation;
- Financial viability and Management.

With focus on these KPAs an analysis of the status quo across numerous sectors within the Municipality was undertaken to highlight the key objectives and associated strategies. Those objectives that are relevant to the proposed WEF include:

- Communities of Kouga have access to safe and convenient road networks. The road networks should support tourism, people's access to economic activities, as well as access to education, health and social service;
- All formal households have access to reliable and affordable electricity as well as streetlights, which supports safety and access for emergency services in Kouga, by 2012;

- Economic growth is stimulated in the Kouga region, and sustainable employment has been facilitated by creating a 5% growth in job creation by 2011;
- Kouga Municipality manages the available land in a sustainable manner that makes land available for development initiatives and economic growth that meets legal requirements.

A detailed review of the IDP priorities and their relevance to the proposed development will be undertaken during the EIA phase.

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## **SECTION 3: OVERVIEW OF THE STUDY AREA**

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### **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 Kouga Local Municipality (KLM) (EC108). The KLM is one of ten Category-B Municipality<sup>3</sup> that constitute the Cacadu District Municipality (CDM) (DC10). The municipality is approximately 2 419 km<sup>2</sup> in size (~4% of the greater Cacadu District Municipality) and is bordered the north by the Sundays River and Baviaans Local Municipalities, in the east by the Nelson Mandela Metropolitan area (Port Elizabeth), in the south by the Indian Ocean and in the west by the Kou-Kamma Local Municipality. Jeffery's Bay is the seat of the KLM. Major towns in the KLM include Jeffrey's Bay, St Francis Bay and Humansdorp. Smaller settlements include Hankey, Patensie, and Oyster Bay. Other settlements in the Kouga region include, Andrieskraal, Aston Bay, Centerton, Gamtoos Mouth, Kruisfontein, Kwanomzamo, Loerie, Ocean View, Oyster Bay, Paradise Beach, Pellsrus, Ramaphoza Village, Sea Vista, Thornhill, Tokyo Sexwale, Umzamowethu and Weston. .

The KLM is comprised of 10 wards. The proposed site is located in Ward 1. Ward 1 also includes Oyster Bay and St. Francis Bay. Jeffery's Bay is located in ward 3 while Humansdorp is located in Ward 5.

### **3.3 MUNICIPAL-LEVEL SOCIO-ECONOMIC CONTEXT**

Information provided below is mainly derived from the latest KLM IDP document (2007-2012, which was compiled by the Provincial Treasury in 2006.

#### **Dominant economic sectors (GDP)**

The KLM had the second largest economy in the CDM (after the Makana Local Municipality). The largest sectors, according to the 2001 Census, were Agriculture, forestry and Fishing (8.6%), Community Services (7.7%), Wholesale & Retail trade (4%); Construction (2.8%), Manufacturing (1.8%) and Business services (1.5%) with a relatively smaller contribution from the Transport and Communications (0.5%). In 2001, 73% was ascribed to an Undetermined sector. However, taking into

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<sup>3</sup> A category-B municipality is defined as a municipality that shares executive and legislative authority in its area with a category- C municipality within whose area it falls

account the employment figures below, it is assumed that the relative contributions of the sectors described above are higher than indicated in the 2001 Census.

### Dominant economic sectors (Employment)

The largest sectors in terms of employment within the KLM in 2001 were Agriculture, Forestry & Fishing (~20.1%), Community Service (~20%), Trade (~15%), Manufacturing (~12%) Finance (~15%) and construction (~8%). Major employers in the KLM are the game (hunting), tourism, deciduous fruit and dairy industries.



Source: KougaTourism

Figure 3.1: Major roads and settlements within the Kouga LM

### Population and population groups

The Cacadu District's total population projection for 2006 was estimated at 6 527 747 people, with the KLM accounting for 18 % (73 274) of this figure (Community Survey, 2007). The average annual growth rate within the KLM is ~2.4% (Kouga Local Municipality IDP, 2007-2012).

In 2001, just under half of the population was classified as Coloured (47.7%) followed by Black African (33.4%) and White (18.7) These demographics are

reflected in the dominant languages within the Municipality, with 64.9% of the population Afrikaans speaking, 29% isiXhosa speaking and 4.9% English speaking. The KLM IDP (2007-2012) indicates that the Municipality's population is highly urbanized, with more than 70% of its households located in urban areas.

### In-migration trends

According to the KLM IDP (2007-2012), the major migratory patterns within the KLM are experienced during the peak holiday periods, when owners of holiday homes and other holiday makers visit the area. This places a large demand on the resources and services in the KLM. In Jeffery's Bay (population 40 203), for example, the population increases by 800% (321 624 people) over major holiday periods

## 3.4 LOCAL-LEVEL SOCIO-ECONOMIC CONTEXT

Census 2001 data does not provide a disaggregated count for proposed WEF site. 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.

The majority of the proposed WEF project is located in Ward 1 of the Kouga Local Municipality. Ward 1 constitutes ~24% (579.6 km<sup>2</sup>) of the total area of the Municipality (2 419 km<sup>2</sup>). The ward is predominantly rural and agricultural in terms of land use. The largest settlement is St. Francis Bay.

### Population

According to Census 2001 data, the total population of Ward 1 was 4 967. More recent data could not be sourced, but it is assumed that the population would have increased given the positive population growth rate (2.5%) for the region between 1996 & 2010 noted in the Kouga IDP (2007-2012).

**Table 2.1: Population for Ward 1, KLM**

Population Group	Ward 1	
	Number	%
Black African	1366	27.5
Coloured	1269	25.5
Indian or Asian	-	-
White	2332	46.9
Total	4967	100

**Source: Census 2001**

Table 2.1 above indicates that Ward 1 has a relatively large White population group that makes up almost half (~47%) of the Ward's total population. The Black African (~27%) and Coloured (~25%) population groups each account for around a quarter of the total population in Ward 1.

## Education levels

As indicated in Table 2.2 below, according to 2001 Census data, approximately 18% (corresponding to an absolute total of 657 people) of the population of Ward 1 aged 15 and older 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. Ward 1, however, does show more skilled labour as reflected in the fact that 29% of the population have a Std 10/Grade 12 qualification and ~18% have a tertiary level of education. It is unknown whether this portion of the population is made up of permanent residents in the area since the KLM has a high seasonal/holiday population.

**Table 2.2: Ward 1 education levels**

Description	Ward 1
No schooling	169
Some primary	488
[% functional illiteracy/ innumeracy] <sup>4</sup>	18.3%[657]
Complete primary	215
Some secondary	1063
Std 10/Grade 12	1018
Higher	634

**Source: Census 2001**

## Employment levels

The employment statistics presented in Table 2.3 below indicate that approximately 53% of the population of Ward 1 was employed in 2001. The unemployment rate was relatively low with respect to the provincial and national averages, estimated at ~10% as opposed to the provincial average of ~32% (Eastern Cape State of the Environment Report, 2004).

**Table 2.3: Study area communities employment levels (15 – 64 age groups)**

Description	Ward 1 %
Employed <sup>5</sup>	53.0
Unemployed	10.1
Not Economically Active <sup>6</sup>	36.9

**Source: Census 2001**

## Household income

<sup>4</sup> 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](http://www.abet.co.za)).

<sup>5</sup> 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](http://www.statssa.gov.za)).

<sup>6</sup> 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.

Table 2.4 below indicates that ~76% of households in Ward 1 were living on less than the accepted South African R1 600/ month minimum subsistence level in 2001. Significantly, the 'no formal income' category was the most pronounced at ~43%. Approximately 22% of the households in Ward 1 were earning an income clustered in the R800-R3200/ month range.

**Table 2.4: Household income (by head of household)**

Income per month	Ward 1 %
No formal income	43.5
R 1 – R 400	4.9
R 401 – R 800	15.1
R 801 - R 1 600	12.7
[% households below minimum subsistence level]	[76.2]
R1 601 - R 3 200	8.9
R 3 201 – R 6 400	6.4
R 6 401 – R 12 800	5.1
R 12 801 – R 25 600	1.9
R 25 601 and higher	1.6

**Source: Census 2001**

### Sectoral employment

Table 2.5 below provides an overview of proportional employment per economic sector by head of household for Ward 1 within the KLM.

Ward 1's sectoral employment profile shows that just under a quarter (~26%) of formal employment is provided by the Agricultural sector followed by the Wholesale and Retail sector (~17%), the Construction sector (~12%) and the Community Services sector (~10%).

**Table 2.5: Sectoral contribution to employment**

Description	Ward 1 %
Agriculture, hunting, forestry and fishing	24.5
Mining and quarrying	0.0
Manufacturing	3.7
Electricity, gas and water supply	0.2
Construction	12.4
Wholesale and retail trade	16.8
Transport, Storage and communication	1.9
Fin., real estate and bus. Services	6.8
Community, social and personal services	9.9
Other and not adequately defined	9.8
Private households <sup>7</sup>	14.0

**Source: Derived from Census 2001**

<sup>7</sup> This category mainly comprises domestic workers and gardeners.

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## SECTION 4: IDENTIFICATION OF KEY ISSUES

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### 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 Eastern Cape, and specifically the KLM 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 the relevant planning and policy documents was undertaken as a part of the scoping level assessment. The key documents reviewed included:

- The National Energy Act (2008);
- The White Paper on the Energy Policy of the Republic of South Africa (December 1998);
- The White Paper on Renewable Energy (November 2003);
- Eastern Cape Provincial Growth and Development Plan (2004-2014);
- The Cacadu District Municipality Integrated Development Plan (IDP) (2007-2012);
- The Kouga Local Municipality Integrated Development Plan (IDP) (2007-2012);

The findings of the review indicated that wind energy was strongly supported at a national and local level. At a national level the White Paper on Energy Policy (1998) notes:

- Renewable resources generally operate from an unlimited resource base and, as such, can increasingly contribute towards a long-term sustainable energy future;
- The support for renewable energy policy is guided by a rationale that South Africa has a very attractive range of renewable resources, particularly solar and **wind** and that renewable applications are in fact the least cost energy service in many cases; more so when social and environmental costs are taken into account.



At a provincial level the PGDP does not make specific reference to renewable energy, however, investment in energy infrastructure is identified as one of the key requirements. Based on this it is reasonable to assume that the establishment of WEF is supported.

At a local level the Cacadu District Municipality IDP identifies the promotion and utilization of renewable energy as a core initiative that influences its policies, objectives, strategies and projects. As such, the proposed WEF could play an important role in the District realising some of its key IDP objectives.

The Kouga Local Municipality Integrated Development Plan (IDP) (2007-2012) identifies 5 Key Priority Areas (KPA) in line with the National standards to address the municipality's development objectives. The key priorities that are relevant to the proposed WEF include:

- Infrastructure and Basic Services;
- Socio-economic Development;

The findings of the review of the relevant policies and documents pertaining to the energy sector therefore indicate that wind energy and the establishment of WEFs are supported at a national, provincial and local level. It is therefore the opinion of the authors that the establishment of a WEF on the proposed site is supported by national, provincial and local policies and planning guidelines.

#### **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;
- 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**

As indicated above, 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 the Western Cape Environmental authorities. 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 at a national level by the Department of Water and Environmental Affairs. This approach includes:

- 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 of SIA Report.

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

### **Box 1: Typical social and economic baseline information**

- Social and economic characteristics of the affected area;
- Demographic profile of the area (population numbers, race, age, gender, income, education and employment levels etc);
- Policy and planning framework for the site and surrounds (see below);
- Social and economic trends (historic and current) in the affected area;
- Social and economic drivers, both current and historical, in the affected areas, including key economic sectors;
- Social context of how people run their lives and the key factors that affect them on a day-to-day basis (livelihood strategies);
- An understanding of social networks, intra- and inter-household, community and extend support systems affected by the proposed development;
- Institutional arrangements, structures and capacity of the local authorities;
- An understanding of the institutional, local leadership and other power relationships that may be affected by the development;
- Level of services (housing, water, electricity, schools, clinics, policing etc) and current state of infrastructure in the area;
- Social and economic initiatives and opportunities;
- Local, regional and national social and economic policies, programmes, and plans affecting the area;
- Individuals, communities, organisation's and institutions who are likely to be affected by the project/plan/policy, with specific emphasis on vulnerable individuals, communities, organisation's and institutions;
- Land uses and ownership patterns in the area;
- Use and access to natural resources and livelihood strategies, especially in rural areas; and,
- Cultural beliefs and value systems.

#### **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 if applicable), 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;
- Basic information on the agreements with local landowners and or communities. This information is required so as to indicate how local landowners and communities stand to be impacted upon by the project, however it is acknowledged that lease / rental agreements are confidential.

## ANNEXURE A

### REFERENCES

- Cacadu District Municipality Integrated Development Plan (IDP) (2007-2012);
- Kouga Local Municipality Integrated Development Plan (IDP) (2007-2012);
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