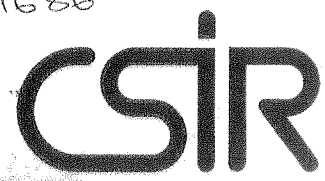
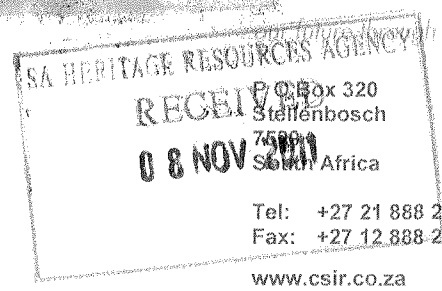


Case ID: 1686



4 November 2011

Attention: Dr Mariagrazia Galimberti
SAHRA
Cape Town
Tel: 021 – 462 4502



Dear Dr Galimberti,

Tel: +27 21 888 2400
Fax: +27 12 888 2693
www.csir.co.za

RE: Final Scoping Report, Proposed Banna Ba Pifhu Wind Energy Project, Farms Broadlands and Saragossa, Humansdorp, Kouga Local Municipality (DEA Reference Number: 12/12/20/2289)

As a registered interested and affected party on the database for the above project you are hereby notified of the submission of the Final Scoping Report to the National Department of Environmental Affairs for decision making (DEA reference no: 12/12/20/2289). All comments on the Final Scoping report are to be submitted directly to the National Department of Environmental Affairs, as indicated in the table below and a copy provided to the Public Participation Consultant, Ms Sandy Wren, contact details provided at the end of the letter, by no later than the **29 November 2011**.

For Attention:	Mr Takalani Maswime
Postal Address	National Department of Environmental Affairs Private Bag X447 Pretoria 0001
Phone	Tel: (012) 310 3780
Fax	Fax: (012) 320 7539
Email	Tmaswime@environment.gov.za
Please ensure that the project reference number is reflected on all correspondence:	
DEA Reference no:	12/12/20/2289

Report Availability

A copy of the Final Scoping Report and CD are attached and are available for public viewing at the **Humansdorp** and **Jeffreys Bay Main Library**. It can also be downloaded from the website **www.publicprocess.co.za**

The next stage in the EIA process will entail the release of the Draft Environmental Impact Assessment and EMPr (Draft EIA and EMPr) for a 40 day review period. As a registered interested and affected party on the database for this project you will receive written notification of the review period and any public meetings scheduled to be held during this period.

We thank you for providing us with your input to date and look forward to your participation in the next stage of the process.

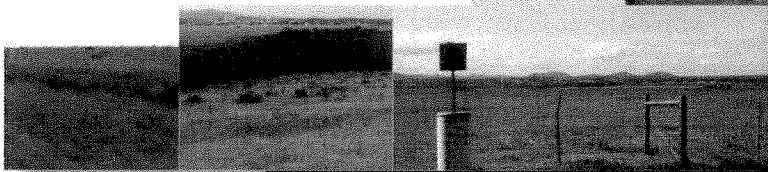
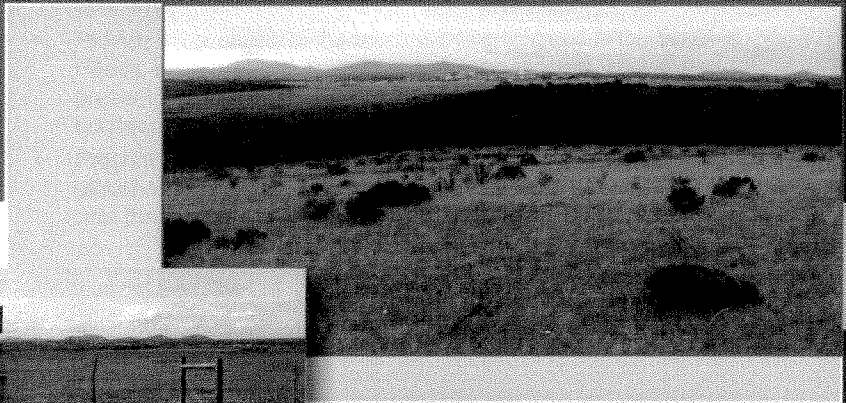
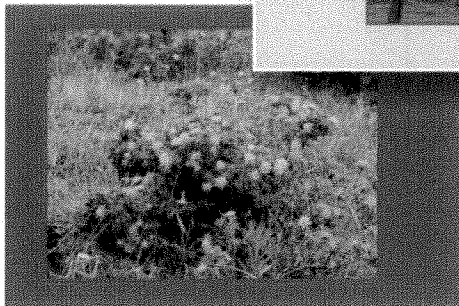
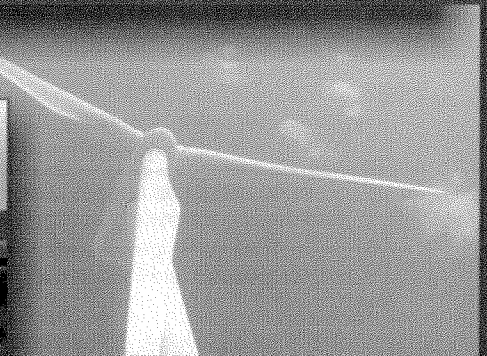
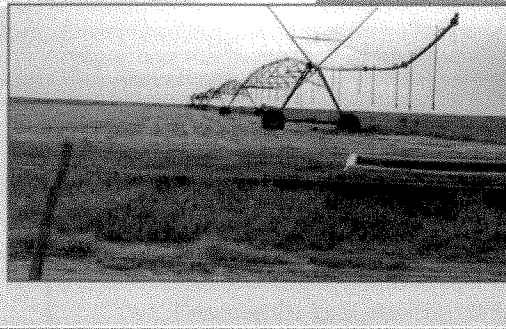
Yours sincerely,

Minnelise Levendal (EIA project Manager, CSIR)
Tel.: 021 – 888 2495/2661; Fax: 021 – 888 2693; e-mail: mlevendal@csir.co.za

Contact details for Public Process Consultant: Ms Sandy Wren
Phone 041 374 8426; Fax 041 373 2002; Email sandy@publicprocess.co.za
PO Box 27688 Greenacres 6057; 120 Diaz Road Adcockvale, PE 6001

Environmental Impact Assessment for the proposed Banna Ba Pifhu Wind Energy Project near Humansdorp, Eastern Cape: Final Scoping Report

October 2011



Prepared by:
CSIR
Contact person:
Ms. Minnelise Levendal
PO Box 320, Stellenbosch, 7599

Tel: 021 - 888 2495/2661
Fax: 021 - 888 2693
Email: mlevendal@csir.co.za

Prepared for:
WKN-Windcurrent SA (Pty) Ltd

Contact person:
Mr Alan Wolfromm
PO Box 762
Wilderness
6560
Tel: 044 877 0564

DEA Reference Number:
12/12/20/2289
CSIR Report No:
GWDS Stel General: 10106



Public Process Consultants
Environmental Impact Assessment and
Public Participation Management

CSIR
our future through science

Contents

CHAPTERS

<i>Chapter 1</i>	Introduction
<i>Chapter 2</i>	Project Description
<i>Chapter 3</i>	Description of the Affected Environment
<i>Chapter 4</i>	Approach to EIA Process and Public Participation
<i>Chapter 5</i>	Issues and Responses Trail
<i>Chapter 6</i>	Plan of Study for EIA
<i>Chapter 7</i>	References

APPENDICES

<i>Appendix A</i>	Curriculum Vitae – Paul Lochner and Minnelise Levendal
<i>Appendix B</i>	EIA Application Form submitted to DEA and Letters from DEA
<i>Appendix C</i>	Site notice boards
<i>Appendix D</i>	Advertisements
<i>Appendix E</i>	Background Information Document
<i>Appendix F</i>	Database of Interested and Affected Parties
<i>Appendix G</i>	Correspondence to Interested and Affected Parties
<i>Appendix H</i>	Correspondence from Interested and Affected Parties
<i>Appendix I</i>	Notes from meetings held during the review of the Draft Scoping Report

Summary

Project Overview

WKN-Windcurrent SA (Pty) Ltd (referred to as "WKN-Windcurrent") is proposing the construction of a 50 MW wind energy facility on the Broadlands and Saragossa Farms in the Kouga Municipal Area, approximately 3.5 km south of the town of Humansdorp (see locality map in Figure S.1). The proposed project is referred to as the Banna Ba Pifhu Wind Energy Project. WKN-Windcurrent is a joint venture company between Windcurrent SA (Pty) Ltd and WKN Windkraft Nord AG (referred to as "WKN").

The Banna Ba Pifhu Wind Energy Project will be located on the following farms:

- Remainder of Farm 688;
- Portions 2 and 15 of Farm 689; and
- Portion 1 of Farm 868.

WKN Windkraft Nord AG (WKN) was founded in 1990 and is one of the pioneers of the German wind energy market. WKN has international experience in development, financing, erection and operation of wind farms, and has, as of 2010, a realised capacity of 1052.3 MW of wind power. Windcurrent SA (Pty) Ltd is a local company which has been developing renewable energy projects since 2009 in South Africa. The Joint Venture Company which was formed is a South African based renewable energy company that develops, builds and operates renewable energy projects.

The Banna Ba Pifhu Wind Energy Project will consist of approximately 15 to 25 wind turbines pending the capacity of the turbine to be used, i.e. approximately 2 to 3.2 MW each.

A new substation will be built on site to connect to the transmission system. It is proposed to connect the wind farm substation to the existing 66 kV Melkhout / St. Francis overhead powerline. Should this option become unfeasible, a new 132 kV overhead powerline would connect the wind farm to the Melkhout substation.

A separate Basic Assessment (Department of Environmental Affairs Reference number: 12/12/20/1753) was undertaken from January to June 2010 for the establishment of a wind monitoring mast on Farm Broadlands prior to the development of the wind farm. This application was undertaken under the NEMA EIA Regulations published in GN R 385, 386 and 387 on 21 April 2006. Subsequently Amended NEMA EIA Regulations (Notices GN R. 543, 544, 545, and 546) were published in the Government Gazette No. 33306 of 18 June 2010, and came into effect from 2 August 2010 (referred to as the 2010 EIA Regulations). A wind

monitoring mast is no longer a listed activity in terms of the 2010 EIA Regulations. WKN-Windcurrent intends to erect a maximum of two wind monitoring masts on Farm Broadlands.

Objective and justification of the Project

The objective of this project is to generate electricity that will be fed into the national or the provincial grid by erecting a wind farm totalling 50 MW. At a national level, renewable energy has the potential to play an important role in South Africa through diversifying the sources of power generation and reducing the carbon footprint from fossil fuel power generation, such as coal fired power stations.

Currently, approximately 93% of South Africa's power generation is derived from coal. The proposed WKN-Windcurrent project of 50 MW could offset over 100 000 tonnes of CO₂ per year, or 2 000 000 tonnes of CO₂ over the lifetime (20 years) of the project. Wind farms have a relatively short construction lead time and could therefore be quickly developed to meet South Africa's power need. Coal fired power stations used approximately 292 million cubic metres of water, or 1.5% of national water consumption, for electricity generation during 2005. The future availability and treatment costs of water therefore present a serious challenge for the economic sustainability of South Africa's current (coal-based) electricity supply.

In mid-2011, the South African government indicated a change in pricing strategy for renewable energy. Instead of applying a predetermined renewable-energy feed-in tariff (Refit), as previously indicated, the government would conduct a selection process that would involve both price and non-price elements. This requires bidders to propose their price per MWh for the energy output to be generated, along with full or partial inflation indexation. The price indication would be for the first 20 years of operation, or for the duration of the power purchase agreement (PPA). On 3 August 2011, the Department of Energy (DoE) released the qualification and proposal documentation for South Africa's first renewable energy independent power producer (IPP) tender process, and announced that it has allocated a total of 3 725 MW capacity across various renewables technologies, with 1 850 MW set aside for onshore wind. This allocation to wind energy is an increase on the 1 025 MW set out for the first procurement round in the Integrated Resource Plan (IRP) 2010-2030 (Source: Engineering News, 4 & 5 August 2011).

Project description

The key components of the project are:

Wind monitoring mast

To guide project design and further investment decisions and to gather the necessary site specific wind data, WKN-Windcurrent will erect a maximum of two wind monitoring masts to collect wind data for a period of approximately 12 - 24 months. The proposed masts will be approximately 100 m high with securing stays on three sides. The mast will have anemometers at different heights on the mast. When the 12-24 month monitoring period is complete the mast can be dismantled and re-used elsewhere.

Wind turbines

1. 15 to 25 turbines (the actual number will be dependent on the capacity of the turbines selected in the range between 2 and 3.2 MW), with an expected hub height from 80 m to 105 m and a blade diameter from 90 m to 117 m.
1. Turbines will be supported on foundations dimensioned to the geotechnical properties, for example reinforced concrete spread foundations of approximately 20 m by 20 m and 3 m in depth.
2. Electrical transformers will be placed beside each turbine or in the nacelle of each turbine.
3. Hard standing areas will be established adjacent to each turbine for use by cranes during construction and retained for maintenance use throughout the life span of the project.
4. Gravel roads, approximately 5 m wide, will be necessary to provide access to each turbine site, with the intent being to upgrade existing roads as far as possible.

Electrical connections

1. The wind turbines will be typically connected to each other and to the substation using medium voltage cables which will, in most cases, be buried approximately 1 m below ground, except where a technical assessment of the proposed design suggests that above ground lines are appropriate. The final internal underground cabling design will not traverse any sensitive areas as identified by the environmental specialists. The impact through trenches for the underground cabling can thus be minimised by decreasing the total lengths needed.
2. A new substation will be built on site to connect to the distribution or transmission system (maximum size of 70 m by 70 m). It is proposed to connect the wind farm substation to the existing 66 kV Melkhout / St. Francis overhead powerline, which passes through the site. Should this option become unfeasible, a new 132 kV overhead powerline would connect the wind farm to the Melkhout substation, which is located approximately 7 km north of the site.

3. The connection from the new substation to the Eskom grid line would be via underground cabling or a stretch of over head line supported on an intermediate pole(s), depending on the location of the substation relative to the 66 kV line.

Other infrastructure

1. Operations and maintenance building: A single storey building, maximum 5000 m², with warehouse / workshop space and access, office and telecoms space and security and ablution facilities as required. This preferably should be situated close to the substation.
2. Fencing as required.

Temporary activities during construction

1. A lay down area (alongside an access route) of maximum area 10 000 m² is necessary for the assembly of the turbine components– this hard standing area could be temporary or if the landowner prefers, left for long-term use.
2. The overall site compound for contractors would be approximately 5000 m².
3. Existing borrow pits will be used as far as possible for road upgrades. The size of these pits will be dependent on the terrain and need for granular fill material for use in construction.
4. At the end of construction these borrow pits will be backfilled as much as possible using surplus excavated material from the foundations.

Construction consists of three distinct components: civil construction; electrical installation and wind turbine erection; and commissioning. These phases are expected to require a total period of 8 to 15 months.

The operational life span of the wind turbines is expected to be 20 years. Turbine life can be extended beyond 20 years through regular maintenance and/or upgrades in technology.

The final choice of the type of turbines will be based on ease of erection, availability and suitability to the wind regime, amongst other criteria.

Wind turbines can be operated in parallel with farming activities. Internationally it is common practice for farming to continue whilst wind turbines are in operation leading to greater efficiency of land use and no loss of economic activity, but an added passive income for the landowner. Internationally, wind turbines and related components take up between 2% and 5% of the surface area of the wind farm, allowing other activities such as farming to continue on the land. The farm covers approximately 1138 hectares (ha). After construction, the loss of agricultural land was determined at approximately 0.87 % of the total farm area. Current cattle farming activities would continue beneath and around the turbines.

In addition to the application for a proposed wind farm, WKN-Windcurrent also submitted an application to DEA for the erection of a 4.5 MW Photovoltaic (PV) solar power project on portion 15 of farm 689 and portion 1 of farm 868 (DEA reference number: 12/12/20/2236). These properties are included in this application for the proposed Banna Ba Pifhu wind energy

facility. The PV project comprises a Basic Assessment. A Draft Basic Assessment Report has been released for public comment from 15 June 2011 until 26 July 2011 (CSIR Ref No: Stel General: 9291). WKN-Windcurrent wishes to diversify the use of renewable energy resources by erecting a solar and a wind energy facility on the same farms.

Need for an EIA

Amended NEMA EIA Regulations (Notices GN R. 543, 544, 545, and 546) were published in the Government Gazette No. 33306 of 18 June 2010, and came into effect from 2 August 2010 (referred to as the **2010 EIA Regulations**). This EIA application by WKN-Windcurrent is undertaken under the 2010 EIA Regulations. In terms of these regulations, Scoping and Environmental Impact Assessment are required as the project includes, amongst others, the activity listed in GN 545:

- 1) *The construction of facilities or infrastructure for the generation of electricity where the electricity output is 20 megawatts or more.*

Chapters 1 and 4 of this Final Scoping Report contain a list of activities contained in GN R 544, 545 and 546 that are triggered by the various project components and form part of this Scoping and Environmental Impact Assessment process.

Submission of the Final Scoping Report

This EIA process is currently at the stage where the Final Scoping Report is submitted to the national Department of Environmental Affairs (DEA) for decision-making. Interested and Affected Parties will be notified that they have 21 days to comment on the Final Scoping Report. They will be requested to send their comments directly to DEA and to provide copies to the Public participation consultant, Ms Sandy Wren. The Final Scoping Report will be placed in the Jeffrey's Bay and Humansdorp Municipal Libraries and on the project website at www.publicprocess.co.za.

Identification of Issues

The Final Scoping Report includes the issues identified thus far in the scoping process. The project and EIA process were advertised in one regional newspaper, The Herald, and one local newspaper, Our Times (both were advertised on 19 May 2011). In addition to the newspaper advertisements, letters with personal notification regarding the EIA process were mailed to all pre-identified key stakeholders on the database, which at the time consisted of 44 I&APs (Letter 1). I&APs were provided a 30-day period within which to raise issues and/or register their interest on the project database, this period extended from the 19 May 2011 to the 20 June 2011. Letter 2 was mailed to I&APs to notify them of the release of the Draft Scoping Report for a 40-day commenting period from 7 July 2011 to 17 August 2011.

The comments received from I&APs, before and after the release of the Draft Scoping Report, have been captured in the Issues and Responses Trail contained in Chapter 5 of this report. Appendix H contains copies of all the comments received.

In summary, the following issues have been identified prior to the release of the Draft Scoping Report (number in brackets indicates the number of issues raised):

1. Issues related to potential bird impacts (1)
2. Issues related to potential traffic impacts (1)
3. Issues related to potential heritage impacts (2)
4. Project detail (1)

In addition to the above, the following issues have been identified after the release of the Draft Scoping Report (number in brackets indicates the number of issues raised):

5. Issues related to potential visual impacts (3)
6. Issues related to potential bird impacts (5)
7. Issues related to potential bat impacts (1)
8. Issues related to potential impacts on water courses and wetlands (3)
9. Issues related to potential traffic impacts (1)
10. Potential Socio Economic Impacts (9)
11. Potential impact on Agriculture (1)
12. Project Detail (3)
13. EIA process and public participation (5)
14. General (3)

The *draft Plan of Study for EIA* (Chapter 6 of the Final Scoping Report) presents the approach to the forthcoming EIA phase. This includes the Terms of Reference for the various specialist studies that are proposed to address the issues raised, where necessary. The section below summarises the main issues to be addressed in the specialist studies. These studies will consider the construction, operation and decommissioning phases of the project.

- **Flora and Fauna (excluding avifauna)**
 - Impact of the turbines and associated activities on the vegetation and animals, with special attention to the potential occurrence of critical biodiversity areas, wetlands and red data species.
- **Birds**
 - Assessment of the potential direct, secondary and cumulative impacts on avifauna, both positive and negative, associated with the proposed project.
 - In addition to the specialist study, a pre-construction bird monitoring programme is being undertaken. The results and recommendations of this monitoring programme will be included in the specialist study.
- **Bats**
 - Identify and assess the potential impacts of the wind project on bats and bat mortality.
 - In addition to the specialist study, a pre-construction bat monitoring programme will be undertaken. The results and recommendations of this monitoring programme will be included in the specialist study.
- **Visual**

Identify and assess the potential visual impacts of the wind project on landscape character and sense of place, including a viewshed analysis and taking into consideration factors such as visual sensitivity and visual absorption capacity.
- **Noise**
 - Identify and assess the potential noise impacts associated with the proposed project on residences (i.e. noise receptors).
- **Socio-economic**
 - Identify and assess the potential socio-economic impacts associated with the proposed project (e.g. job creation, skills development and training, community investment programmes, promotion of secondary industries etc) at local and wider scales as relevant.
- **Heritage** (archaeology, palaeontology, historical and cultural aspects)
 - Identify and assess potential impact on archaeology (e.g. stone age artefacts)
 - Identify and assess potential impacts on the built environment or places of historical and cultural significance (e.g. national monuments and grave sites).
 - Identify and assess potential impact of excavations on palaeontology (e.g. fossils).
- **Agriculture**
 - Identify and assess potential impact on agricultural activities on site and determine the agricultural soil potential.



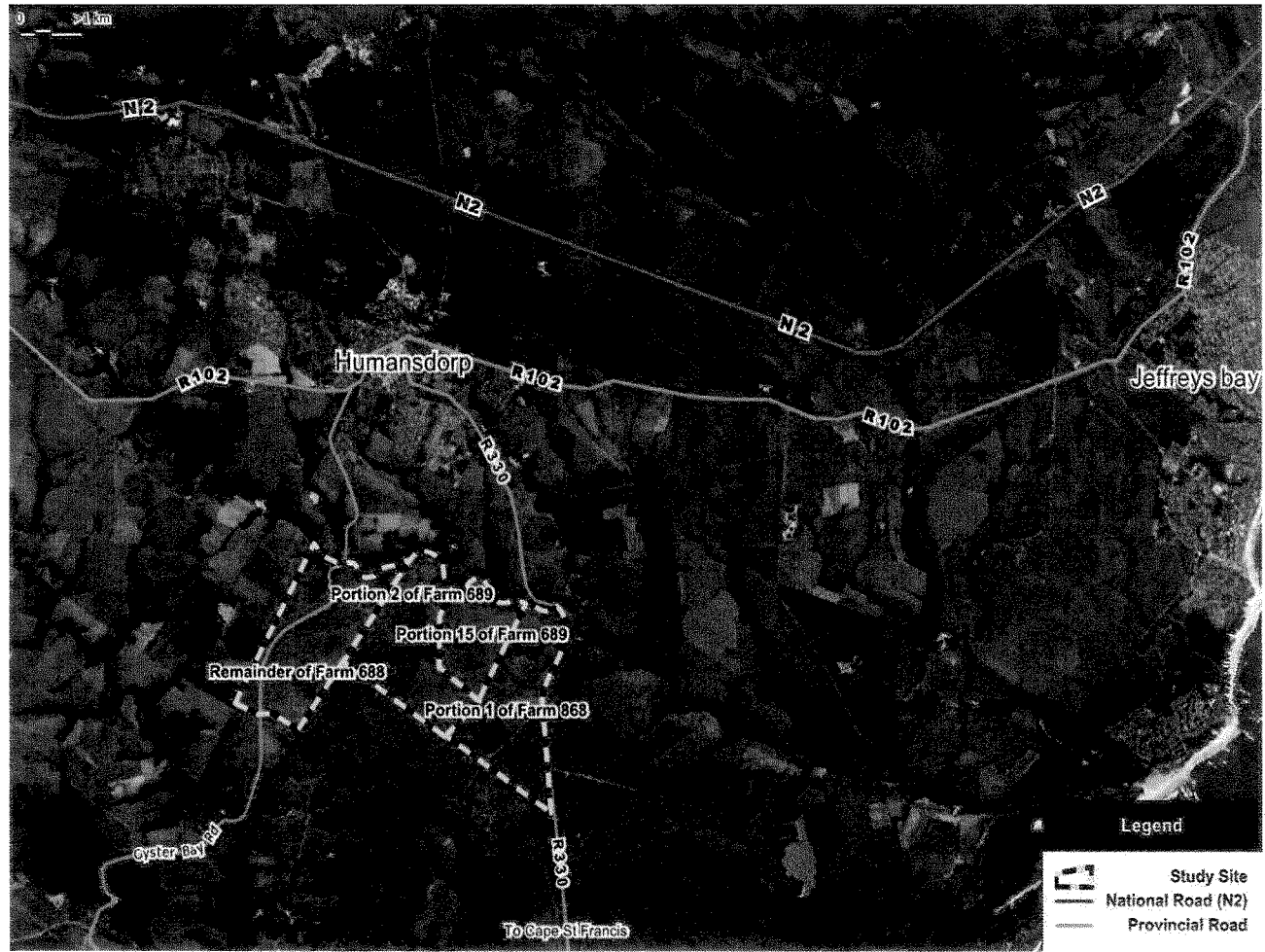
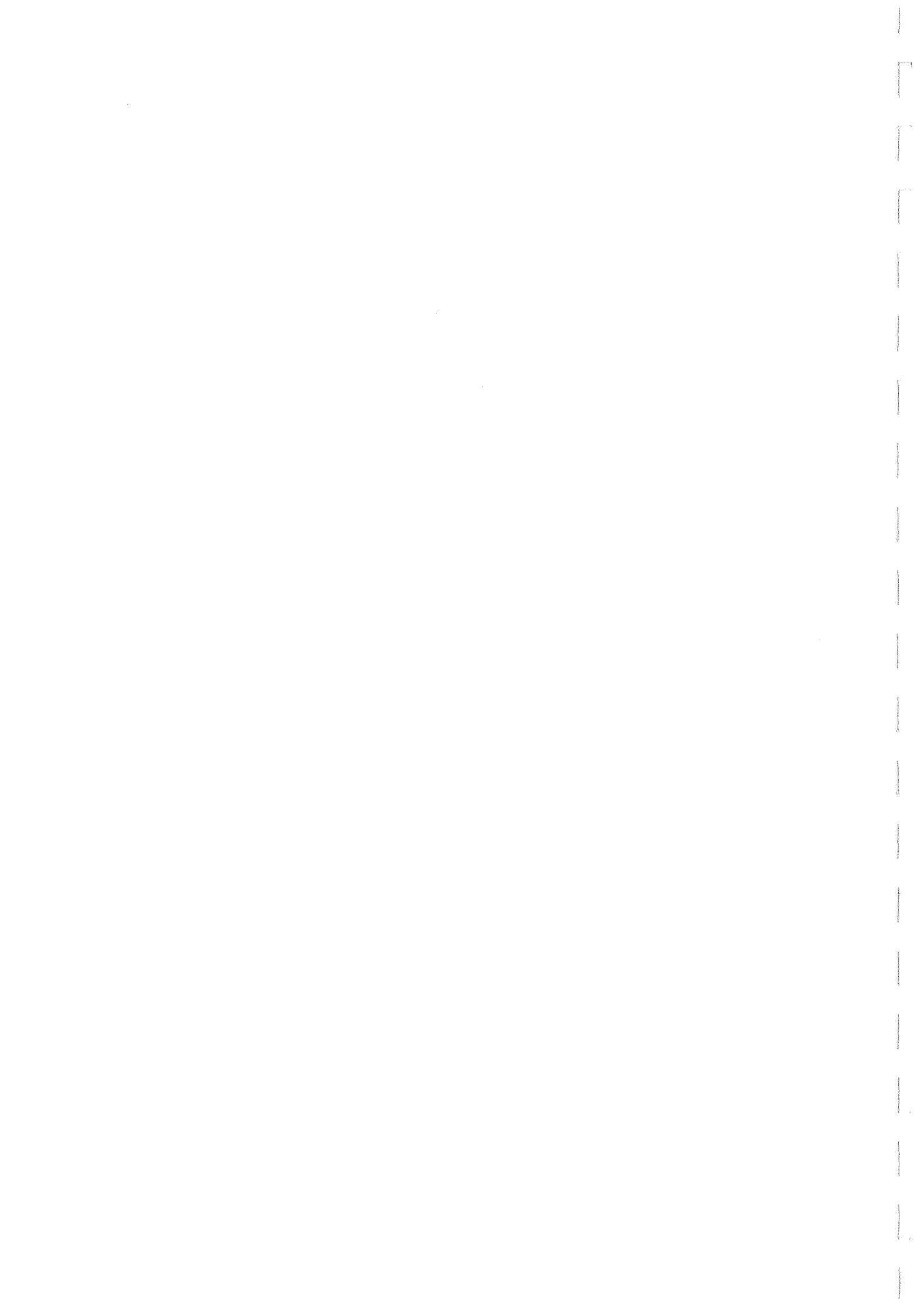
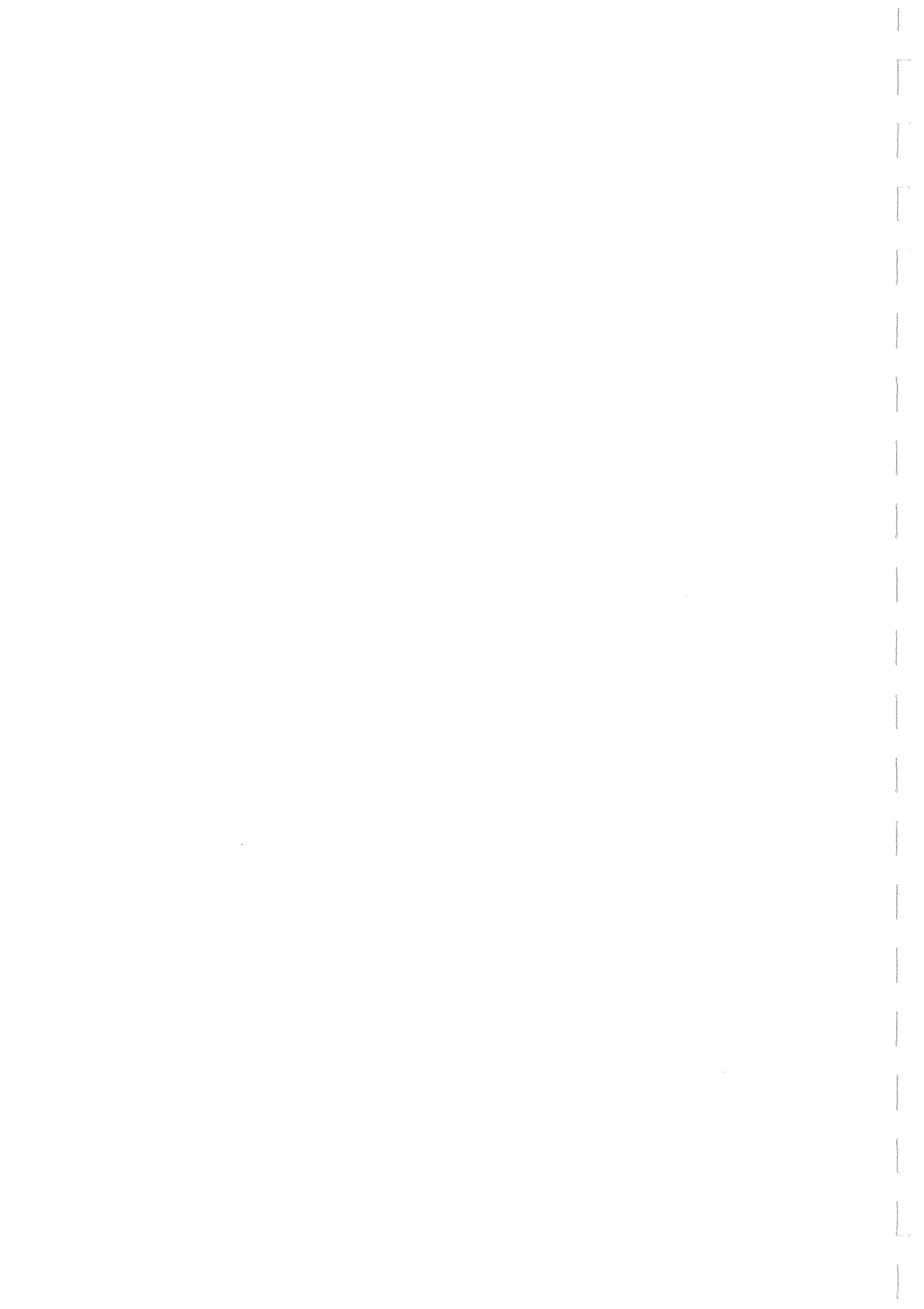


Figure S.1: Locality map of the proposed Banna Ba Pifhu Wind Energy Project near Humansdorp in the Eastern Cape (satellite image).



Glossary

<i>BA</i>	Basic Assessment
<i>BID</i>	Background Information Document
<i>CO₂</i>	Carbon Dioxide
<i>CSIR</i>	Council for Scientific and Industrial Research
<i>CSP</i>	Concentrated Solar Power
<i>DEA</i>	National Department of Environmental Affairs
<i>DEDEA</i>	Department of Economic Development & Environmental Affairs
<i>DEIA</i>	Draft Environmental Impact Assessment
<i>DoE</i>	Department of Energy
<i>DSR</i>	Draft Scoping Report
<i>FSR</i>	Final Scoping Report
<i>EAP</i>	Environmental Assessment Practitioner
<i>EIA</i>	Environmental Impact Assessment
<i>EMP</i>	Environmental Management Plan
<i>EMPr</i>	Environmental Management Programme
<i>I&AP</i>	Interested and Affected Party
<i>IDP</i>	Integrated Development Plan
<i>IEP</i>	Integrated Energy Plan
<i>IPP</i>	Independent Power Producer
<i>IRP</i>	Integrated Resource Plan for electricity
<i>kWh</i>	Kilowatt Hours
<i>LTMS</i>	Long Term Mitigation Strategy
<i>MW</i>	Megawatts
<i>NEMA</i>	National Environmental Management Act (Act 107 of 1998)
<i>NERSA</i>	National Energy Regulator of South Africa
<i>NHRA</i>	National Heritage Resources Act (Act 25 of 1999)
<i>PPA</i>	Power Purchase Agreement
<i>PPC</i>	Public Process Consultants
<i>PSEIA</i>	Plan of Study for EIA
<i>PV</i>	Photovoltaic
<i>REFIT</i>	Renewable Energy Feed-in Tariff
<i>REPA</i>	Renewable Energy Purchasing Agency
<i>SAHRA</i>	South African Heritage Resources Agency
<i>SDF</i>	Spatial Development Framework
<i>ToR</i>	Terms of Reference

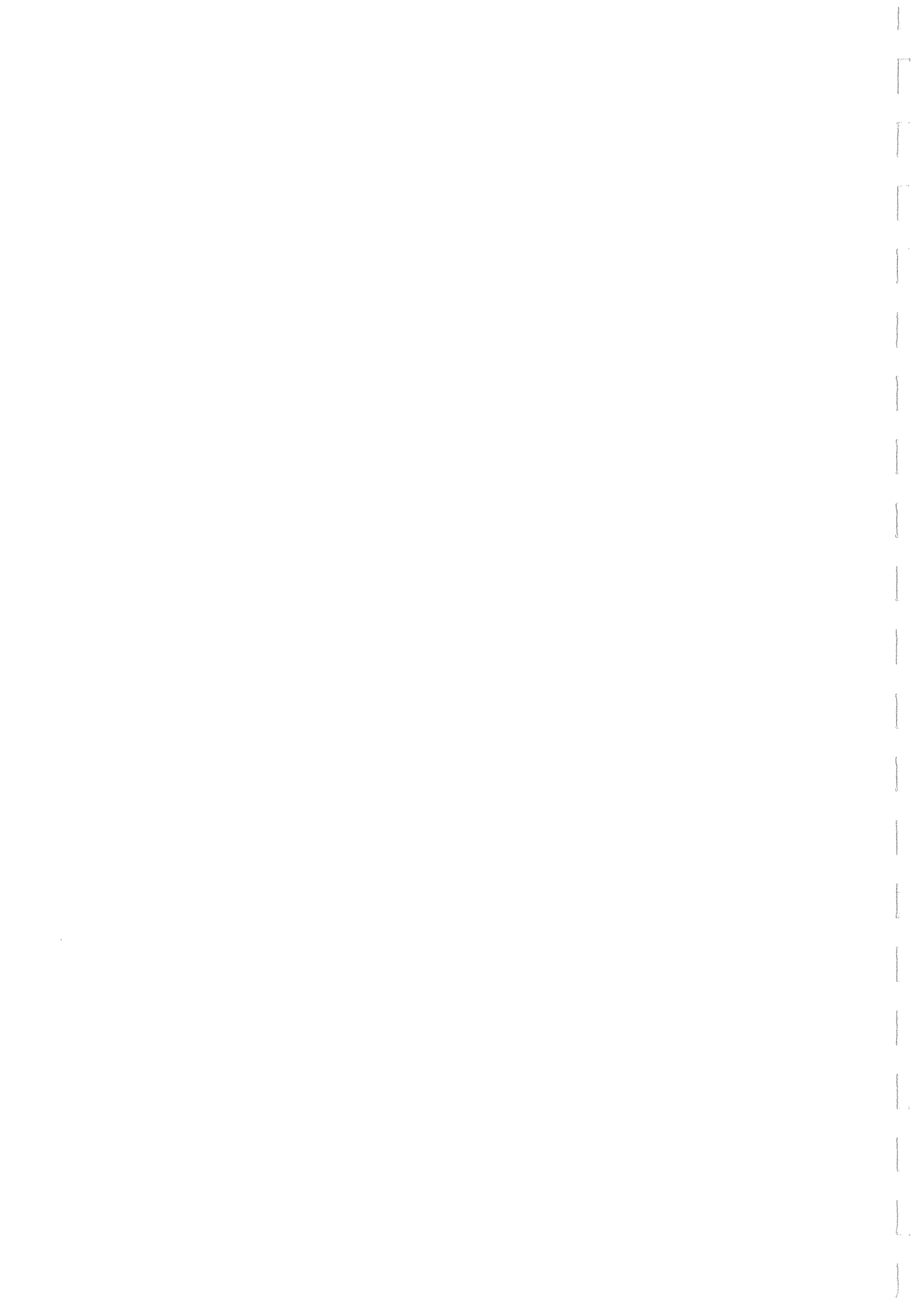


**Environmental Impact Assessment for the
proposed Banna Ba Pifhu Wind Energy Project
near Humansdorp, Eastern Cape:
Final Scoping Report**

Chapter 1:

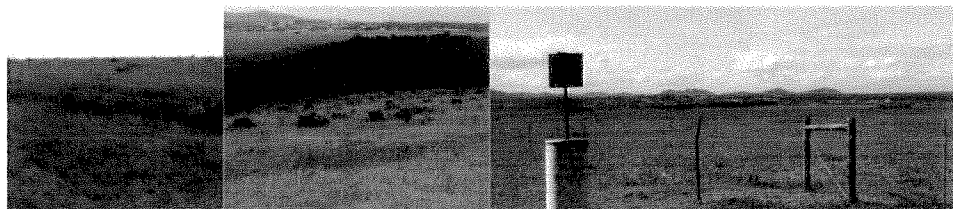
Introduction





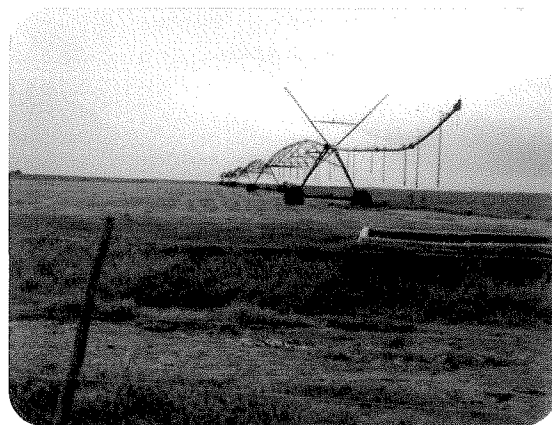
Contents

1. INTRODUCTION	1-3
1.1 BACKGROUND AND PROJECT OVERVIEW	1-3
1.2 ABOUT THE PROJECT PROPONENT	1-6
1.3 NEED AND JUSTIFICATION FOR THE PROJECT	1-6
1.4 REQUIREMENTS FOR AN ENVIRONMENTAL IMPACT ASSESSMENT	1-8
1.5 EIA TEAM	1-10
1.6 DETAILS AND EXPERTISE OF THE ENVIRONMENTAL ASSESSMENT PRACTITIONER (EAP)	1-10
1.7 OBJECTIVES OF THE SCOPING REPORT	1-11
1.8 ENERGY PLANNING CONTEXT AND STRATEGIC INITIATIVES FOR SOUTH AFRICA	1-13
1.8.1 <i>Current energy context: coal-based power generation</i>	1-13
1.8.2 <i>Policy context for promotion of renewable energy</i>	1-14
1.8.3 <i>Integrated Strategic Energy Planning for South Africa</i>	1-14



Tables & Figures

Table 1.1:	Listed activities in Government Gazette No. 33306 of 2010 (2010 EIA Regulations) that potentially form part of the proposed Banna Ba Pifhu Wind Energy Project near Humansdorp.	1-9
Table 1.2:	EIA Team.	1-10
Table 1.3:	Summary of where requirements of a Scoping Report (in terms of Section 28 of the NEMA EIA Regulations) are provided in this Final Scoping Report.	1-12
Figure 1.1(a):	Locality map of the proposed Banna Ba Pifhu Wind Energy Project near Humansdorp in the Eastern Cape (satellite image).	1-4
Figure 1.1(b):	Locality map of the proposed Banna Ba Pifhu Wind Energy Project near Humansdorp in the Eastern Cape.	1-5
Figure 1.2:	Eskom's installed generating capacity profile from 1955 to 2060.	1-15
Figure 1.3:	Predicted future regional electricity mix for southern Africa (IRP 2010-2030 Rev2 Final Report)	1-16



1. INTRODUCTION

1.1 BACKGROUND AND PROJECT OVERVIEW

WKN-Windcurrent SA (Pty) Ltd (referred to as "WKN-Windcurrent") is proposing the construction of a 50 MW wind energy facility on the Broadlands and Saragossa Farms in the Kouga Municipal Area, approximately 3.5 km south of the town of Humansdorp. The proposed project is referred to as the Banna Ba Pifhu Wind Energy Project. WKN-Windcurrent is a joint venture company between Windcurrent SA (Pty) Ltd and WKN Windkraft Nord AG (referred to as "WKN").

The Banna Ba Pifhu Wind Energy Project will be located on the following farms:

- Remainder of Farm 688;
- Portions 2 and 15 of Farm 689 and
- Portion 1 of Farm 868.

The locality maps provided in Figure 1.1 provide an overview of the erven included in this project as well as an overview of the area. The Banna Ba Pifhu Wind Energy Project will consist of approximately 15 to 25 wind turbines pending the capacity of the turbine to be used, i.e. approximately 2 to 3.2 MW each.

A new substation will be built on site to connect to the transmission system. It is proposed to connect the wind farm substation to the existing 66 kV Melkhout / St. Francis overhead powerline. Should this option become unfeasible, a new 132 kV overhead powerline would connect the wind farm to the Melkhout substation.

A separate Basic Assessment (Department of Environmental Affairs Reference number: 12/12/20/1753) was undertaken from January to June 2010 for the establishment of a wind monitoring mast on Farm Broadlands prior to the development of the wind farm. This application was undertaken under the NEMA EIA Regulations published in GN R 385, 386 and 387 on 21 April 2006. Subsequently Amended NEMA EIA Regulations (Notices GN R. 543, 544, 545, and 546) were published in the Government Gazette No. 33306 of 18 June 2010, and came into effect from 2 August 2010 (referred to as the 2010 EIA Regulations). A wind monitoring mast is no longer a listed activity in terms of the 2010 EIA Regulations. WKN-Windcurrent intends to erect a maximum of two wind monitoring masts on Farm Broadlands.

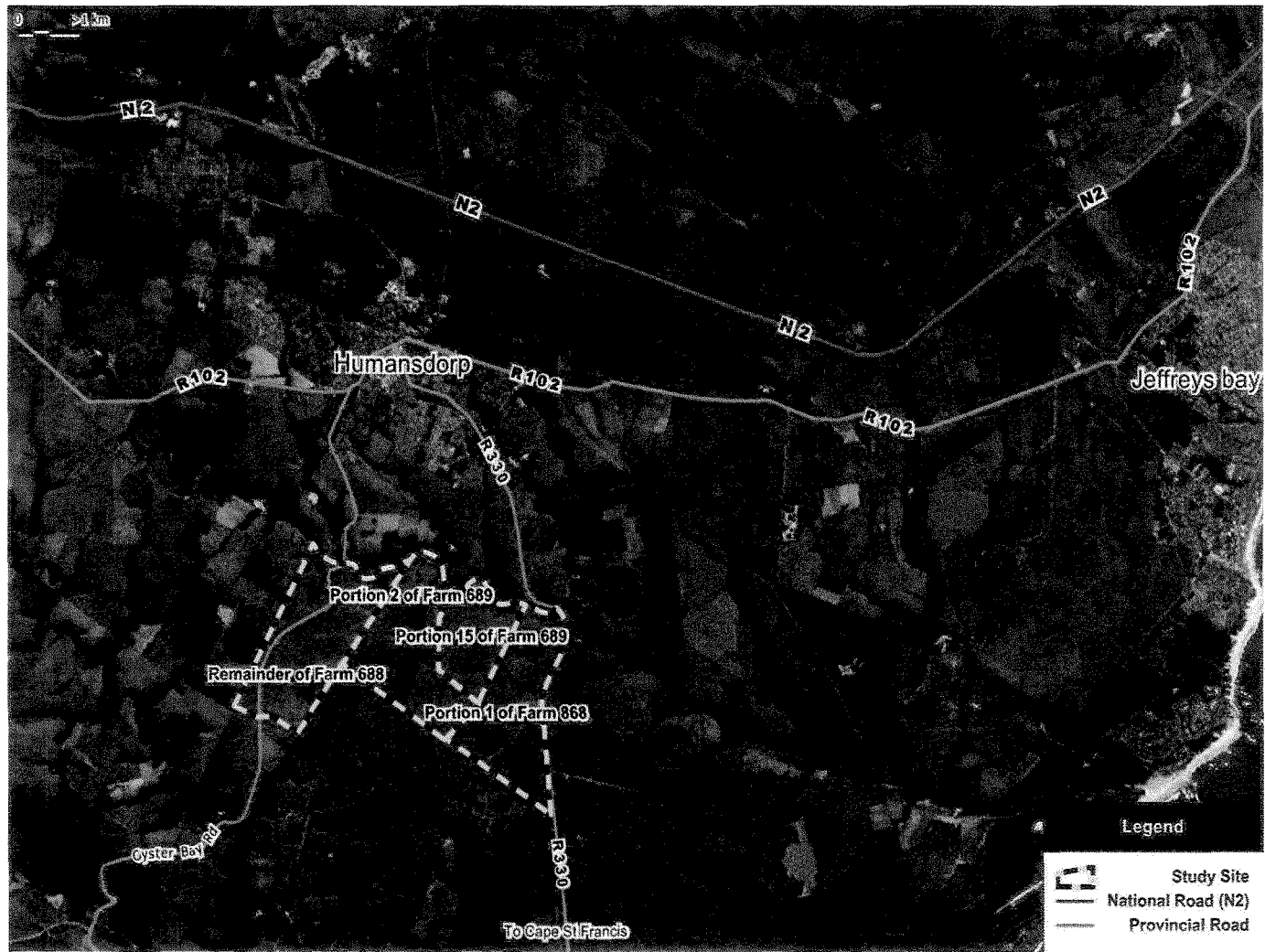


Figure 1.1(a): Locality map of the proposed Banna Ba Pifhu Wind Energy Project near Humansdorp in the Eastern Cape (satellite image).

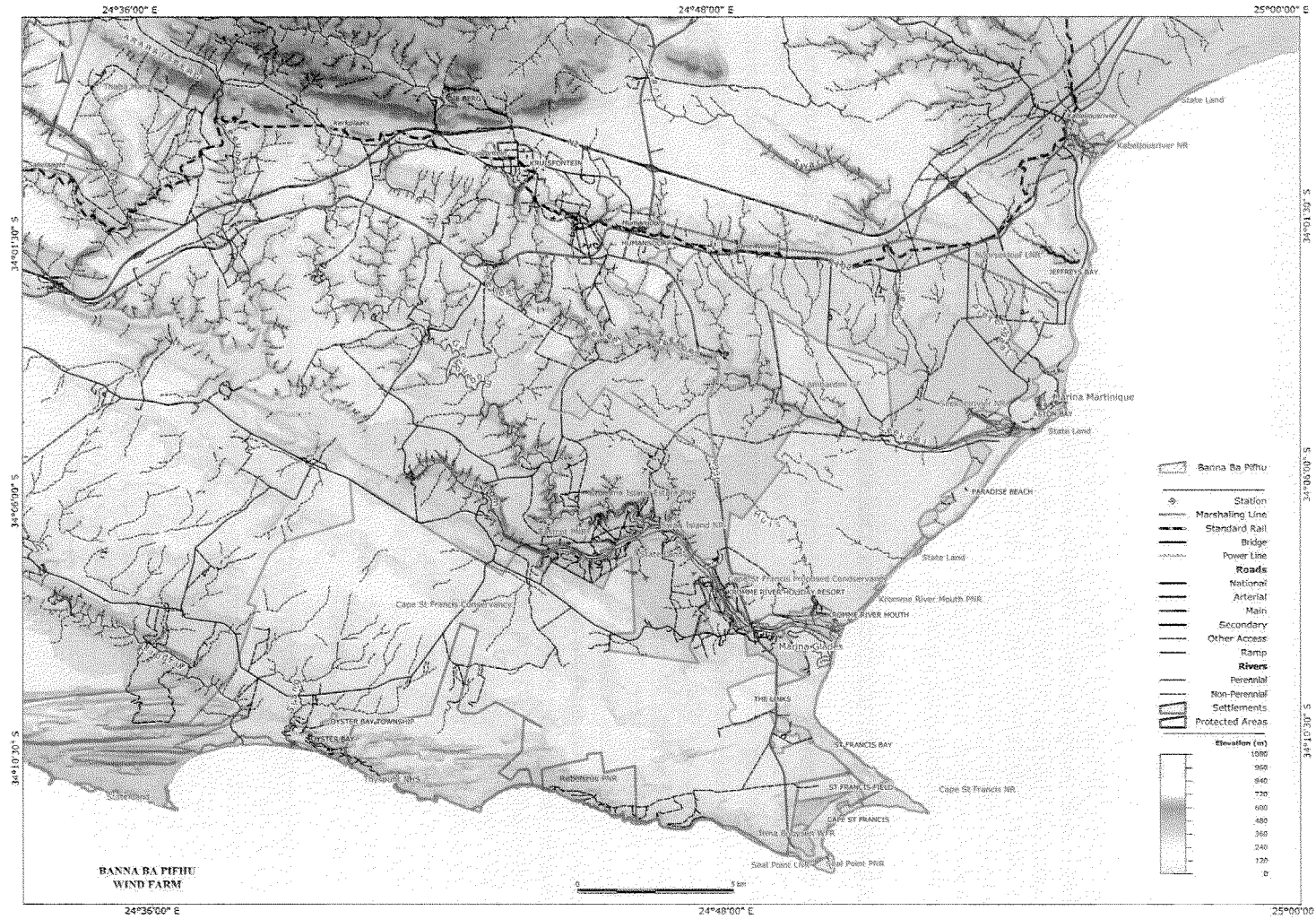


Figure 1.1(b): Locality map of the proposed Banna Ba Pifhu Wind Energy Project near Humansdorp in the Eastern Cape.

1.2 ABOUT THE PROJECT PROPONENT

WKN Windkraft Nord AG (WKN) was founded in 1990 and is one of the pioneers of the German wind energy market. WKN has international experience in development, financing, erection and operation of wind farms, and has, as of 2010, a realised capacity of 1052.3 MW wind power. Windcurrent SA (Pty) Ltd is a local company which has been developing renewable energy projects since 2009 in South Africa. The Joint Venture Company which was formed is a South African based renewable energy company that develops, builds and operates renewable energy projects.

1.3 NEED AND JUSTIFICATION FOR THE PROJECT

The aim of this project is to generate electricity that will be fed into the national or the provincial grid by erecting a wind farm of 50 MW. In mid-2011, the South African government indicated a change in pricing strategy for renewable energy. Instead of applying a predetermined renewable-energy feed-in tariff (Refit), as previously indicated, the government would conduct a selection process that would involve both price and non-price elements. This requires bidders to propose their price per MWh for the energy output to be generated, along with full or partial inflation indexation. The price indication would be for the first 20 years of operation, or for the duration of the power purchase agreement (PPA). On 3 August 2011, the Department of Energy (DoE) released the qualification and proposal documentation for South Africa's first renewable energy independent power producer (IPP) tender process, and announced that it has allocated a total of 3 725 MW capacity across various renewables technologies, with 1 850 MW set aside for onshore wind, 200 MW for concentrated solar thermal, a further 1 450 MW for solar photovoltaic solutions, 12.5 MW for both biomass and biogas, 25 MW for landfill gas capacity, 75 MW for small hydro, and a further 100 MW for small-scale IPP projects of less than 5 MW. This allocation to wind energy is an increase on the 1 025 MW set out for the first procurement round in the Integrated Resource Plan (IRP) 2010-2030 (Source: Engineering News, 4 & 5 August 2011).

At a national scale, renewable energy (in particular, wind energy) has the potential to play an important role in meeting South Africa's energy demand through diversifying the sources of power generation whilst reducing the country's carbon footprint from power generation. Currently, approximately 93% of South Africa's power generation is derived from coal. The proposed WKN-Windcurrent project of 50 MW could offset over 100 000 tonnes of CO₂ per year, or 2 000 000 tonnes of CO₂ over the lifetime (20 years) of the project.^{1 2} Wind farms have a relatively short construction lead time and could therefore be quickly developed to meet South Africa's power need. Coal fired power stations used approximately 292 million cubic metres of water, or 1.5% of national water consumption, for electricity generation during 2005.

¹ <http://www.iea.org/co2highlights/>

² http://www.sunearthtools.com/dp/tools/CO2-emissions-calculator.php?lang=de#txtCO2_3

The future availability and treatment costs of water therefore present a serious challenge for the economic sustainability of South Africa's current (coal-based) electricity supply.

The Eastern Cape Province is reliant on electricity imports from other provinces yet houses significant industrial and rural development potential. Power from the national grid is largely generated from coal power stations, and transmitted considerable distances to the Eastern Cape (e.g. from Mpumalanga). This leads to significant transmission losses and local grid instabilities. Electricity supply to the Eastern Cape Province is further constrained by transmission infrastructure. Eskom currently supplies approximately 1 400 MW of electricity to the Eastern Cape Province.

Against the background of international commitments to generation of "green energy" with low or zero CO₂ emissions, the intention of this project is to generate additional electricity that will be fed into the national grid by installing a wind farm with a capacity of 50 MW. The objective of WKN-Windcurrent project is to support the growing demand for electricity by means of renewable energy and to lower the emissions of carbon dioxide (CO₂) into the atmosphere. Electricity generated by wind energy, that replaces the use of fossil fuels, results in greenhouse gas emission reductions. Wind energy is a national imperative. A constrained national energy supply and South Africa's commitments to meeting its 2013 CO₂ reduction target and to the Kyoto Protocol require the rapid deployment of renewable energy, of which wind power has the greatest commercial potential.

The **Integrated Resource Plan for Electricity (IRP)**³ for South Africa is a subset of the **Integrated Energy Plan (IEP)** for the Republic of South Africa which was published on 19 March 2003. Its Draft Executive Summary and **Medium Term Risk Mitigation Plan**⁴ were published by the Department of Energy on 8 October 2010. The objective for the IRP is to develop a sustainable electricity investment strategy for generation and transmission of electricity in South Africa for the next 25 years.

At a provincial level, the project aims to assist the Eastern Cape in achieving improved energy stability and security. The local wind climate in the Humansdorp region creates the potential for a wind energy project to generate electricity, thereby contributing towards the provision of sustainable renewable energy.

Further information on **energy planning and strategic initiatives** in South Africa, and the consequent need for the development of wind energy projects, is provided in Section 1.7. Further information on the **objectives** of the proposed project is provided in Section 2.3.

³ *Executive Summary of the Draft Integrated Electricity Resource Plan for South Africa - 2010 to 2030*. Available online: http://www.doe-irp.co.za/content/Executive_Summary_Draft_IRP2010_8Oct2010.pdf. Department of Energy. Accessed 1 December 2010.

⁴ *Medium Term Risk Mitigation Plan (MTRM) for Electricity in South Africa - 2010 to 2016*. http://www.doe-irp.co.za/content/Medium_Term_Risk_Mitigation_Project_Phase_1.pdf. Department of Energy. Accessed 1 December 2010.

1.4 REQUIREMENTS FOR AN ENVIRONMENTAL IMPACT ASSESSMENT

Amended NEMA EIA Regulations (Notices GN R. 543, 544, 545, and 546) were published in the Government Gazette No. 33306 of 18 June 2010, and came into effect from 2 August 2010 (referred to as the **2010 EIA Regulations**). This EIA application by WKN-Windcurrent is undertaken under the 2010 EIA Regulations. In terms of these regulations, Scoping and Environmental Impact Assessment are required as the project includes listed activities shown in Table 1.1 below.

Table 1.1/...

Table 1.1: Listed activities in Government Gazette No. 33306 of 2010 (2010 EIA Regulations) that potentially form part of the proposed Banna Ba Pifhu Wind Energy Project near Humansdorp.

Listed activities in Government Notices 544, 545, and 546		
Government Notice	Activity No(s)	Describe the relevant Scoping and EIA Activity in writing
GN.R544, 18 June 2010	10	10. The construction of facilities or infrastructure for the transmission and distribution of electricity - (i) outside urban areas or industrial complexes with a capacity of more than 33 but less than 275 kilovolts;
GN.R545, 18 June 2010	1	1. The construction of facilities or infrastructure for the generation of electricity where the electricity output is <i>20 megawatts or more.</i>
	15	15. Physical alteration of undeveloped, vacant or derelict land for residential, retail, commercial, recreational, <i>industrial or institutional use where the total area to be transformed is 20 hectares or more;</i>
	4(a)(ii)(ee)	4. The construction of a road wider than 4 metres with a reserve less than 13,5 metres. (a) In Eastern Cape...: (ii) Outside urban areas, in: (ee) Critical biodiversity areas (Type 1) as identified in systematic biodiversity plans adopted by the competent <i>authority or in bioregional plans;</i>
GN.R546, 18 June 2010	14a (i)	14. The clearance of an area of 5 hectares of more of vegetation where 75% or more of the vegetative cover constitutes indigenous vegetation, except where such removal of vegetation is required for: (a) In Eastern Cape...: <i>(i) All areas outside urban areas;</i>
	16 (iii); (iv) and a (ii)(ff)	16. The construction of: (iii) buildings with a footprint exceeding 10 square metres in size; (iv) infrastructure covering 10 square metres or more where such construction occurs within a watercourse or within 32 metres of a watercourse, measured from the edge of a watercourse, excluding where such construction will occur behind the development setback line. (a) In Eastern Cape, ii. Outside urban areas, in: (ff) Critical biodiversity areas or ecosystem service areas as identified in systematic biodiversity plans <i>adopted by the competent authority or in bioregional plans;</i>

1.5 EIA TEAM

The CSIR has been appointed by WKN-Windcurrent to undertake the EIA required for this project.

The EIA team involved in this EIA is listed in Table 1.2. Most of the specialists are familiar with the area and have been involved in other specialist studies in the area.

Table 1.2: EIA Team.

EIA Management Team		
Paul Lochner	CSIR	<i>Project Leader (EAP-SA)</i>
Minnelise Levendal	CSIR	<i>Project Manager</i>
Specialist Team		
Jamie Pote	Private Consultant	<i>Ecology (Flora and Fauna)</i>
Chris van Rooyen	Chris van Rooyen Consultants	<i>Avifauna (birds)</i>
Stephanie Dippenaar	Private Consultant	<i>Bats</i>
Henry Holland	Mapthis	<i>Visual impacts</i>
Brett Williams	SafeTech	<i>Noise Impacts</i>
Dr Hugo van Zyl	Independent Economic Researchers	<i>Socio-economic impacts</i>
Dr Johan Binneman	Albany Museum	<i>Archaeology</i>
Dr John Almond	NaturaViva	<i>Palaeontology</i>
Mr Johann Lanz	Private Consultant	<i>Soil Agricultural potential</i>
Public Participation Process		
Sandy Wren	Public Process Consultants	<i>Public Participation Process</i>

1.6 DETAILS AND EXPERTISE OF THE ENVIRONMENTAL ASSESSMENT PRACTITIONER (EAP)

The EIA Project Team is being led by Paul Lochner, who has 16 years experience in environmental assessment and management studies, primarily in the leadership and integration functions (refer to Appendix A for his CV). This has included Strategic Environmental Assessments (SEAs), Environmental Impact Assessments (EIAs) and Environmental Management Plans (EMPs). He has been a certified Environmental Assessment Practitioner for South Africa (EAPSA) since July 2003; and has conducted several EIA processes both in South Africa and internationally. Examples of EIAs include the EIA for the 180 MW Jeffrey's Bay Wind Project proposed by Mainstream, EIA for the BioTherm wind energy project near Swellendam, EIA for the InnoWind wind energy projects in the Western Cape, EIA for the Electrawinds wind energy project at Coega in the Eastern Cape, Coega Aluminium Smelter EIA, EIA for the expansion of the container terminal and construction of an administration craft harbour at the Port of Ngqura, Thesen Island EIA at Knysna, Century City Wetlands EIA in Cape Town, and ESIA for a proposed alumina refinery at Sosnogorsk in the Komi Republic of Russia. He has also prepared various EMPs, such as

the EMP for the Rietvlei Wetland Reserve (Cape Town), EMP for Century City wetlands in Cape Town, EMP for Eskom Wind Energy Project (Klipheuwel near Stellenbosch in the Western Cape) and the EMP for the Coega Aluminium Smelter. He has authored several Guidelines, such as the "Overview of Integrated Environmental Management" information document for DEAT in 2004; and the "Guideline for EMPs" published in 2005 by the Western Cape government.

Paul will be supported by a CSIR Project Manager, Minnelise Levendal (refer to Appendix A for her CV). Minnelise was also the project manager for the WKN-Windcurrent Ubuntu wind energy project near Jeffrey's Bay. Minnelise managed the BioTherm wind energy project near Swellendam and is currently managing their wind energy project near Laingsburg. Minnelise managed the Basic Assessment Process for the national Department of Energy for the erection of 10 wind monitoring masts as part of the national wind atlas project. She has also conducted a number of Basic Assessments for the erection of wind monitoring masts. She was part of the Project Implementation Team for South Africa's Second National Communication (SNC) in terms of climate change from 2009 until 2010. SA needs to report on meeting its obligations specified in the Kyoto Protocol. This process was led by the South African Botanical Institute (SANBI), and the CSIR was appointed by SANBI to manage the process.

1.7 OBJECTIVES OF THE SCOPING REPORT

The Scoping Phase of the EIA refers to the process of determining the spatial and temporal boundaries for the EIA and identifying the issues and concerns arising from the proposed project. In broad terms, this involves three important activities:

- Confirming the process to be followed and opportunities for stakeholder engagement;
- Clarifying the project scope and alternatives to be covered; and
- Identifying the key issues to be addressed in the impact assessment phase and the approach to be followed in addressing these issues.

Scoping is achieved by parallel initiatives of consulting with the lead authorities involved in the decision-making for this EIA application; consulting with the public to ensure that local issues are well understood; and consulting with the EIA specialist team to ensure that "technical" issues are identified. The scoping process is supported by a review of relevant background literature on the local area. Through this comprehensive process, the environmental assessment can identify and focus on **key issues** requiring assessment and identify **reasonable alternatives**.

Issues raised in response to the Draft Scoping Report were captured in the Issues Trail (Chapter 5 of the Final Scoping Report). These documents will be submitted to the competent authority, the DEA, for approval. This approval is planned to mark the end of the Scoping phase, after which the EIA process moves into the impact assessment and reporting phase.

In terms of legal requirements, a crucial objective of the Scoping Report is to satisfy the requirements of Regulation 28 of the NEMA EIA Regulations as published in Government

Notice No. R.543. These sections regulate and prescribe the content of the Scoping Report and specify the type of supporting information that must accompany the submission of the Scoping Report to the authorities. An overview of where the requirements of Section 28 are addressed in this Final Scoping Report is presented in Table 1.3.

Furthermore, this process is designed to satisfy the requirements of Regulations 54, 55, 56 and 57 of the NEMA EIA Regulations relating to the public participation process and, specifically, the registration of and submissions from Interested and Affected Parties.

Table 1.3: Summary of where requirements of a Scoping Report (in terms of Section 28 of the NEMA EIA Regulations) are provided in this Final Scoping Report.

Section	Requirement for Scoping Report	Where this is provided in this Final Scoping Report
28 (1)(a)	Details of the EAP who prepared the report.	Appendix A
28 (1)(b)	Description of the proposed activity and reasonable alternatives	Chapters 2 & 4
28 (1)(c)	Description of feasible and reasonable alternatives	Chapter 4
28 (1)(d)	Description of the property and the location of the activity on the property	Chapters 1 and 3
28 (1)(e)	Description of the affected environment	Chapter 3
28 (1)(f)	Identification of legislation and guidelines considered for the preparation of Scoping Report	Chapter 4
28 (1)(g)	Description of environmental issues and potential impacts, including cumulative impacts	Chapter 6
28 (1)(h)(i)	Steps taken to notify potential interested and affected parties (I&APs) of the application	Chapter 4 Appendix G
28 (1)(h)(ii)	Proof of notice boards, advertisements and notices to I&APs	Appendices C, D & G
28 (1)(h)(iii)	List of all persons or organizations identified and registered as I&APs in terms of regulation 55	Appendix F
28 (1)(h)(iv)	Summary of issues raised by I&APs, date received and response by EAP	Chapter 5
28 (1)(i)	Description of the need and desirability of the proposed activity	Chapters 2 & 4
28 (1)(j)	Description of identified potential alternatives to the proposed activity, including advantages and disadvantages that the proposed activity or alternatives may have on the environment and the community that may be affected by the activity	Chapters 2 & 4
28 (1)(k)	Copies of representations, objections and comments received in connection with the application or Scoping Report from I&APs	Appendix H
28 (1)(l)	Copies of the minutes of meetings held by the EAP with I&APs and other role players	Appendix I and to be included in Final EIA Report
28(1)(m)	Any responses by the EAP to those representations, objections, comments and views	Chapter 5
28 (1)(n)(i)	Description of tasks undertaken as part of the EIA, including	Chapter 6

Section	Requirement for Scoping Report	Where this is provided in this Final Scoping Report
	specialists reports and the manner in which tasks will be undertaken	
28 (1)(n)(ii)	Indication of stages at which competent authority will be consulted	Chapter 6
28 (1)(n)(iii)	Description of proposed method for assessing environmental issues and alternatives, including "no project" alternative	Chapters 4 and 6
28 (1)(i)(iv)	Particulars of public participation process during EIA	Chapter 4
28 (1)(o)	Specific information required by competent authority	No specific information was required
28 (2)	Guidelines applicable to the kind of activity which is the subject of the application	Chapter 4
28 (3)	Detailed, written proof of investigation as required by section 24(4)(b)(i) of the Act and motivation if no reasonable or feasible alternatives	Chapter 4

1.8 ENERGY PLANNING CONTEXT AND STRATEGIC INITIATIVES FOR SOUTH AFRICA

1.8.1 Current energy context: coal-based power generation

South Africa has an energy intensive economy, highly reliant on fossil fuels, and regards economic growth based on energy intensive industries as a key means to development. Eskom plays a central role in energy generation in South Africa, producing 95% of its total power. Currently Eskom has a total installed generating capacity of some 42 000 MW (net 36 200 MW, peak 34 200 MW) with new peak capacity in demand since 2007. Approximately 93% of its power production capacity is coal-based, 5% nuclear and 2% hydro-electric. Several small power stations and back-up gas-turbines represent less than 1% of the national output, and another 3% is used for own consumption by independent power producers.

Coal, though currently appearing to be cheaper per kWh than renewable energy sources, introduces a host of so-called externality costs which are not factored into its monetary value. These costs arise across the lifecycle of coal consumption, from extraction to disposal (also known as the chain of custody) and can cause irreparable environmental damage, such as deforestation, land erosion and the emission of greenhouse gasses due to underground coal fires. One of the most insidious impacts of coal mining is acid mine drainage containing carcinogens such as benzene and toluene, which drain from mines into surface and ground water sources. Coal burning releases oxides of sulphur and nitrogen as well as mercury into the atmosphere, which cause adverse impacts on the natural environment (e.g. acid rain).

A wind energy project, such as the proposed Banna Ba Pifhu wind energy project aims to generate, at full capacity 50 MW of electricity with zero atmospheric emissions.

1.8.2 Policy context for promotion of renewable energy

A substantive body of policy and legislation (at international, national and provincial levels) supports the development of renewable energy in South Africa, for example:

- Kyoto Protocol
- The Constitution of the Republic of South Africa (Act 108 of 1996)
- White Paper on the Energy Policy of South Africa (December 1998)
- National Integrated Energy Plan for the RSA (March 2003)
- White Paper on Renewable Energy (November 2003)
- DME Energy Efficiency Strategy (March 2005)
- National Environmental Management Act (No. 107 of 1998) (NEMA)
- National Environmental Management: Air Quality Act
- National Strategy for Sustainable Development (DEAT, 2006)
- The Long term mitigation scenarios of the Department of Environmental Affairs (2008)
- Electricity Regulations Amendments (August, 2009)
- Renewable Energy Feed in Tariff Guidelines (NERSA, March 2009).

1.8.3 Integrated Strategic Energy Planning for South Africa

Integrated Strategic Electricity Planning is the way in which Eskom assesses by how much the demand for electricity is likely to grow and how best to meet and manage that demand. The most likely future, based on long-term southern African economic scenarios, is forecasted and provides the framework for Eskom to investigate a wide range of new supply-side and demand-side technologies and options. Nationally the Department of Energy is embarking on an Integrated Resource Planning process to develop a country energy plan for the next 20 years of which renewable energy will form part of the proposed energy mix. The demand for electricity is growing continuously and is projected to continue growing in the foreseeable future (as shown in Figure 1.2, which includes three growth scenarios).

Considering the economic development of South Africa an additional 40 000 MW production capacity has been planned by Eskom over the next 20 years due mainly to upcoming large mining and metal industry. Therefore by 2020, South Africa will need several new sources of power to provide for the growing demand (see Figure 1.2). In order to meet this future demand, Eskom is actively investigating and installing new energy-generating facilities.

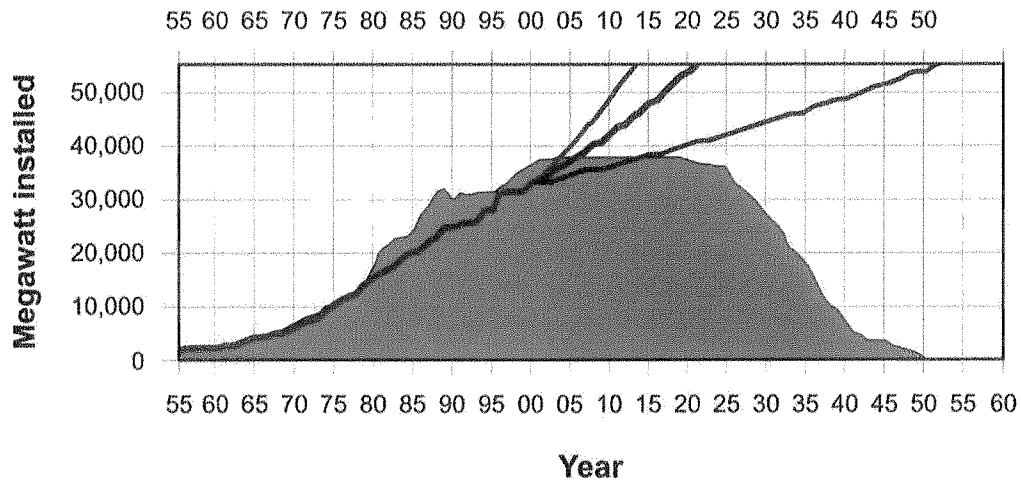


Figure 1.2: Eskom's installed generating capacity profile from 1955 to 2060.

The green shaded area shows Eskom's energy-generating capacity, which grows as new power stations are built. If no new power stations are built, the generating capacity will begin to decline from 2020 as existing power stations are decommissioned. The three lines show how energy consumption could grow in future via low, medium and high-growth scenarios.

All countries rely on a range of energy sources and generation technologies. In all probability the future energy needs of southern Africa will be supplied from a wide variety of sources, such as coal, gas, nuclear, hydro (electric), oil and renewable sources, as suggested in Figure 1.3. This figure incorporates Eskom's forecasting scenario whereby the current generating capacity of coal-fired power stations will decline from 2020. Electricity generating capacity from renewable sources will increase. Among the renewable sources which are being explored, wind energy has been identified to contribute to the energy mix.

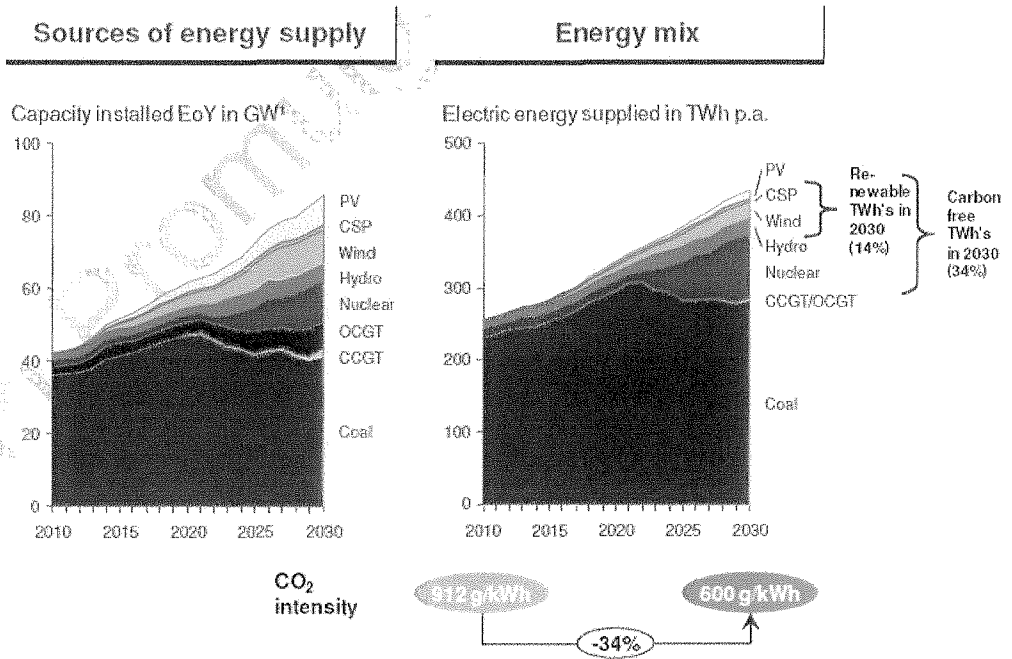


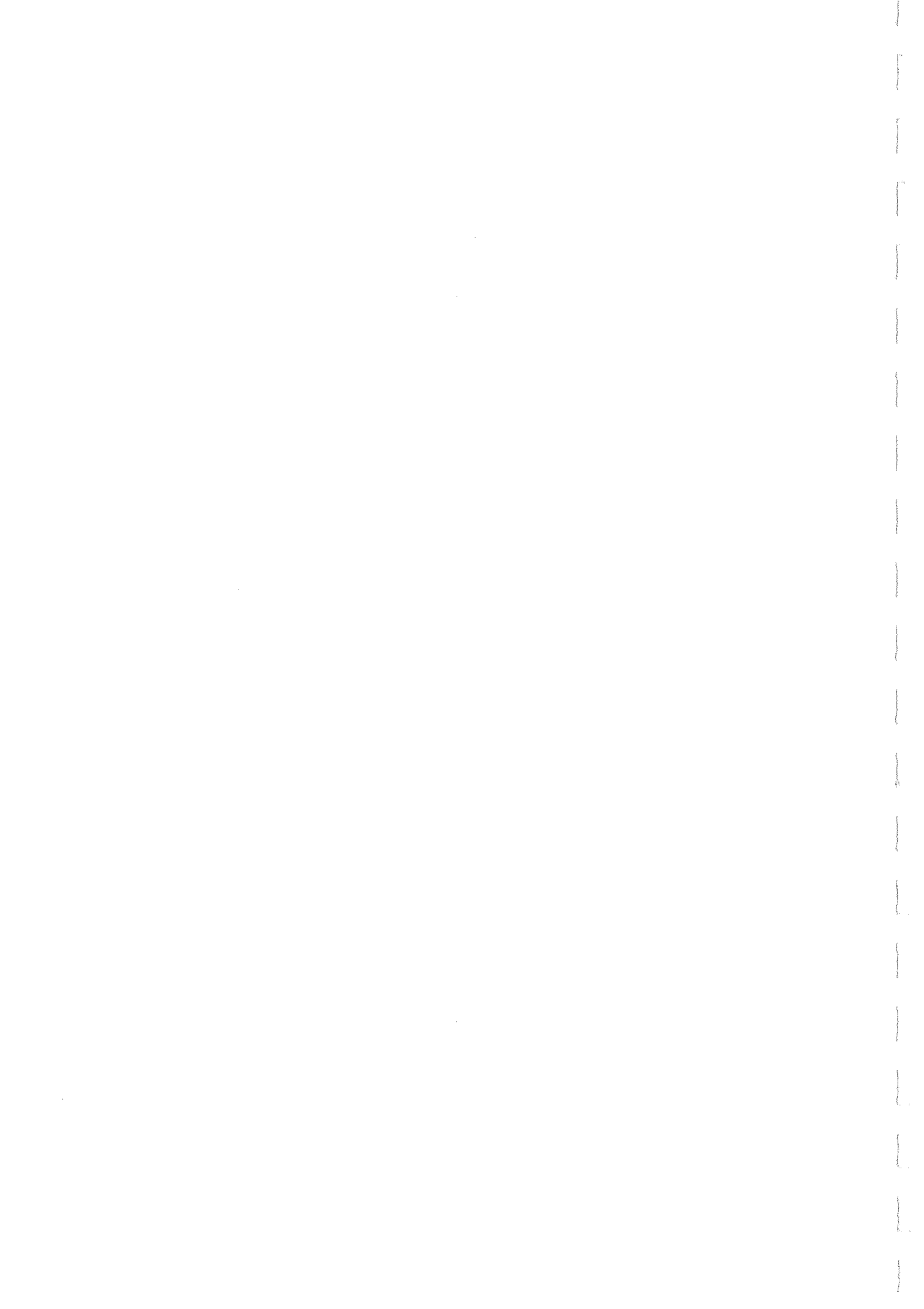
Figure 1.3: Predicted future regional electricity mix for southern Africa (IRP 2010-2030 Rev2 Final Report)

**Environmental Impact Assessment for the
proposed Banna Ba Pifhu Wind Energy Project
near Humansdorp, Eastern Cape:
Final Scoping Report**

Chapter 2:

Project Description





Contents

2. PROJECT DESCRIPTION	2-2
2.1 OBJECTIVES OF THE PROJECT	2-2
2.2 SITE SELECTION	2-3
2.3 OVERVIEW OF THE PROJECT	2-3

Tables & Figures

Figure 2.1: Provisional wind profile for the Kouga site showing daily and seasonal variation.	2-3
Figure 2.2: Example of a 100 m wind monitoring mast which will be erected on Farm Broadlands.	2-5
Figure 2.3: Vestas turbine - typical of the type of wind turbine proposed for this project.	2-7

2. PROJECT DESCRIPTION

This chapter is based on information provided by WKN-Windcurrent. A description of the site location is provided in Chapter 3.

WKN-Windcurrent SA (Pty) Ltd is proposing to construct a wind energy facility near Humansdorp in the Kouga Municipal area of the Eastern Cape Province. The proposed project, referred to as the Banna Ba Pifhu Wind Energy Project, will have a generation capacity of maximum 50 MW. A 50 MW wind project could produce enough electricity to power approximately 87 500¹ typical Eastern Cape households for a year.

2.1 OBJECTIVES OF THE PROJECT

At a national scale, renewable energy (in particular, wind energy) has the potential to play an important role in meeting South Africa's energy demand through diversifying the sources of power generation whilst reducing the country's carbon footprint from coal power generation. Currently, approximately 93 % of South Africa's power generation is derived from coal and 5 % from nuclear energy, whilst the remainder is produced by a combination of hydro-electric, pumped storage and biomass. The heavily energy-intensive South African economy makes the country one of the highest emitters of greenhouse gasses in Africa, and it stands above the OECD1 region average in energy sector emissions. South Africa produces more than 40% of Africa's fossil fuel-related carbon dioxide (CO₂) emissions, and is responsible for 1.5% of the world's total (ranking it 13th in the world in 2006).

A 50 MW wind farm would offset over 100 000 tonnes of CO₂ per year or 2 000 000 tonnes of CO₂ over a 20 year project lifetime (source: CO₂ Emissions from Fuel Combustion (2010 Edition), IEA, Paris: 835 grams CO₂ per kWh electricity produced in South Africa). Wind farms have a relative short lead time and could therefore be quickly deployed to meet South Africa's power need.

The project will also make a significant contribution to meeting provincial power supply requirements. The Eastern Cape Province is reliant on electricity supply from other provinces, and is currently limited by both generation and transmission capacity. This situation is restricting the significant industrial and rural development potential of the province, for example, at the major metropolitan centres such as Port Elizabeth.

At a local scale this wind energy project will contribute to improved energy stability and security of supply. In the Kouga area secondary agricultural processing companies and both small and commercial scale farmers experience an intermittent and sometimes unreliable supply of electricity. In the towns of Jeffrey's Bay and Humansdorp the power supply is struggling to meet the local demand. These towns are most severely affected by power failures as they consume more than 75% of the Kouga municipal energy supply.

¹ Where a typical Eastern Cape household uses 1500 kwh per annum. In South Africa, usage ranges from less than a 1000 kwh per year to over 8000 kwh per year.

Furthermore, due to the length of the Eskom power lines from the power stations (e.g. in Mpumalanga) to the Kouga area, and the inherent characteristics of the Kouga network, the towns suffer from periodic power quality issues and voltage instabilities. Given these challenges, one of the objectives of the project is to help stabilise energy supply to the Humansdorp area. The local economy, and in particular emerging entrepreneurs, will benefit from a more stable and reliable energy supply in the area.

2.2 SITE SELECTION

In the pre-feasibility stage of the project (2008-2009) sites were considered in the wider Eastern Cape region, leading to the selection of the Kouga area for more detailed studies and wind monitoring for the project. The Kouga region was seen as an ideal area for this project due to the following factors:

- The wind regime in the area appears favourable (see Figure 2.1).
- Existing Eskom power lines are in close proximity to the proposed site.
- Initial investigation suggests there are few additional constraints to the development in the immediate area.
- There is a need for additional energy capacity to support and stimulate economic growth.
- The network within the Kouga area can benefit from a localized power plant to stabilize the grid.

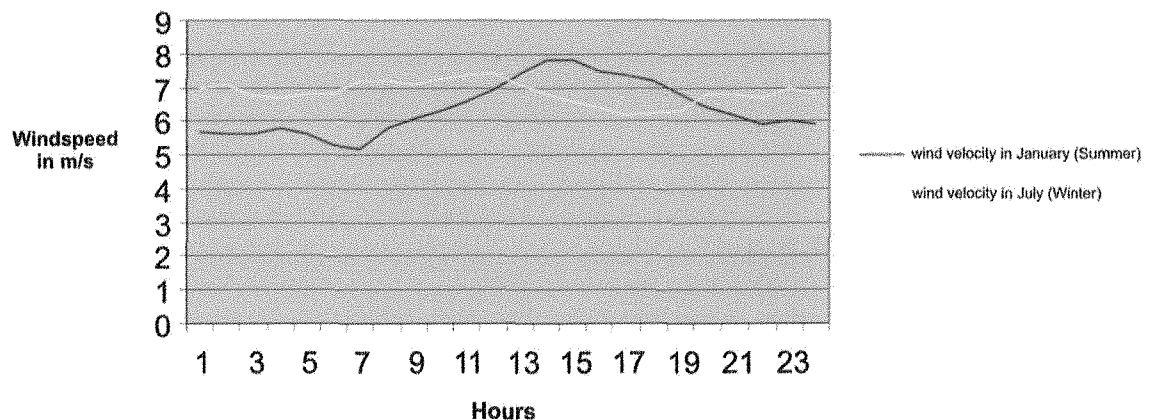


Figure 2.1: Provisional wind profile for the Kouga site showing daily and seasonal variation.

2.3 OVERVIEW OF THE PROJECT

The objective of the project is to generate electricity to feed into the national grid by installing a wind farm with a maximum capacity of 50 MW. The key components of the project are described below:

Wind monitoring mast

To guide project design and further investment decisions and to gather the necessary site specific wind data, WKN-Windcurrent will erect a maximum of two wind monitoring masts (Figure 2.2) to collect wind data for a period of approximately 12 - 24 months. The proposed masts will be approximately 100 m high with securing stays on three sides. The mast will have anemometers at different heights on the mast. When the 12-24 month monitoring period is complete the mast can be dismantled and re-used elsewhere.

Figure 2.2/

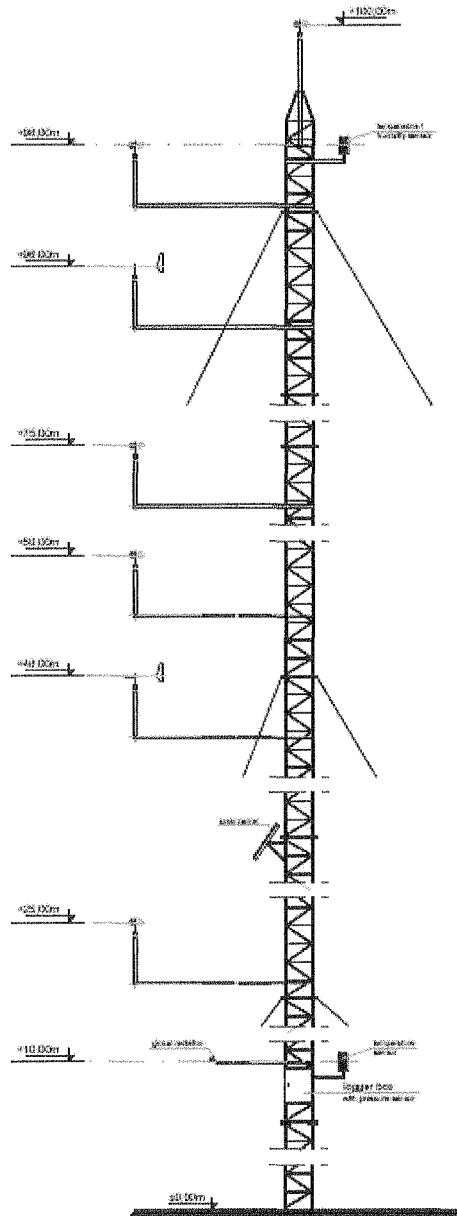


Figure 2.2: Example of a 100 m wind monitoring mast which will be erected on Farm Broadlands.

Wind turbines

1. 15 to 25 turbines (the actual number will be dependent on the capacity of the turbines selected in the range between 2 and 3.2 MW), with an expected hub height from 80 m to 105 m and a blade diameter from 90 m to 117 m.
1. Turbines will be supported on foundations dimensioned to the geotechnical properties, for example reinforced concrete spread foundations of approximately 20 m by 20 m and 3 m in depth.
2. Electrical transformers will be placed beside each turbine or in the nacelle of each turbine.
3. Hard standing areas will be established adjacent to each turbine for use by cranes during construction and retained for maintenance use throughout the life span of the project.
4. Gravel roads, approximately 5 m wide, will be necessary to provide access to each turbine site, with the intent being to upgrade existing roads as far as possible.

Figure 2.3/

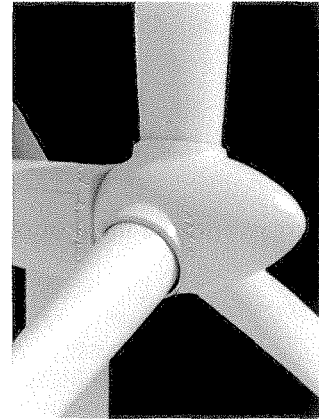
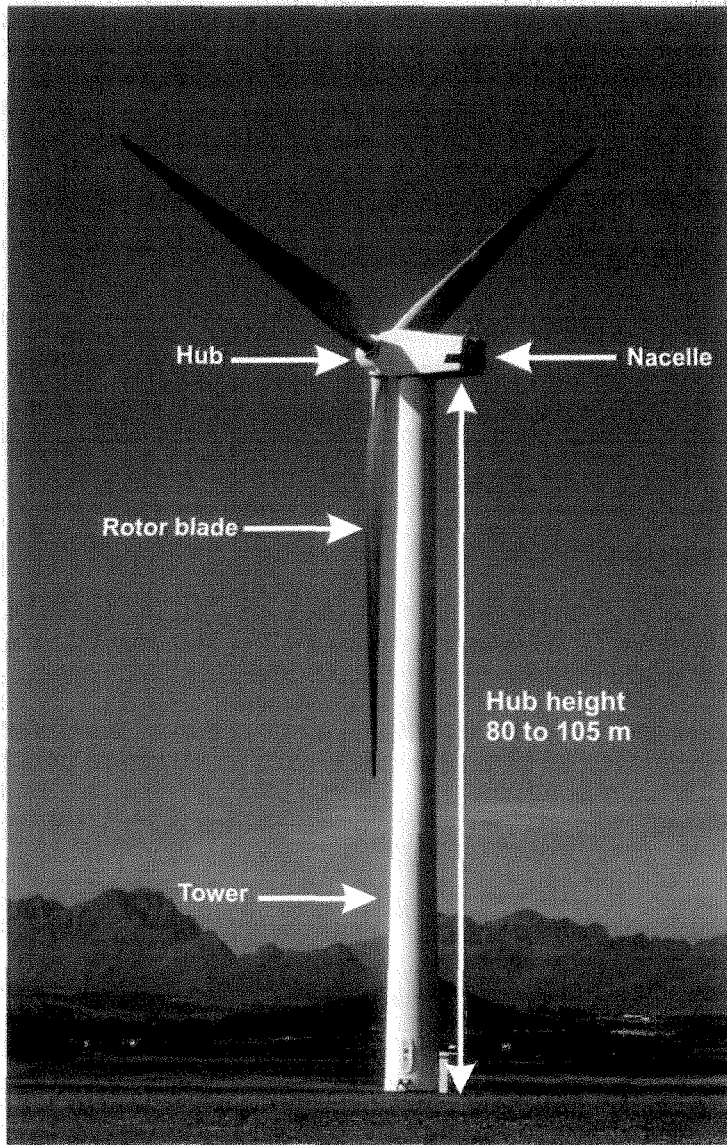


Figure 2.3: Vestas turbine - typical of the type of wind turbine proposed for this project.

Electrical connections

1. The wind turbines will be typically connected to each other and to the substation using medium voltage cables which will, in most cases, be buried approximately 1 m below ground, except where a technical assessment of the proposed design suggests that above ground lines are appropriate. The final internal underground cabling design will not traverse any sensitive areas as identified by the environmental specialists. The impact through trenches for the underground cabling can thus be minimised by decreasing the total lengths needed.

2. A new substation will be built on site to connect to the distribution or transmission system (maximum size of 70 m by 70 m). It is proposed to connect the wind farm substation to the existing 66 kV Melkhout / St. Francis overhead powerline, which passes through the site. Should this option become unfeasible, a new 132 kV overhead powerline would connect the wind farm to the Melkhout substation, which is located approximately 7 km north of the site.
3. The connection from the new substation to the Eskom grid line would be via underground cabling or a stretch of over head line supported on an intermediate pole(s), depending on the location of the substation relative to the 66 kV line.

Other infrastructure

1. Operations and maintenance building: A single storey building, maximum 5000 m², with warehouse / workshop space and access, office and telecoms space and security and ablution facilities as required. This preferably should be situated close to the substation.
2. Fencing as required.

Temporary activities during construction

1. A lay down area (alongside an access route) of maximum area 10 000 m² is necessary for the assembly of the turbine components– this hard standing area could be temporary or if the landowner prefers, left for long-term use.
2. The overall site compound for contractors would be approximately 5000 m².
3. Existing borrow pits will be used as far as possible for road upgrades. The size of these pits will be dependent on the terrain and need for granular fill material for use in construction.
4. At the end of construction these borrow pits will be backfilled as much as possible using surplus excavated material from the foundations.

The construction will be undertaken in three distinct components:

- Civil construction
- Electrical installation and wind turbine erection, and
- Commissioning.

These phases are expected to require a total period of 8 to 15 months.

The operational life span of the wind turbines is expected to be 20 years. Turbine life can be extended beyond 20 years through regular maintenance and/or upgrades in technology.

The final choice of the type of turbines will be based on ease of erection, availability and suitability to the wind regime, amongst other criteria.

Wind turbines can be operated in parallel with farming activities. Internationally it is common practice for farming to continue whilst wind turbines are in operation leading to greater efficiency of land use and no loss of economic activity, but an added passive income for the landowner. Internationally, wind turbines and related components take up between 2% and 5% of the surface area of the wind farm, allowing other activities such as

farming to continue on the land. The farm covers approximately 1138 hectares (ha). After construction, the loss of agricultural land was determined at approximately 0.87 % of the total farm area. Current cattle farming activities would continue beneath and around the turbines.

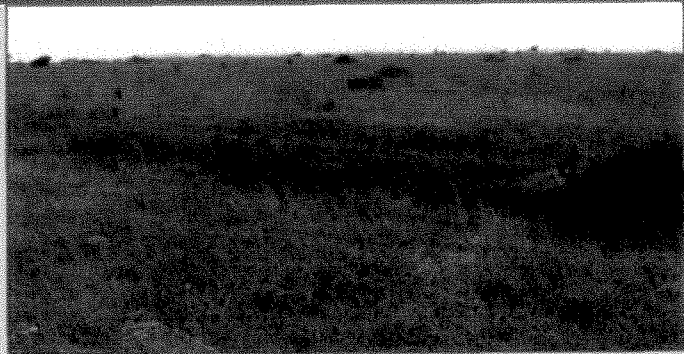
In addition to the application for a proposed wind farm, WKN-Windcurrent also submitted an application to DEA for the erection of a 4.5 MW photovoltaic (PV) solar power project on portion 15 of farm 689 and portion 1 of farm 868 (DEA reference number: 12/12/20/2236). These properties are included in this application for the proposed Banna Ba Pifhu wind energy facility. The PV project comprises a Basic Assessment. A Draft Basic Assessment Report has been released for public comment from 15 June 2011 until 26 July 2011 (CSIR Ref No: Stel General: 9291). WKN-Windcurrent wishes to diversify the use of renewable energy resources by erecting a solar and a wind energy facility on the same farms.

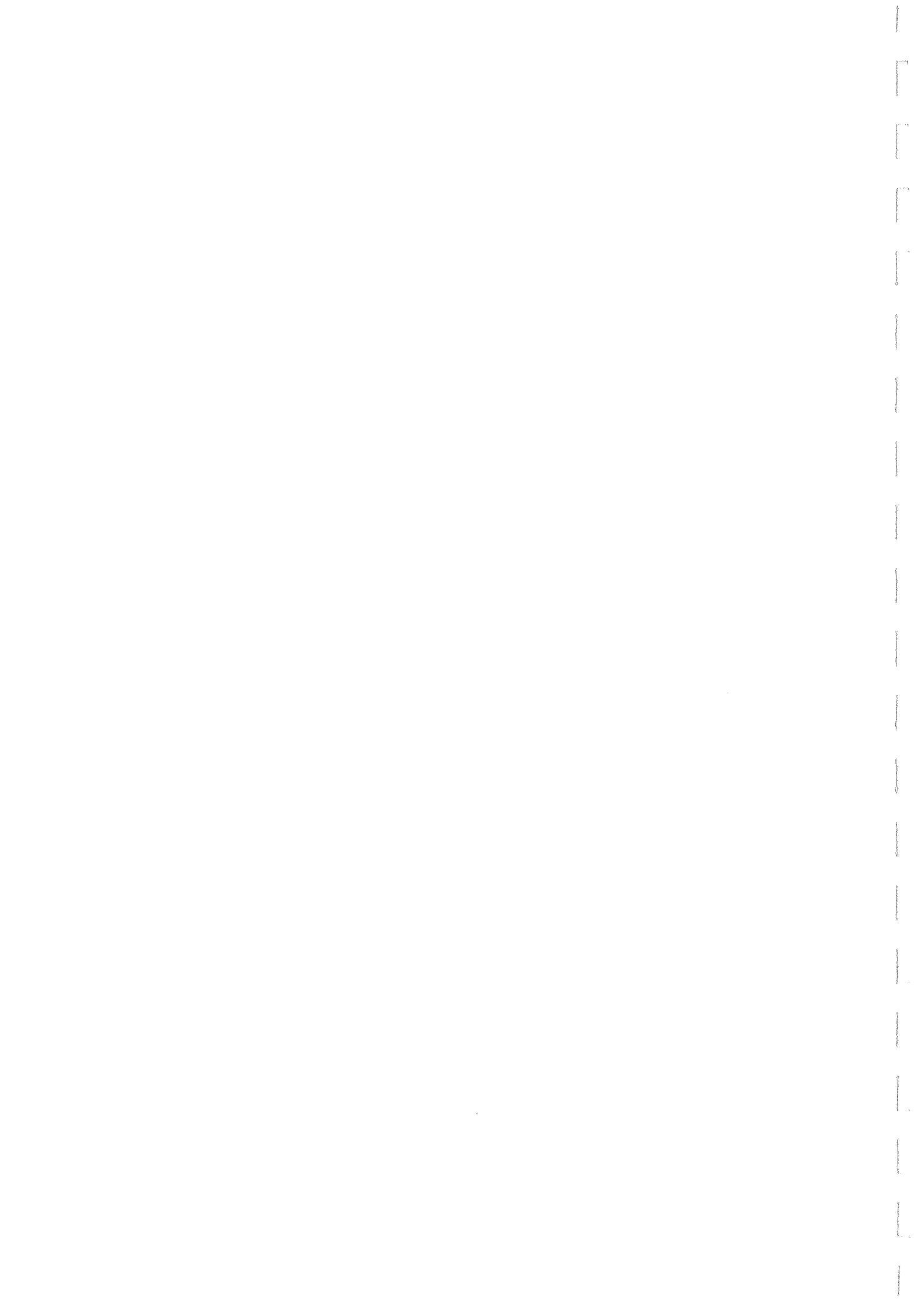


**Environmental Impact Assessment for the
proposed Banna Ba Pifhu Wind Energy Project
near Humansdorp, Eastern Cape:
Final Scoping Report**

Chapter 3:

Description of the Affected Environment





Contents

3 DESCRIPTION OF THE AFFECTED ENVIRONMENT	3-3
3.1 SITE LOCALITY	3-3
3.2 BIOPHYSICAL ENVIRONMENT	3-3
3.2.1 <i>Climate</i>	3-3
3.2.2 <i>Geology and Landscape</i>	3-3
3.2.3 <i>Ecology, Biodiversity and Conservation Planning</i>	3-4
3.2.4 <i>Vegetation and habitat</i>	3-5
3.2.5 <i>Birds</i>	3-9
3.2.6 <i>Bats</i>	3-13
3.2.7 <i>Heritage</i>	3-14
3.3 SOCIO-ECONOMIC	3-14
3.3.1 <i>Demographics</i>	3-15
3.3.2 <i>Employment</i>	3-16
3.3.3 <i>Income levels</i>	3-18
3.3.4 <i>Economic growth and development</i>	3-18
3.3.5 <i>Landscape character and sense of place</i>	3-19
3.4 PLANNING CONTEXT AND SURROUNDING LAND USES	3-19

Tables & Figures

Table 3.1:	Priority species (BLSA 2011) recorded in 3424BB QDGC (Harrison <i>et al.</i> 1997; http://sabap2.adu.org.za , Young <i>et al.</i> 2003, Young 2008, Young 2009a, Young 2009b, Young 2010; <i>pers. obs.</i>)	3-11
Table 3.2:	Bat species that are likely to occur on the proposed Broadlands wind farm	3-13
Table 3.3:	Population numbers in the wider study area (2001)	3-16
Table 3.4:	Unemployment in the wider study area (2001)	3-16
Table 3.5:	Employment per industry in the wider study area (2001)	3-17
Table 3.6:	Household incomes in the wider study area (2001)	3-18
Figure 3.1:	Melkhoutbosch substation, near the N2-R330 interchange north of Humansdorp	3-7
Figure 3.2:	Vegetation map of the study area (including transformed land)	3-8
Figure 3.3:	Jobs per sector for the Kouga Municipality (1996 – dark bars, 2001 – lighter bars)	3-17



3 DESCRIPTION OF THE AFFECTED ENVIRONMENT

This chapter provides an overview of the affected environment and local planning context (including surrounding land uses) for the proposed Banna Ba Pifhu Wind Energy Project. A broad understanding is given to the term 'environment', which includes the biophysical, socio-economic and heritage environment. This chapter, therefore, assists the reader in identifying potential impacts on the environment (positive or negative); and opportunities or constraints which the affected environment may present to the development.

3.1 SITE LOCALITY

The Banna Ba Pifhu Wind Energy Project is located on the Broadlands and Saragossa Farms in the Kouga Municipal Area, approximately 3.5 km south of the town of Humansdorp at an elevation of approximately 50 m to 90 m. It will be located on the following farms:

- Remainder of Farm 688
- Portion 2 and 15 of Farm 689
- Portion 1 of Farm 868.

The Banna Ba Pifhu wind energy project will have a total capacity of up to 50 MW. Current cattle farming activities would continue beneath and around the turbines.

3.2 BIOPHYSICAL ENVIRONMENT

3.2.1 *Climate*

Rainfall in the Kouga region is bimodal where both summer and winter rainfall occurs, a feature typical of the south-east coastal region of the country. The mean annual rainfall is approximately 400 mm. The weather is mild without extreme conditions with an average summer temperature of 24°C and a winter temperature of 17°C. During winter the prevailing wind is from a westerly to south westerly direction and during summer the wind is predominantly easterly. A high frequency of wind occurs daily in the area.

3.2.2 *Geology and Landscape*

The wind farm will be located on a relatively flat coastal plain. Foothills of Cape Fold Mountains rise towards the west and north of the wind farm site. Palaeo-dunes of up to 100m high can be seen south of the wind farm site near Thyspunt and Oyster Bay. The geology of the region is dominated by rocks of the Cape Supergroup which consist mainly of quartzite layers. These rocks tend to be erosion resistant, forming ridges and mountains, as well as rocky promontories which jut out into the sea such as at Seal Point

and Shark Shack Point near Cape St Francis. Palaeo-dunes of the Nanaga Formation and current dune fields are found along the coast.

The wind farm will be introduced into an agricultural landscape with dairy farming as the main land use type. Fynbos on the hills with thicket along deeper river valleys (and among palaeo-dunes) cover areas which are not cultivated. Humansdorp is the largest inland settlement in the region and an important service centre for the agricultural community. The coastline contains numerous towns and resorts which cater for seasonal visitors and tourists, such as St Francis Bay, Cape St Francis and Oyster Bay.

There are various power line and road networks covering the area. A 66 kV power line crosses the site, linking to the Melkhoutbosch substation (Figure 3.1) located north of the N2-R330 interchange. The electricity generated at the Banna Ba Pifhu wind energy project is planned to feed into the 66 kV line and into the Melkhoutbosch substation. Should this option become unfeasible, a new 132 kV overhead powerline would connect the wind farm to the Melkhout substation.

The roads that may be affected will be the R330 between St Francis Bay and Humansdorp, the R102 between Humansdorp and Jeffrey's Bay and the N2. The R330 will be most affected since it passes very near the wind farm site.

3.2.3 Ecology, Biodiversity and Conservation Planning

Regional Planning - Mucina and Rutherford Vegetation of Southern Africa (2006)

The vegetation map of the study area is provided in Figure 3.2.

According to Mucina and Rutherford (2006), present vegetation consists of:

- **Humansdorp Shale Renosterveld**, which includes shrubby fynbos communities and low-lying seep and wetland/pan areas dominated by grasses and herbs with scattered thicket clumps, where not cultivated or transformed. Rocky outcrop communities also present on ridges with a mix of succulent and fynbos elements (**Endangered**).
- **Gamtoos Thicket** restricted to kloofs and valleys along drainage lines, of which the latter are dominated by trees (**Least Threatened**).

Regional Conservation Planning - Subtropical Thicket Ecosystem Planning

According to STEP vegetation classification, vegetation on site consists of:

- **Kromme Fynbos / Renosterveld Mosaic** - includes shrubby Renosterveld-Fynbos communities and low-lying seep and wetland/pan areas dominated by grasses and herbs with sporadic scattered thicket clumps, where not cultivated or transformed. Rocky outcrop communities also present on ridges with a mix of succulent and fynbos elements (**Vulnerable**).
- **Gamtoos Valley Thicket Mosaic** - restricted to kloofs and valleys along drainage lines, of which the latter are dominated by trees (**Vulnerable**).

Regional Conservation Planning - Garden Route Biodiversity Sector Plan

The present vegetation in within and directly adjacent to the site as per the Garden Route BSP, consists of:

Vegetation Variant	Conservation Status
Osbosch Thicket -Renosterveld	Vulnerable
Humansdorp Perennial Stream	Least Threatened
Soutvlei Inland Pans	Vulnerable
Kabeljous Valley Thicket	Vulnerable
Kromrivier Thicket Forest	Vulnerable
Tsitsikamma Perennial Stream	Critically Endangered

The Garden Route Biodiversity Sector Plan thus identifies the primary vegetation units that will be affected by the proposed wind farm as being Osbosch Thicket-Renosterveld, Humansdorp Perennial Stream **and Soutvlei Inland Pans**. These vegetation units have a low conservation status and the proposed development is thus unlikely to have any significant impact on conservation priorities. Furthermore, the majority of the site is in a transformed state, with remnant vegetation being in a degraded state. **Kabeljous Valley Thicket, Kromrivier Thicket Forest and Tsitsikamma River and Floodplain** although present in the vicinity, are mostly outside of the proposed development site and are unlikely to be affected.

This proposed land-use accommodates infrastructure installations serving both the urban and rural areas where such installations include nuclear power stations, **wind farms or other alternative energy technologies requiring large areas of undeveloped land**. The Garden Route BSP guidelines thus permit the use of areas for large-scale wind farms where they *'are associated with large areas of land left undeveloped thereby maintaining low transformation levels relative to the property size'; installations to be located on transformed, disturbed or low-value agricultural land, where possible' and 'avoidance of sensitive areas such as floodlines, river and wetland buffers and Special Habitats'*.

3.2.4 Vegetation and habitat

The current habitat is primarily dominated by transformed **agricultural pastures and lands** (both irrigated and fallow), with remnant pockets of **Osbosch Renosterveld - Thicket** on slopes and mostly degraded/transformed **Humansdorp Perennial Stream in low lying areas**. The majority of the land consists of cultivated fields, mainly producing fodder and grazing for livestock but may have been used historically for crop production.

Ecological barriers in the area consist of fences, gravel farm roads, culverts and power lines. Utility lines and roads are forming corridors for bird mediated seed dispersal as well as vehicle mediated dispersal, in the case of roads. Biotic interactions are concentrated around pollination, seed dispersal, herbivory and predation.

Dams, streams and drainage lines of natural or anthropogenic origin usually with typical associated aquatic and riparian flora in various states of ecological integrity and disturbance are present. Numerous small to medium sized farm dams are present on the site, which may have been associated with historical seasonal/ephemeral wetlands in the rainy season.

A few scattered alien plants are present as individuals or in small clumps, although these do not occur in abundance anywhere within the site.

A number of protected and endemic flora species are likely to occur in intact areas of natural vegetation, which will be identified in the Specialist study.

Terrestrial Faunal species that are expected to occur within the study area mostly have a conservation status of Least Concern to Vulnerable and No Endangered or Critically Endangered terrestrial fauna. The site does not host any butterflies of special concern and does not fall within an area of any Endangered or Critically Endangered reptiles as presented in Branch (1988). Vulnerable Blue Duiker (*Philantomba monticola*) and Endangered Oribi (*Ourebia ourebi*) have distributions that overlap with the locations of the wind farm, but due to the absence of preferred habitat, are not expected to occur on the proposed site. Hewitt's Ghost Frog (*Heleophryne hewitti*), which is regarded as Critically Endangered (Branch, 1988) is known to be present within a limited number of catchments within the Elandsberg mountains and no individuals of this species are expected to be present at the proposed site. It is however not ruled out that they might occur as the presence of the species in the area has not been determined.



*Figure 3.1:
Melkhoutbosch
substation, near the
N2-R330
interchange north
of Humansdorp*

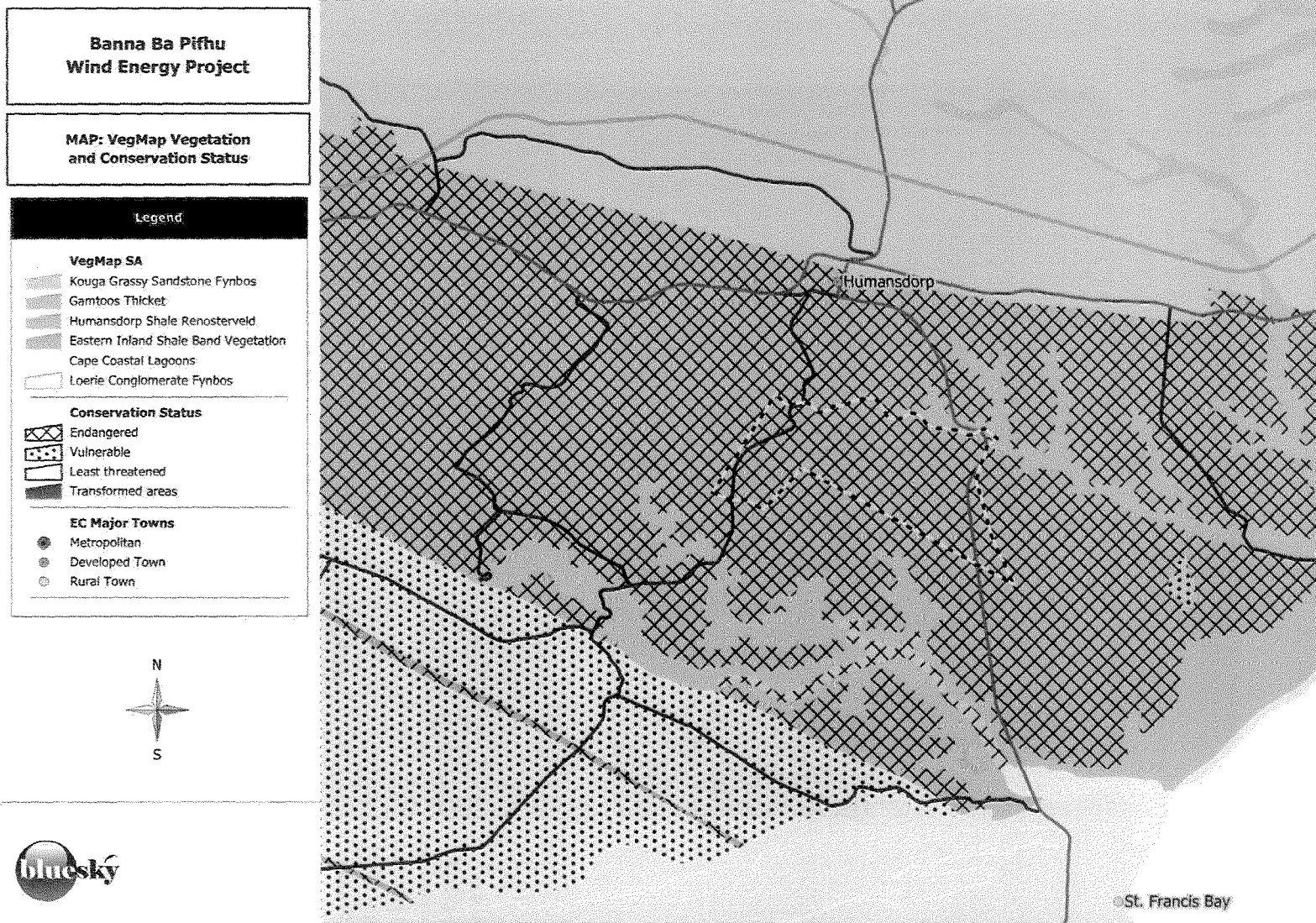


Figure 3.2: Vegetation map of the study area (including transformed land)

3.2.5 Birds

Vegetation structure is more critical in determining bird habitat than actual plant composition (Harrison et.al. 1997). Therefore, the description of vegetation presented in this study concentrates on factors relevant to bird species, and does not give an exhaustive list of plant species which occur in the study area.

The description of the vegetation biome where the site is situated uses the information presented in the Atlas of southern African birds (SABAP1) (Harrison et.al. 1997). The criteria used by the authors to amalgamate botanically defined vegetation units, or to keep them separate were (1) the existence of clear differences in vegetation structure, **likely to be relevant to birds**, and (2) the results of published community studies on **bird/vegetation associations**. It is important to note that no new vegetation unit boundaries were created, with use being made only of previously published data. The proposed development site is situated within the **fynbos biome** (Harrison et.al. 1997). The fynbos biome is characterized by a high diversity in plant species composition and endemism. This diversity is not paralleled in its avifaunal composition, and fynbos is regarded as relatively poor in avifaunal diversity compared to other southern African biomes.

Whilst some of the distribution and abundance of the bird species in the study area are related to the occurrence of natural fynbos, it is more important to examine the micro habitats available to birds, most of which are the result of human induced transformation. These are generally evident at a smaller spatial scale than the natural vegetation patterns. In the study area, the majority of the habitat is transformed.

The micro habitats recorded in this study area are described below.

- **Scrub.** Most of the study area consists of transformed habitat, but there are a few areas of natural vegetation left, consisting of fynbos scrub. Priority species that are associated with the scrub areas are Amur Falcon, White-bellied Korhaan and Denham's Bustard (see Table 3.1).
- **Grassland.** The majority of the study area consists of short grassland, which is mostly cultivated pastures, including irrigated pivots. This constitutes habitat for Red listed Blue Crane, Denham's Bustard, White-bellied Korhaan, Jackal Buzzard and Secretarybird (see Table 3.1). White Storks are also attracted to these areas.
- **Wetlands and dams.** The area contains several dams and water bodies, mostly man made but some also natural and seasonal. These dams and pans, depending on the shape, can be important for some bird species. Dams with shallow sloping sides are suitable for a wider range of species. In the context of this study, shallow dams with sloping sides could potentially be roost sites for Blue Cranes and White Storks. African Marsh-harrier was recorded in a large wetland adjacent to the project site (see Table 3.1).

- **Thicket.** The project site has a few areas of thicket, mostly associated with a drainage line along the northern border of the project site. None of the priority species is associated with the thicket, with the possible exception of Secretarybirds that could potentially roost on trees along the drainage line.

The BLSA draft list of priority species was used to identify species that will require specific monitoring on the site. Table 3.1 below shows the list of priority species that have been recorded in the QDGC overlapping with the study area, namely 3424BB. **Only species that are likely to occur on site (to be confirmed by pre-construction surveys which commenced in March 2010) based on the identification of habitat and avifauna during the reconnaissance site visit has been included.**

The following abbreviations and acronyms are used to indicate conservation significance:

VU = Nationally vulnerable (Barnes 2000)

NT = Nationally near threatened (Barnes 2000)

AEWA = Listed in Annexure 2 of the African-Eurasian Waterbird Agreement

Table 3.1: Priority species (BLSA 2011) recorded in 3424BB QDGC (Harrison *et al.* 1997; <http://sabap2.adu.org.za>, Young *et al.* 2003, Young 2008, Young 2009a, Young 2009b, Young 2010; pers. obs).

Common Name	Scientific Name	Conservation Status	Recorded on site since monitoring commenced in March 2011	Habitat requirements (Barnes 1998; Barnes 2000; Hockey <i>et al.</i> 2005; Young <i>et al.</i> 2003; Harrison <i>et al.</i> 1997; personal observations)
Black Stork	<i>Ciconia nigra</i>	NT, AEWA	No	Cliffs for roosting and breeding, and rivers and dams for foraging.
Secretarybird	<i>Sagittarius serpentarius</i>	NT	No	Grassland, old lands, open woodland. Most likely to be encountered in fynbos and old agricultural areas.
African Marsh-Harrier	<i>Circus ranivorus</i>	VU	No but recorded on adjacent property	Large permanent wetlands with dense reed beds. Sometimes forages over smaller wetlands and grassland. Could be foraging at wetlands associated with dams in the study area.
Black Harrier	<i>Circus maurus</i>	NT	No	Highest expected densities in scrub.
Peregrine Falcon	<i>Falco peregrinus</i>	NT	No	A wide range of habitats, but cliffs (or tall buildings) are a prerequisite for breeding. May hunt over grassland and scrub. Immature birds are most likely to be encountered.
Lanner Falcon	<i>Falco biarmicus</i>	NT	No	Generally prefers open habitat, but exploits a wide range of habitats. May hunt over grassland and scrub.
Amur Falcon	<i>Falco amurensis</i>		Confirmed	Summer migrant recorded in over grassland and scrub.
Blue Crane	<i>Anthropoides paradiseus</i>	VU	Confirmed	Recorded in grassland.
Denham's Bustard	<i>Neotis denhami</i>	VU	Confirmed	Recorded in scrub and grassland
White Stork	<i>Ciconia ciconia</i>	AEWA	Confirmed	Old agricultural lands and water bodies.
African Fish-Eagle	<i>Haliaeetus vocifer</i>		No	Any of the water bodies.

Common Name	Scientific Name	Conservation Status	Recorded on site since monitoring commenced in March 2011	Habitat requirements (Barnes 1998; Barnes 2000; Hockey <i>et al</i> 2005; Young <i>et al</i> 2003; Harrison <i>et al</i> 1997; personal observations)
Jackal Buzzard	<i>Buteo rufofuscus</i>		Confirmed	Scrub and grassland
African Harrier-Hawk	<i>Polyboroides typus</i>		No	In thicket along drainage lines.
Rock Kestrel	<i>Falco rupicolus</i>		No	Scrub and grassland
Spotted Eagle-Owl	<i>Bubo africanus</i>		No	Scrub
Martial Eagle	<i>Polemaetus bellicosus</i>	VU	No	Scrub and thicket
White-bellied Korhaan	<i>Eupodotis senegalensis</i>	VU	Confirmed	Scrub and grassland

The potential effects of a wind farm on birds are highly variable and depend on a wide range of factors including the specification of the development, the topography of the surrounding land, the habitats affected and the number and species of birds present. With so many variables involved, the impacts of each wind farm must be assessed individually. Each of these potential effects can interact, either increasing the overall impact on birds or, in some cases, reducing a particular impact (for example where habitat loss causes a reduction in birds using an area which might then reduce the risk of collision).

The principal areas of concern which will require investigation are listed below:

- Collision mortality on the wind turbines
- Displacement due to disturbance
- Habitat change and loss.

3.2.6 Bats

Twelve bat species have a geographical distribution that includes the study area. Four of these species are listed as Near-Threatened (Friedmann & Daly 2004; Monadjem, *et al.* 2010) locally and one is Near-Threatened globally, while all other species are listed as Least Concern. There are no large caves on the property and thus maternity roosts on the property itself are not highly likely, although barns and unoccupied buildings are present and are possibly suited for seasonal colonization.

Table 3.2: Bat species that are likely to occur on the proposed Broadlands wind farm

Species	Common Name	SA conservation status	Global conservation status (IUCN)
<i>Epomophorus wahlbergi</i>	Wahlberg's epauletted fruit bat	Least Concern	Least Concern
<i>Eptesicus hottentotus</i>	Long-tailed serotine (endemic)	Least Concern	Least Concern
<i>Kerivoula lanosa</i>	Lesser woolly bat	Near Threatened	Least Concern
<i>Miniopterus natalensis</i>	Natal long-fingered bat	Near Threatened	Near Threatened
<i>Myotis tricolor</i>	Temminck's myotis	Near Threatened	Least Concern
<i>Neoromicia capensis</i>	Cape serotine	Least Concern	Least Concern
<i>Nycteris thebaica</i>	Egyptian slit-faced bat	Least Concern	Least Concern
<i>Rousettus aegyptiacus</i>	Egyptian Rousette (endemic)	Least Concern	Least Concern
<i>Rhinolophus capensis</i>	Cape horseshoe bat (endemic)	Near Threatened	Least Concern
<i>Rhinolophus clivosus</i>	Geoffroy's horseshoe bat (endemic)	Near Threatened	Least Concern
<i>Taphozous mauritanus</i>	Mauritian tomb bat	Least Concern	Least Concern
<i>Tadarida aegyptiaca</i>	Egyptian free-tailed bat	Least Concern	Least Concern

Although there are not many large trees or dense vegetation on the site itself, there are river beds with riparian vegetation north as well as south of the site. Bats might reside in the riparian vegetation and rocky crevices along the river beds and are very likely to move over the proposed turbine site to forage or drink. The Broadlands site has high potential for species and population density.

The key issues regarding the potential impacts on bats include the following:

- Barotrauma
- Loss of foraging and habitat
- Direct collision
- Indirect effects to human quality of life, which include agriculture and pest control.

Species most likely to be affected are the aerial insectivorous bats (e.g. Egyptian Free-tailed Bat) which forage quite high above the ground and are thus at risk of barotrauma from the turning turbine blades. The wind turbines could pose most hazardous to at least six of the 12 species, on account of their foraging habits. Furthermore some species are known to cover large distances when foraging at night or when moving between winter and summer roosts. There are no published migration patterns recorded for bats in South Africa, and the wind turbines will pose a risk to all bats whose migration route crosses the potential site.

3.2.7 Heritage

Heritage includes palaeontology (e.g. fossils), archaeology and historical or cultural features that may exist on or near the site. The site is more than five kilometres from the coast, and therefore shell middens are not expected to be found this far inland (Binneman 1996, 2001, 2005). The site might have had low cultural activity in the past, but it is unlikely that any archaeological or historical material would be located during development. Nonetheless, it must be recognised that there are several archaeological sites in the wider region that are of international significance and the developers should observe for any archeologically valuable features during the construction phase.

3.3 SOCIO-ECONOMIC

The study area falls within the Kouga Municipal area in the Cacadu District. The Kouga Municipality has a population of 62 542 people (as indicated in the Kouga Municipality revised IDP 2005/2006), with a low proportion of young people, 38 % being between the ages of 0 and 20 years (census 2001). The Municipality is a top performer in the Eastern Cape with low rates of dependency (1.29), unemployment (25 %) and poverty (31 %). Some 47 % of households in Kouga have members who receive social grants. This is the lowest percentage of households in the District (Kouga Municipality Annual Report 2005-2006).

Agriculture is one of the major contributors to Geographical Value Add (GVA) and employment in the area. However, this lucrative market is adversely affected by high numbers of people (including farm workers) infected with HIV/AIDS within the municipal area. Considering the district average of 17 %, the Kouga municipality has an estimate of

12 000 persons living with HIV/AIDS. Kouga currently has 14 330 patients with Tuberculosis (TB), 20 % of the total local population. As a consequence of the linkages between TB and HIV/AIDS, this should raise concerns for the delivery of primary health care.

A district survey indicated that Kouga is performing above average in terms of access to good roads, clinic services and public schools. Unfortunately the municipal area is doing particularly poorly in terms of access to hospitals and ambulance services.

Kouga has among the highest Formal Economy Performance scores, with positive factors including the positive trade balance, a fairly diversified economy, low financial grant dependence, and strong GDP and employment growth performance. The local economy has experienced a positive shift increase in employment and GDP from 1996 to 2004, and is one of only two municipalities in the Province to emerge as leading economies in respect of both GDP and formal employment, provincially and nationally.

Kouga municipality is predominantly a rural area with seasonal influx of visitors to the popular coastal tourist destinations such as Jeffrey's Bay and Cape St Francis. It offers a wide range of tourist activities and attractions. These include historical and heritage sites, the Kouga Cultural Centre, surfing, fishing, hiking, biking, sand boarding, birding and game viewing, and various other outdoor and adventure activities (Kouga Municipality Annual Report 2005-2006).

3.3.1 Demographics

The total population in Humansdorp in 2001 was 15 335 (see Table 3.3). In terms of the racial composition Humansdorp has a relatively large proportion of coloureds (11 984) followed with Whites (2436) and Black Africans and Indian/Asian in the minority. The population of the Kouga Municipality was 70 693 in 2001 while that of the wider Cacadu District was 388 204.

A Community Survey was conducted by Statistics SA in 2007. Although the sample size used in this survey is a fraction of that used in the 2001 Census, making estimates far more tentative, it can nevertheless provide indicative estimates worth noting. The 2007 Survey estimated that the total population in Kouga has grown slightly since 2001 to 73 274 and decreased slightly in the Cacadu District to 363 485 (StatsSA, 2008). Estimates in the Kouga IDP argue for a substantially higher population estimate of up to 86 000 people fuelled by a population growth rate of 2,4 % per annum between 2000 to 2010 (Kouga Municipality, 2007).

Table 3.3: Population numbers in the wider study area (2001)

	Cacadu District	Kouga Municipality	Humansdorp	Jeffreys Bay	KwaNomzamo
Black African	202 541	23 747	879	4 030	6 412
Coloured	140 851	33 619	11 984	4 124	141
Indian or Asian	730	102	36	30	-
White	44 082	13 225	2 436	6 588	3
Total	388 204	70 693	15 335	14 772	6 556

Source: StatsSA, 2002

3.3.2 Employment

As with the rest of the country, unemployment is a major problem in the area. "Jobless" growth remains a feature of the economy and it is likely that the current deterioration in economic conditions will result in further pressure on employment. Based on the 2001 Census figures in Table 3.4 below, the Kouga Municipality had an unemployment rate of approximately 27 % which was similar to the national average at the time. However, KwaNomzamo (43 % unemployed), Humansdorp (29 % unemployed) and the Cacadu District (35 % unemployed) all had higher unemployment rates by comparison indicating an above-average level of need for employment. More recent estimates from the 2007 Community Survey indicate that unemployment remains a major problem in the Kouga Municipality and has stayed at 27 % for 2007 (StatsSA, 2008). More recent unemployment statistics for the individual towns in the municipal area are unfortunately not available.

Table 3.4: Unemployment in the wider study area (2001)

	Cacadu District	Kouga Municipality	Humansdorp	Jeffreys Bay	KwaNomzamo
Employed	94 975	20 143	4 043	4 497	1 674
Unemployed	52 030	7 289	1 671	1 793	1 275
% unemployed	35.4%	26.6%	29.2%	28.5%	43.2%

Source: StatsSA, 2002

The dominant employment sectors in the Cacadu District and Kouga Municipal areas are agriculture, forestry and fishing (see Table 3.5). Other important sectors in the Kouga Municipality include wholesale and retail trade (15 % of employment) and community/social/personal services (14 % of employment). By comparison with the wider Kouga municipal area, Humansdorp and Jeffrey's Bay have particularly high portions of workers in the wholesale and retail trade as well as construction sectors reflecting their status as service centres with relatively high levels of construction at the time.

Table 3.5: Employment per industry in the wider study area (2001)

	Cacadu District	Kouga Municipality	Humansdorp	Jeffreys Bay	KwaNomzamo
Agric, hunting; forestry & fishing	36%	33%	6%	7%	24%
Mining and quarrying	0%	0%	0%	0%	0%
Manufacturing	5%	7%	7%	10%	10%
Electricity; gas and water supply	1%	0%	0%	0%	0%
Construction	6%	11%	23%	14%	11%
Wholesale and retail trade	13%	15%	24%	21%	14%
Transport; storage and comms	2%	2%	3%	2%	2%
Finl, insure, real est. & business serv.	4%	6%	8%	11%	5%
Community, social and personal serv.	18%	14%	18%	19%	18%
Other and not adequately defined	0%	0%	0%	0%	0%
Private Households	14%	11%	10%	16%	16%
Total	100%	100%	100%	100%	100%

Source: StatsSA, 2002

The number of jobs in the Kouga Municipality increased the most in the construction sector between 1996 and 2001 reflecting the rapid development of the area (see Figure 3.3). The agriculture, forestry and fisheries sectors lost the most jobs during the same period in keeping with trends such as increased mechanisation.

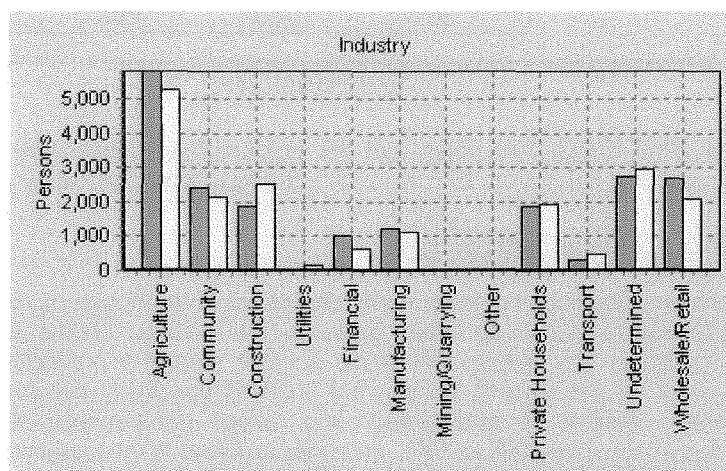


Figure 3.3: Jobs per sector for the Kouga Municipality (1996 - dark bars, 2001 - lighter bars)

Source: Demarcation Board using Census 2001 & 1996

3.3.3 Income levels

Household income levels in the study area are presented in Table 3.6 below. Approximately 44 % of households in the Cacadu District and 33 % in the Kouga municipal area had incomes below R9 600.00 per year in 2001. Humansdorp and Jeffrey's Bay fared substantially better than the District and slightly better than the wider Kouga municipal area.

Table 3.6: Household incomes in the wider study area (2001)

	Cacadu District	Kouga Municipality	Humansdorp	Jeffreys Bay	KwaNomzamo
No income	14%	11%	9%	10%	17%
R1 - R4 800	7%	5%	3%	3%	8%
R4 801 - R9 600	23%	17%	13%	13%	21%
R9 601 - R19 200	23%	24%	20%	17%	29%
R19 201 - R38 400	15%	19%	26%	17%	18%
R38 401 - R76 800	8%	12%	15%	18%	5%
R76 801 - R153 600	5%	8%	9%	14%	1%
R153 601 - R307 200	2%	3%	4%	6%	0%
R307 201 - R614 400	1%	1%	1%	1%	0%
R614 401 - R1 228 800	0%	0%	0%	1%	0%
R1 228 801 - R2 457 600	0%	0%	0%	0%	0%
R2 457 601 and more	0%	0%	0%	0%	0%
Total	100%	100%	100%	100%	100%

Source: StatsSA, 2002

The 2007 Kouga IDP notes that the proportion of households living in poverty has increased by 6.4 % from 26.6 % to 33 % (Kouga Municipality, 2007).

3.3.4 Economic growth and development

Economic development faces many challenges in the Kouga municipal area although its performance relative to other areas in the Cacadu District and Eastern Cape is encouraging. The Kouga IDP points out that municipal productivity is higher than the average for the Cacadu District and province principally due to high growth in value creation relative to employment and labour remuneration. Growth in GDP and employment, from 1996 to 2004, and skills available to the local economy, are both higher than the Provincial average. Kouga also has among the highest Formal Economy Performance scores in the province, with positive factors including the positive trade balance, a fairly diversified economy, and strong GDP and employment growth performance. The Municipality fares well on Economic Absorption Capacity, considering the high total disposable income, employment multiplier and informal sector capacity to generate economic opportunities relative to formal employment.

3.3.5 Landscape character and sense of place

The landscape character and “sense of place” of the local area may be affected in the following ways by the proposed wind energy project:

- Potential visual intrusion on views from protected areas (particularly: Swan Island Nature Reserve (NR), Seekoei River NR and Noorsekloof Local NR which are relatively close to the wind farm site);
- Potential visual intrusion on views from Humansdorp and holiday resorts and residences on the Kromme River and in Paradise Beach;
- Potential visual intrusion on views from coastal areas where few man-made structures are currently visible (e.g. between Oyster Bay and Seal Point, and south of Paradise Beach);
- Cumulative visual and landscape impacts of various wind farms proposed for the region.

3.4 PLANNING CONTEXT AND SURROUNDING LAND USES

The economy of the Kouga Municipal area has grown considerably over the last 10 years and the area has become a major holiday destination. The tourism market is growing tremendously and will further benefit from the establishment of a game reserve near Jeffrey's Bay. A Tourism Forum, where all the local tourism organisations are represented, was established to drive tourism in the Kouga region.

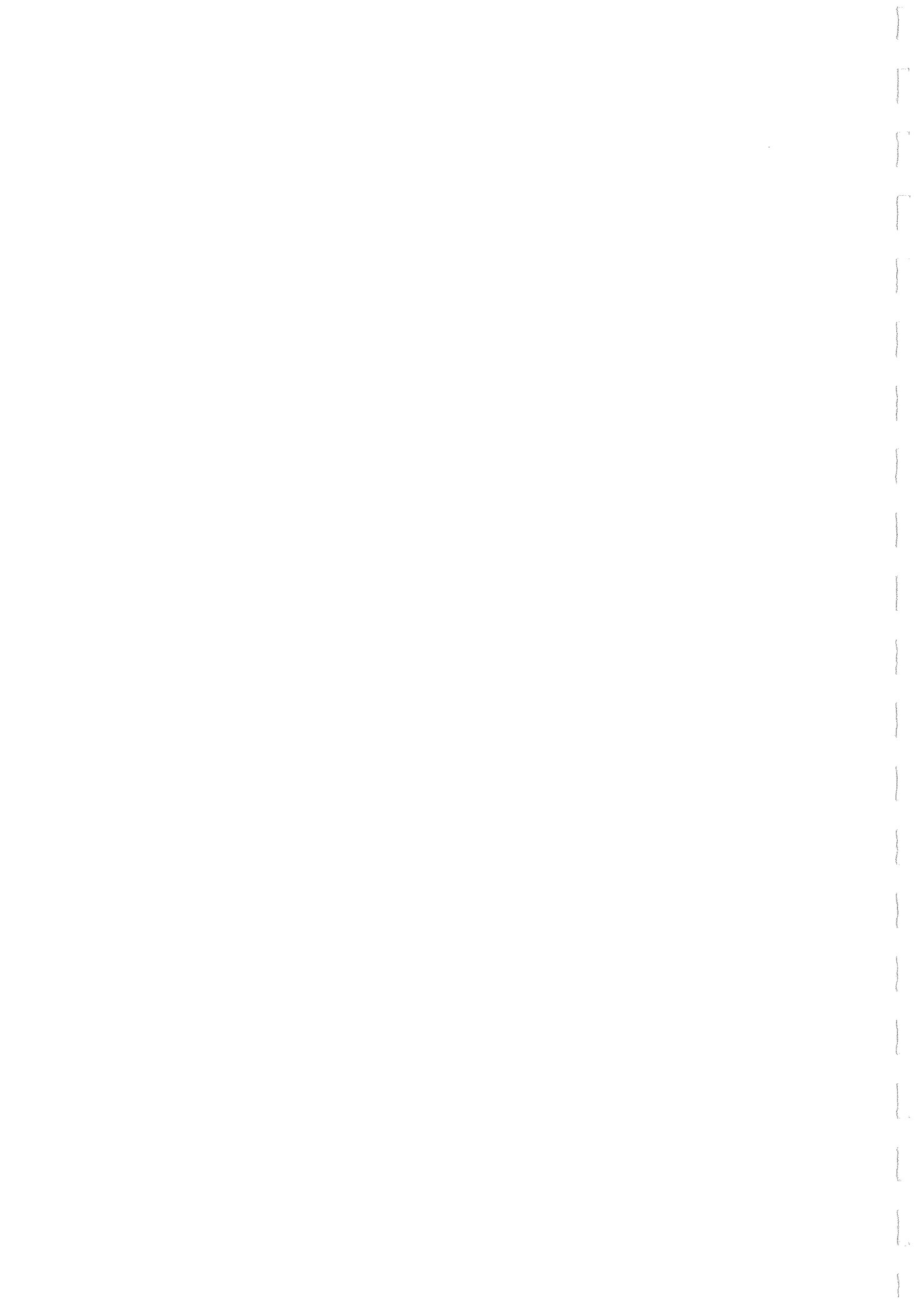
Agricultural production is on the increase and as the benefits of intensive land utilisation are becoming apparent its growth is constantly gaining momentum.

The site for the proposed Banna Ba Pifhu wind farm is presently zoned for agriculture and comprises irrigated pastures and grazing land.

Activities on the land surrounding the wind farm sites include:

- Stock farming
- Crop farming and
- Untransformed land (natural vegetation).

The area is not pristine and has been transformed by various human activities over the last two centuries. Nevertheless development should only proceed with due cognisance of environmental features.

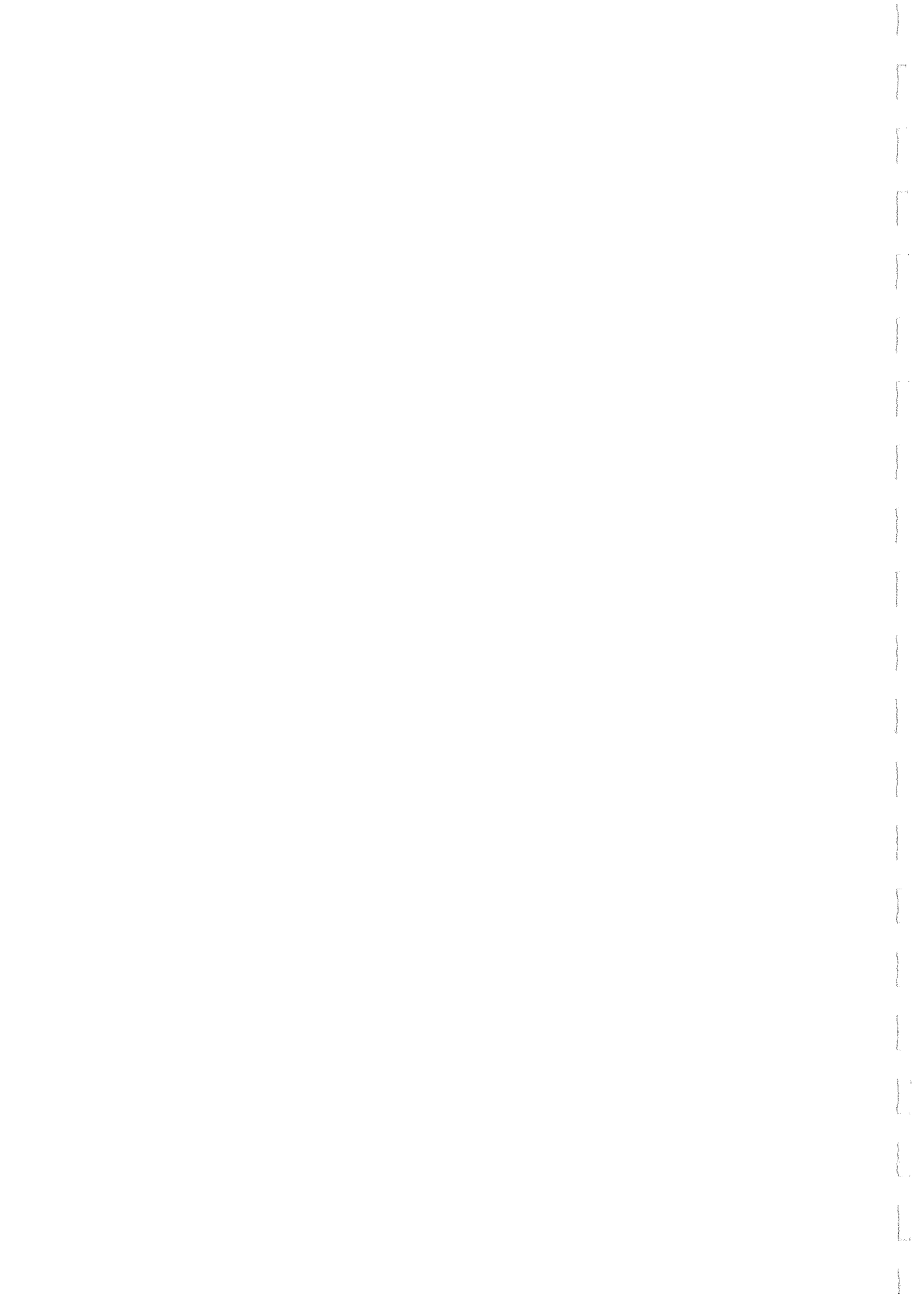


**Environmental Impact Assessment for the
proposed Banna Ba Pifhu Wind Energy Project
near Humansdorp, Eastern Cape:
Final Scoping Report**

Chapter 4:

Approach to EIA Process and Public Participation





Contents

4. INTRODUCTION	4-3
4.1 LEGAL CONTEXT FOR THIS EIA	4-3
4.2 LEGISLATION AND GUIDELINES PERTINENT TO THIS EIA	4-5
4.2.1 <i>National Legislation</i>	4-5
4.2.2 <i>Overview of SA Energy Policy and Planning</i>	4-5
4.3 PRINCIPLES FOR SCOPING AND PUBLIC PARTICIPATION	4-10
4.4 OBJECTIVES OF THE SCOPING PROCESS	4-11
4.5 TASKS IN THE SCOPING PHASE	4-12
<i>Task 1: I&AP identification, registration and the creation of an electronic database</i>	4-12
<i>Task 2: Announcement of the Scoping process</i>	4-13
<i>Task 3: Ongoing Communication and Capacity Building</i>	4-13
<i>Task 4: Consultation with authorities</i>	4-15
<i>Task 5: Technical Scoping with project proponent and EIA team</i>	4-15
<i>Task 6: Consultation with I&APs (public) to identify issues and concerns</i>	4-16
<i>Task 7: Focus Group Meetings</i>	4-17
<i>Task 8: Identification of Issues and Concerns</i>	4-17
<i>Task 9: Review of the Draft Scoping Report</i>	4-18
<i>Task 10: Final Scoping Report (current stage in the process)</i>	4-19
4.6 APPROACH TO THE ASSESSMENT OF ALTERNATIVES	4-19
4.6.1 <i>No-go alternative</i>	4-19
4.6.2 <i>Land use alternatives</i>	4-19
4.6.3 <i>Location Alternatives</i>	4-20
4.6.4 <i>Technology alternatives as part of the development</i>	4-21
4.6.5 <i>Activity Alternatives as part of the development</i>	4-22
4.6.6 <i>Turbine size alternatives as part of the development</i>	4-24
4.7 SCHEDULE FOR THE EIA	4-25

Tables & Figures

Table 4.1:	Listed activities in Government Gazette No. 33306 of 2010 (2010 EIA Regulations) that potentially form part of the proposed Banna Ba Pifhu Wind Energy Project near Humansdorp	4-4
Table 4.2:	EIA Schedule for the proposed Banna Ba Pifhu Wind Energy Project	4-26
Figure 4.1:	Comparison between HAWT and VAWT systems (not to scale)	4-21
Figure 4.2:	South African annual solar radiation in MJ/m ⁴	4-22
Figure 4.3:	South African macro hydro power potential	4-23
Figure 4.4:	South African biomass potential	4-23
Figure 4.5:	South African wind resource with the study area receiving between 4-5m & 5-6m/second mean annual wind speeds	4-24



4. INTRODUCTION

This chapter presents the EIA process for the proposed development with particular attention to the steps in the Scoping and public participation component of the EIA.

4.1 LEGAL CONTEXT FOR THIS EIA

The EIA process is a planning, design and decision making tool used to demonstrate to the responsible authority, DEA, and the project proponent, WKN-Windcurrent SA (Pty) Ltd, what the consequences of their choices will be in biophysical, social and economic terms. As such it enables the identification of potential impacts (negative and positive) that the project may have on the environment. The EIA contains recommendations to mitigate negative impacts and enhance positive impacts associated with the project.

Amended NEMA EIA Regulations (Notices GN R. 543, 544, 545, and 546) were published in the Government Gazette No. 33306 of 18 June 2010, and came into effect from 2 August 2010 (referred to as the **2010 EIA Regulations**). This EIA application by WKN-Windcurrent is undertaken under the 2010 EIA Regulations. In terms of these regulations, Scoping and Environmental Impact Assessment are required as the project includes listed activities shown in Table 4.1 below.

Table 4.1/...

Table 4.1: Listed activities in Government Gazette No. 33306 of 2010 (2010 EIA Regulations) that potentially form part of the proposed Banna Ba Pifhu Wind Energy Project near Humansdorp

Listed activities in Government Notices 544, 545, and 546		
Government Notice	Activity No(s)	Describe the relevant Scoping and EIA Activity in writing
GN.R544, 18 June 2010	10	10. The construction of facilities or infrastructure for the transmission and distribution of electricity - (i) outside urban areas or industrial complexes with a capacity of more than 33 but less than 275 kilovolts;
GN.R545, 18 June 2010	1	1. The construction of facilities or infrastructure for the generation of electricity where the electricity output is <i>20 megawatts or more.</i>
	15	15. Physical alteration of undeveloped, vacant or derelict land for residential, retail, commercial, recreational, <i>industrial or institutional use where the total area to be transformed is 20 hectares or more;</i>
	4(a)(ii)(ee)	4. The construction of a road wider than 4 metres with a reserve less than 13,5 metres. (a) In Eastern Cape...: (ii) Outside urban areas, in: (ee) Critical biodiversity areas (Type 1) as identified in systematic biodiversity plans adopted by the competent <i>authority or in bioregional plans;</i>
GN.R546, 18 June 2010	14a (i)	14. The clearance of an area of 5 hectares or more of vegetation where 75% or more of the vegetative cover constitutes indigenous vegetation, except where such removal of vegetation is required for: (a) In Eastern Cape...: <i>(i) All areas outside urban areas;</i>
	16 (iii); (iv) and a (ii)(ff)	16. The construction of: (iii) buildings with a footprint exceeding 10 square metres in size; (iv) infrastructure covering 10 square metres or more where such construction occurs within a watercourse or within 32 metres of a watercourse, measured from the edge of a watercourse, excluding where such construction will occur behind the development setback line. (a) In Eastern Cape, ii. Outside urban areas, in: (ff) Critical biodiversity areas or ecosystem service areas as identified in systematic biodiversity plans <i>adopted by the competent authority or in bioregional plans;</i>

4.2 LEGISLATION AND GUIDELINES PERTINENT TO THIS EIA

The scope and content of this Final Scoping Report has been informed by the following legislation, guidelines and information series documents:

4.2.1 National Legislation

- National Environmental Management Act (NEMA) (Act 107 of 1998);
- EIA Regulations published in Government Notice R543, 544, 545 and 546 on 18 June 2010 in *Government Gazette* 33306 (as amended);
- Guidelines published in terms of the NEMA EIA Regulations, in particular:
 - Guideline 4: Public Participation in support of the Environmental Impact Assessment Regulations, 2006 (DEAT, May 2006)
 - Guideline 5: Assessment of alternatives and impacts in support of the Environmental Impact Assessment Regulations, 2006 (DEAT, June 2006)
 - Integrated Environmental Management Information Series (Booklets 0 to 21) published by DEAT over the period 2002 to 2005;
- Land Use Planning Ordinance (Ordinance 15 of 1985);
- National Environmental Management: Biodiversity Act (NEMBA) (Act 10 of 2004);
- Conservation of Agricultural Resources Act (CARA) (Act 43 of 1983);
- National Heritage Resources Act (NHRA) (Act 25 of 1999);
- National Water Act (Act 36 of 1998);
- Municipal Systems Act (Act 32 of 2000);
- Subdivision of Agricultural Land Act (SALA) (Act 70 of 1970);
- Animal Health Act (Act 7 of 2002); and the
- Electricity Act (Act 41 of 1987).

A review of relevant legislation applicable to the various specialist studies and this EIA will be undertaken as part of the EIA process.

4.2.2 Overview of SA Energy Policy and Planning

Long-term Mitigation Strategy, 2008

The **Long-term Mitigation Strategy** (LTMS) was a research-based, scenario building process designed to assess the potential for greenhouse gas mitigation within the South African economy over a 50 year period. A wide range of stakeholders across government, business, labour, and the scientific community looked at options for reducing our greenhouse gas emissions with MARKAL, a modelling energy tool used internationally. It showed that South Africa's emissions would increase fourfold if steps were not taken to reduce them.

Two scenarios were modelled, namely "Growth Without Constraints" and "Required by Science". For the former scenario, emissions were projected to quadruple between 2003

Within the context of the EIA process, capacity building is not viewed as a “once off” event, but rather a series of events and/or information sharing which provides information on a continuous basis thereby building the capacity and knowledge of I&APs to participate effectively in the EIA process and raise issues of concern.

One of the challenges facing the participation process is the diversity of South African society. Public participation by its very nature is a dynamic process with various sectors of society having varying needs, values and interests. The core question for public participation is “How can I, the interested and affected party, meaningfully participate in the process?” This varies according to the needs of I&APs. The public participation process should be inclusive of all I&APs, and afford them the opportunity to raise their issues and concerns in a manner that suits them. Coupled with this, South African society is characterized by varying socio-economic, literacy and language levels all of which need to be considered in the participation process. For example, certain I&APs may want to receive documentation only and not attend meetings, some I&APs may want to only attend meetings, other I&APs may not want to attend meetings and send their comments in writing, and some I&APs may want to be actively involved throughout the process.

In order to accommodate the varying needs of I&APs and develop their capacity to participate in the process, **information sharing** forms an integral and ongoing component of the EIA process to ensure effective public participation. The following provides an overview of information sharing throughout the EIA process in order to develop the capacity of I&APs to effectively engage in the public participation process:

- *Website* – placing EIA related project information on the website www.publicprocess.co.za;
- *Language* – encouraging I&APs to use the language of their choice at meetings and providing translations at meetings in English, Afrikaans and Xhosa when required;
- *Background Information Document* (May 2011; Appendix E) – contains information on the project, EIA and public participation process;
- *Newspaper Advertisements* requesting I&APs to register their interest in the project and raise issues of concern;
- *Letters to I&APs* notifying them of the various stages of the EIA process, availability of reports for comment and inviting them to attend public meetings to be held;
- *Report Distribution* – providing hard copies of the Scoping and EIA reports at local libraries and on the project website for viewing by I&APs;
- *Public Meetings* – where representatives of the project proponent and EIA team are present to interact and engage with members of the public; and
- *Focus Group Meetings* – to target I&AP groups (e.g. Councillors, ratepayers association, surrounding landowners, affected organs of state, environmental organisations) and proactively invite them to attend a meeting where they are provided with an overview of the project and EIA process.

Documents were posted onto the website (www.publicprocess.co.za) as and when they became available and I&APs have been notified accordingly.

Task 4: Consultation with authorities

All public participation documentation will be supplied to the lead authority (National DEA) as well as other relevant authorities included on the I&AP database. Additionally, consultation with relevant authorities on a one-on-one basis will be effected where necessary. The CSIR EIA project leader and manager and the client team will seek to hold meetings as necessary with the authorities at various milestones throughout the process. The following provides an overview of authorities included on the project database:

- Provincial Department of Economic Development and Environmental Affairs
- Provincial and Local Department of Water Affairs
- National and Provincial Department of Agriculture
- SA Heritage Resources Agency
- Kouga Local Municipality
- National Energy Regulator
- Eastern Cape Department of Roads and Transport
- SA National Roads Agency Limited

Task 5: Technical Scoping with project proponent and EIA team

The Scoping process has been designed to incorporate two complementary components: a stakeholder engagement process that includes the relevant authorities and wider interested and affected parties (I&APs); and a technical process involving the EIA team and the project proponent (WKN-Windcurrent).

The purpose of the technical Scoping process is to draw on the past experience of the EIA team and the project proponent to identify environmental issues and concerns related to the proposed project at the outset, and confirm that the necessary specialist studies have been identified. Consequently, an initial meeting and site visit were held with the EIA team and the project proponent on 19 and 20 January 2011 respectively. The results from this site visit and meeting have informed the scope and Terms of Reference for the project including the specialist studies. Based on the experience of the EIA team in working on several similar projects, combined with the experience of the project proponent and their technical team (who also have extensive experience in working with similar projects locally and internationally), the specialist studies are being initiated in parallel with the Scoping process. This enables the specialists to analyse baseline information and conduct field work that will assist the EIA team in understanding the key issues raised during the public Scoping phase. The findings of the Scoping process with the public and the authorities will inform the specialist studies, which will only be completed after the Scoping process has been finalised.

Task 6: Consultation with I&APs (public) to identify issues and concerns

In order to accommodate the varying needs of I&APs as well as capture their views, issues and concerns regarding the project, a 30 day comment and registration period extending from the 19 May 2011 to the 20 June 2011 was provided prior to the release of the Draft Scoping Report for I&AP review. A 40 day comment period was provided for the review of the Draft Scoping Report which extended from the 7 July 2011 to the 17 August 2011. The comment period took into account public holidays which fell during the review period. I&APs were notified of the comment period on the Draft Scoping Report via Letter 2. Included with this correspondence was a comment form and an Executive Summary of the Draft Scoping Report as well as details of the Public Meeting which was held during the review period. Appendix G contains copies of the correspondence sent to I&APs.

The comments received from I&APs, via fax or email, have been captured in the Issues and Responses Trail contained in Chapter 5 of this report. The comments trail includes comments received from affected authorities in response to the first notification distributed on the project. Appendix H contains copies of all the comments received.

Various opportunities have been provided for I&APs to have their issues noted prior to the release of the Draft Scoping Report and for inclusion in the Final Scoping Report. These include:

- Letter 1 to I&APs (19 May 2011) notifying them of the initiation of the Scoping process and providing them with a Background Information Document (BID) to inform them about the project and a comment form;
- Newspaper advertisements placed requesting I&APs to register their interest in the project and raise issues of concern for inclusion in the Final Scoping Report;
- Site notice boards placed;
- Project information made available through the website information;
- Letter 2 to I&APs, dated 6 July 2011, notifying them of the comment period on the Draft Scoping Report which included an executive summary of the report as well as a comment form. This correspondence included notification of the Public Meeting held during the review of the Draft Scoping Report;
- Public Meeting held on the 12 July 2011, to which all I&APs were invited via Letter 2 and through the placement of newspaper advertisements;
- Placement of the Draft Scoping Report at the Jeffreys Bay Library as well as the Humansdorp Library
- Focus Group Meetings held prior to the review of the Draft Scoping Report. These meetings are aimed particularly at Councillors and community based organisations where information on the project can be provided in the language of choice of the participant.
- Written, faxed or email correspondence:

Appendices H and I of this report contains copies of the correspondence received from I&APs and notes from the focus group meetings.

Task 7: Focus Group Meetings

One-on-one focus group meetings were held with stakeholders during the review of the Draft Scoping Report. The purpose of these meetings has been to inform key stakeholders of the proposed project, the EIA process and obtain their issues and concerns for inclusion in the Final Scoping Report. It is further intended for these meetings to develop their capacity to participate in the process as well as identify issues for inclusion in the Final Scoping Report and later phases of the EIA process. The following provides an overview of the meetings held during the review of the Draft Scoping Report and participation at these meetings.

Organisation	Date of Meeting	No of Participants
St Francis Kromme Trust	12 July 2011	3
COSATU Humansdorp	12 July 2011	3
ANC Kouga Sub Region	12 July 2011	1
Total Participants		7

Appendix I includes a copy of the registration forms from the meeting. The issues raised at the meeting have been incorporated into the Issues and Responses Trail in Chapter Five, and notes from the meeting are included in Appendix I of this report. These meetings will continue to play a key role in the sharing information on the findings of the Draft EIA and the identification of comments for inclusion in the final EIA.

Task 8: Identification of Issues and Concerns

Issues and concerns raised by I&APs have been synthesized in the Issues and Responses Trail (Chapter 5). The issues and concerns were identified through the following mechanisms:

- written submissions in response to advertisements and communications with I&APs;
- issues raised through written correspondence received from I&APs (fax, email and mail); and
- Issues raised at the focus group meetings.

The Issues Trail (Chapter 5) also includes responses from the EIA Team (and, in some cases, the project proponent) to the issues raised. In general, the responses indicate how the issues will be addressed in the EIA process. In some cases, immediate responses and clarification were provided. Where issues were raised that the EIA team considers beyond the scope and purpose of this EIA process, clear reasoning for this view is provided.

The Scoping process is currently at this stage, when I&APs will be invited to submit any additional comments on the Final Scoping Report directly to the decision making authority. The following section provides an overview of the steps undertaken for the review of the Draft Scoping Report.

Task 9: Review of the Draft Scoping Report

This stage in the process entailed the release of the Draft Scoping Report for a 40-day period for public review, which extended from the 7 July 2011 to the 17 August 2011. All I&APs on the project database were notified in writing, via letter 2 dated the 6 July 2011, of the release of the Draft Scoping Report for review and were invited to attend a public meeting that was held during the review period.

The following mechanisms and opportunities were utilised to notify I&APs of the release of the Draft Scoping Report for comment:

- Letter 2: to notify I&APs of the release of the Draft Scoping Report, the comment period, which included an executive summary of the report, comment form and invitation to attend the public meeting;
- Newspaper advertisements placed in The Herald and Our Times on the 7 July 2011, notifying I&APs of the review period for the Draft Scoping Report, availability of the Draft Scoping Report and details of the Public Meeting;
- Placement of Draft Scoping Report on the project website (www.publicprocess.co.za);
- Placement of the Draft Scoping Report at the Jeffrey's Bay and Humansdorp Municipal Libraries;
- A public meeting, to which all I&APs on the project database were invited to attend, via Letter 2 and the newspaper advertisements placed, was held on the 12 July 2011; and
- One-on-one focus group meetings with key I&AP groups were held as outlined in Task 7 above.

Copies of the newspaper advertisements placed are included in Appendix D and copies of the correspondence sent to I&APs is included in Appendix G. While I&APs were notified of the public meeting via Letter 2 and through the two newspaper advertisements placed, no I&APs participated in this meeting. The I&AP database has been updated to reflect the interaction with I&APs during the review of the Draft Scoping Report, which included participation at focus group meetings and issues raised through emails, and the submission of comment forms. The database for the final Scoping Report includes **59 registered I&APs**. All issues and concerns raised during the review of the Draft Scoping Report have been captured in the updated Issues and Responses Trail in Chapter Five of this Report.

Task 10: Final Scoping Report (current stage in the process)

Letter 3 to I&APs will include notification of the submission of the Final Scoping Report to DEA for their decision making and information regarding the comment period on the Final Scoping Report. To ensure ongoing access to information, copies of the Final Scoping Report will be placed in the Jeffrey's Bay and Humansdorp Municipal Libraries and be placed on the project website (www.publicprocess.co.za).

This step marks the end of the public participation process for the Scoping Phase. The publication participation programme for the subsequent Environmental Impact Reporting Phase is presented in the Plan of Study for EIA (Chapter 6 of this report).

4.6 APPROACH TO THE ASSESSMENT OF ALTERNATIVES

As per Guideline 5: Assessment of Alternatives and Impacts (DEAT, June 2006), the EIA Regulations require that alternatives to a proposed activity be considered. Alternatives are different means of meeting the general purpose and need of a proposed activity. This may include the assessment of site alternatives, activity alternatives, process or technology alternatives, temporal alternatives and/or the no-go alternative.

Section 28 (1)(c) of the 2010 NEMA EIA Regulations requires that the scoping report must contain a description of any feasible and reasonable alternatives that have been identified. Interested and Affected Parties must also be provided with an opportunity to provide inputs into the process of formulating alternatives. The assessment of alternatives should, as a minimum, include the following:

- The consideration of the no-go alternative as a baseline scenario;
- A comparison of the selected alternatives; and
- Providing reasons for the elimination of an alternative i.e. selection criteria.

4.6.1 No-go alternative

This alternative will be included in the EIA as a benchmark against which to assess the impacts (positive and negative) of the proposed Banna Ba Pifhu Wind Energy Project. The main implications of the no-go option are, among others, a lack of additional power supply to the local area, increased electrical losses due to the large distances between power generation and consumption in the Kouga area, and increased environmentally harmful emissions due to the necessity of coal-fired power generation.

4.6.2 Land use alternatives

At present the proposed site is zoned for Agriculture, and is mainly used for extensive cattle grazing. In addition to the application for a proposed wind farm, WKN-Windcurrent also submitted an application to DEA for the erection of a 4.5 MW photovoltaic (PV) solar power project on portion 15 of farm 689 and portion 1 of farm 868 (DEA reference

number: 12/12/20/2236). These properties are included in this application for the proposed Banna Ba Pifhu wind energy facility. The PV project comprises a Basic Assessment. A Draft Basic Assessment Report has been released for public comment from 15 June 2011 until 26 July 2011 (CSIR Ref No: Stel General: 9291). WKN-Windcurrent wishes to diversify the use of renewable energy resources by erecting a solar and a wind energy facility on the same farms.

4.6.3 Location Alternatives

During the pre-feasibility for the project, WKN-Windcurrent reviewed a range of potential sites in the Kouga Region. These sites were evaluated based on a range of criteria such as:

- Local wind climate, using data from local weather stations in the area;
- Local power line network, including existing grid availability, stability and capacity, local power utilisation, future developments and planned power line upgrades;
- Road access for construction and operational maintenance and the topography of the site;
- Engagement with landowners; and
- The visibility of the project with regard to local habitation and tourism.

Based on the above review, WKN-Windcurrent selected the Banna Ba Pifhu site located near Humansdorp (subject of this EIA) as its option. Following site selection WKN-Windcurrent moved forward towards a feasibility study. An environmental screening study for the Banna Ba Pifhu site was undertaken by the CSIR in November 2009. Based on this preliminary screening, it was concluded that there were no fatal flaws identified from an environmental perspective that would necessitate termination of the project at this stage, provided that the exclusion criteria are reviewed in more detail as part of the forthcoming planning in the EIA phase.

It is recognized that wind energy developments are being planned for other sites in the Jeffrey's Bay and Humansdorp regions, and these would require their own EIA processes. The cumulative impact of these other wind projects will be considered and addressed in this EIA. The projects that will be considered are other wind project proposals in the local area (within approximately 20 km of the proposed Banna Ba Pifhu project) that have received a positive Environmental Authorisation or with EIAs in progress in the public domain, based on an internet search.

4.6.4 Technology alternatives as part of the development

The only feasible technological alternative to the horizontal axis wind turbine (HAWT) is the vertical axis wind turbine (VAWT). With the VAWT system, the turbine rotor shaft is mounted vertically as opposed to the horizontal mount of the HAWT (Figure 4.1). Such a configuration affords the VAWT various advantages, most notably; easy access to the turbine gearbox and relative quiet operation. WKN-Windcurrent, however, did not consider VAWT to be a reasonable alternative technology due to the unproven nature of these turbines at a commercial or Megawatt scale as well as its reduced efficiency (due to its relative low height and subsequent lower wind speeds at ground level) compared to that of HAWT (REFOCUS, 2003). Further the HAWT have proven worldwide that it has installed capacity of more than hundred GW.

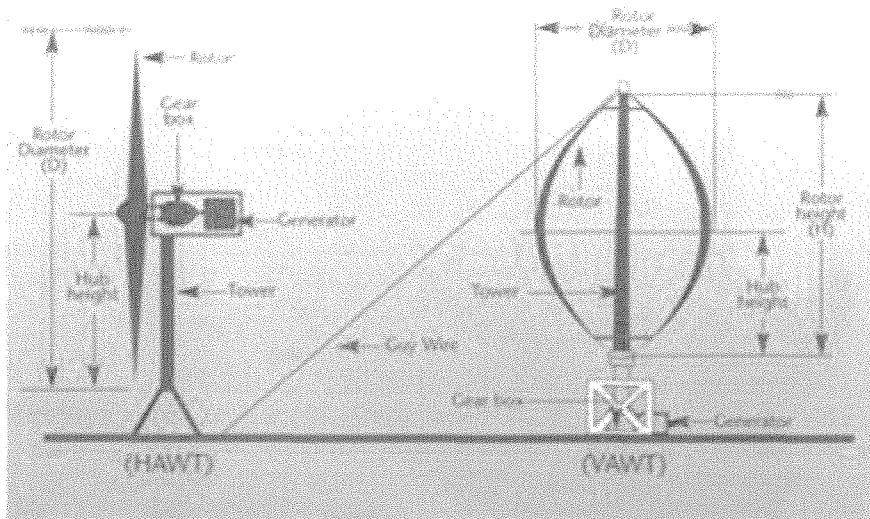


Figure 4.1: Comparison between HAWT and VAWT systems (not to scale)

4.6.5 Activity Alternatives as part of the development

The fundamental goal of the WKN-Windcurrent project is the economically viable generation of renewable energy (RE) on a commercial scale. Theoretically, RE alternatives which could potentially achieve the same power generation targets include solar power generation (concentrated solar power and photovoltaic), hydro-electricity and biomass-based energy generation. Wind energy was selected as the energy source of choice due to the very favourable wind regime of the Kouga area, compared to the relatively poor solar, hydro and biomass resources in the study area (refer to Figures 4.2 to 4.5).

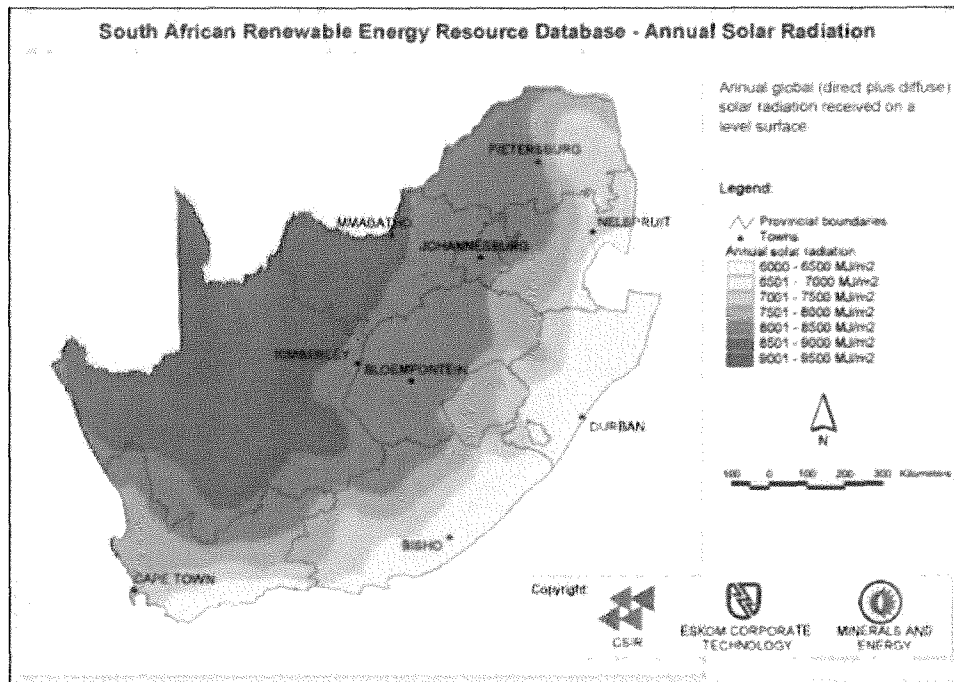


Figure 4.2: South African annual solar radiation in MJ/m²

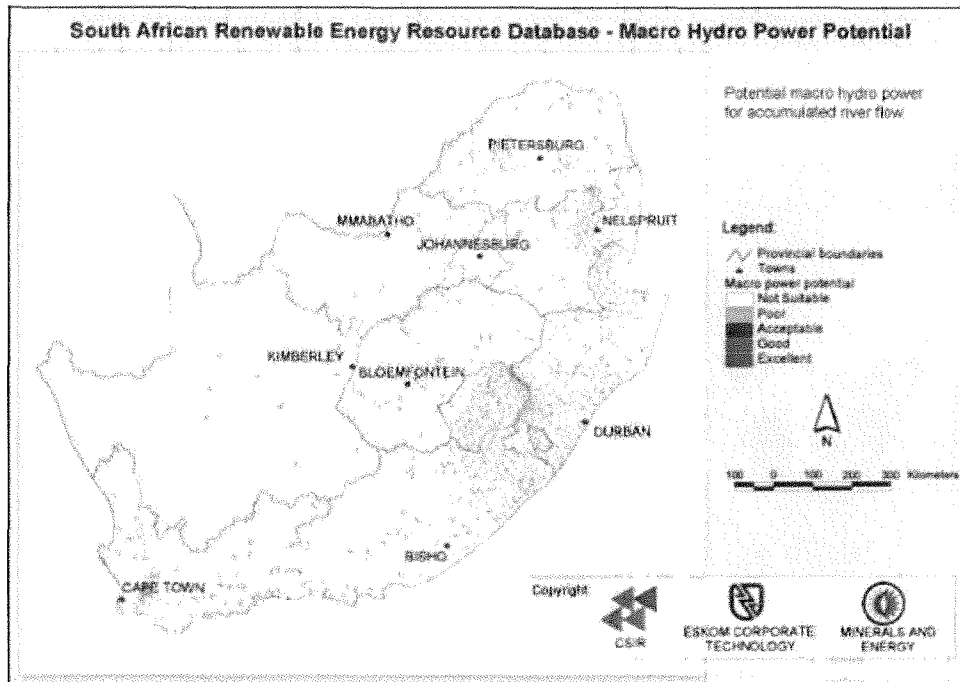


Figure 4.3: South African macro hydro power potential

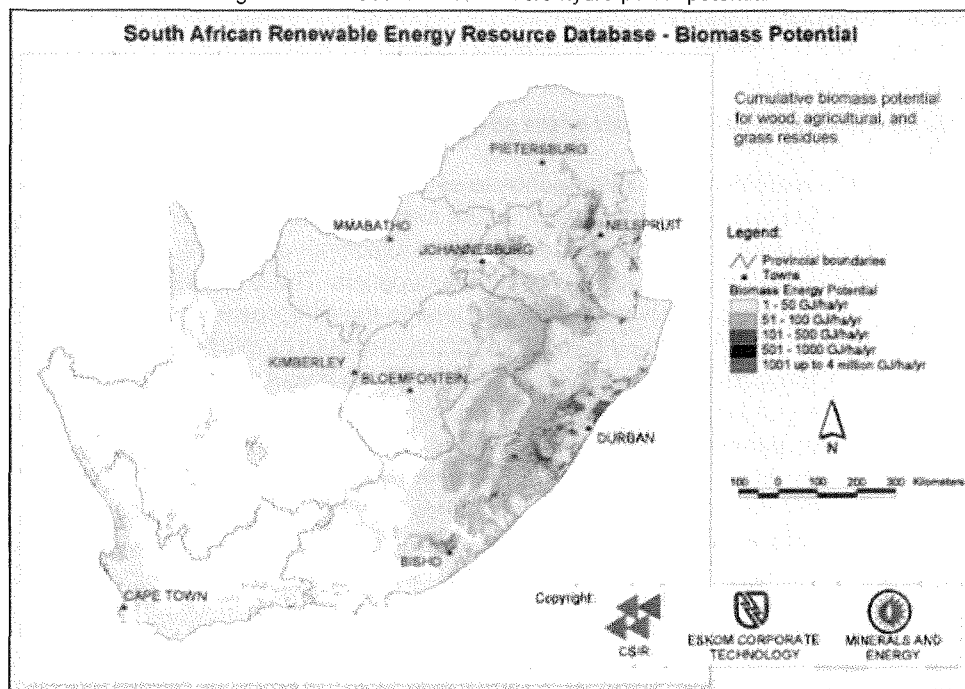


Figure 4.4: South African biomass potential

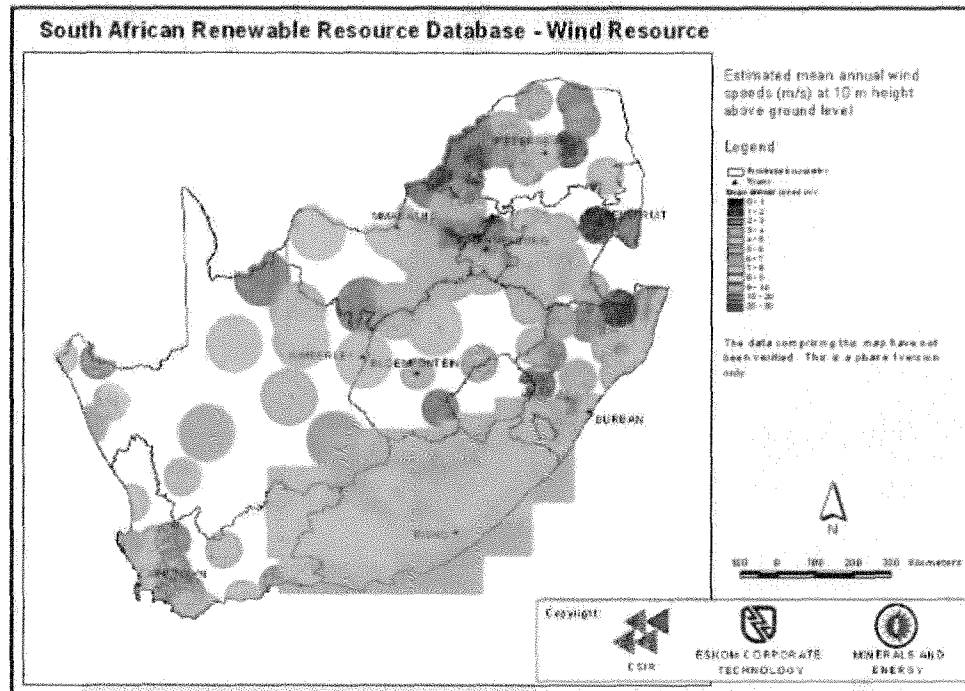


Figure 4.5: South African wind resource with the study area receiving between 4-5m & 5-6m/second mean annual wind speeds

4.6.6 Turbine size alternatives as part of the development

- WKN-Windcurrent proposes to establish approximately 15 to 25 wind turbines, depending on the capacity of the turbines to be used (i.e. 2 MW or 3.2 MW). The total installed capacity will be a maximum of 50 MW. The proponent is considering a multitude of turbine suppliers. The preferred supplier and turbine capacity will be chosen later in the EIA process.
- Alternative turbine layouts are being prepared by WKN-Windcurrent pending the size of the turbines to be used. These layouts are based on specialist input data, and will be reviewed and informed by various factors such as the proximity to the dwellings, proximity to roads, linking to access road, undisturbed natural areas, proximity to wetlands, the botanical sensitivity of the proposed area as well as the sensitivity of the area from a birds and bats perspective. The turbine layout will also be informed by the wind regime (climate).

4.7 SCHEDULE FOR THE EIA

The proposed schedule for the EIA, based on the legislated EIA process, is presented in Table 4.2. It should be noted that this schedule could be revised during the EIA process, depending on factors such as the time required for decisions from authorities.

Table 4.2: EIA Schedule for the proposed Banna Ba Pifhu Wind Energy Project

TASKS	EIA SCHEDULE (MONTHS)																		
	2011									2012									
	May	Jun	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	
2	Establish I&AP database, prepare BID and announce EIA																		
3	I&AP registration & meetings with key stakeholders to source issues																		
4	Prepare Draft Scoping Report (DSR) and Plan of Study for EIA (PSEIA)																		
5	Public comments period (40 days) on DSR and stakeholder meetings																		
6	Submit Final Scoping Report (FSR) and PSEIA to I&APs (21 days) and to authorities for decision (30 days)																		
7	Communicate authority decision to I&APs and process for next phase																		
8	Specialist studies (including fieldwork)																		
9	Prepare Draft EIA Report and EMP																		
10	Public review of Draft EIA Report and EMP (40 days)																		
11	Submit Final EIA Report and Draft EMP to authorities																		
12	Decision by authorities																		
13	Appeal process																		

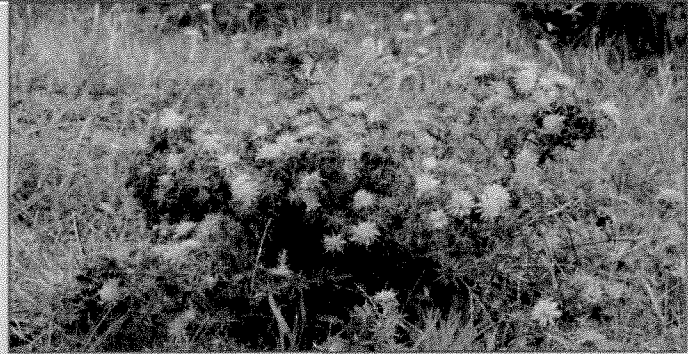
Key:

- BID: Background Information Document
- DEA: National Department of Environmental Affairs
- EIA: Environmental Impact Assessment
- DEIA: Draft EIA report
- DSR: Draft Scoping Report
- PSEIA: Plan of Study for EIA
- EMP: Environmental Management Plan

**Environmental Impact Assessment for the
proposed Banna Ba Pifhu Wind Energy Project
near Humansdorp, Eastern Cape:
Final Scoping Report**

Chapter 5:

Issues and Responses Trail





Contents

5. ISSUES AND RESPONSES TRAIL	5-2
5.1 IDENTIFICATION OF ISSUES	5-2
5.2 ISSUES AND RESPONSES TRAIL	5-4

Tables & Figures

Figure 5.1: Decision-making framework for identification of key issues for the EIA	5-3
--	-----

5. ISSUES AND RESPONSES TRAIL

5.1 IDENTIFICATION OF ISSUES

An important element of the Scoping process is to evaluate the issues raised through the Scoping interactions with authorities, the public, the specialists on the EIA team and the project proponent. In accordance with the philosophy of Integrated Environmental Management, it is important to focus the EIA on the key issues.

To assist in the identification of key issues, a decision-making process is applied to the issues and concerns raised, based on the following criteria (Figure 5.1):

1. Whether or not the issue falls within the scope and responsibility of the Banna Ba Pifhu Wind Energy EIA process; and
2. Whether or not sufficient information is available to respond to the issue or concern raised without further specialist investigation.

Issues were sourced by the project team from the following Scoping interactions:

- Letter 1 to I&APs (19 May 2011) notifying them of the initiation of the Scoping process and providing them with a Background Information Document (BID) to inform them about the project and a comment form;
- Newspaper advertisements placed;
- Site notice board;
- Letter 2 to I&APs (6 July 2011) notifying them of the review of the Draft Scoping Report and the public meeting to be held
- Focus Group Meetings held during the review of the Draft Scoping Report
- Website information; and
- Written, faxed or email correspondence.

Where I&APs have raised the same issue via different means (e.g. same issues raised in writing and by e-mail) these issues have been grouped together in Section 5.2 and the source of the issue provided. The Appendices of the Final Scoping Report (DSR) contain all detailed correspondence received. The issues identified prior to the release of the Draft Scoping Report are grouped according the following categories (number in brackets indicates the number of issues raised):

1. Issues related to potential Bird Impacts (1)
2. Issues related to potential traffic Impacts (1)
3. Issues related to potential heritage Impacts (2)
4. Project Detail (1)

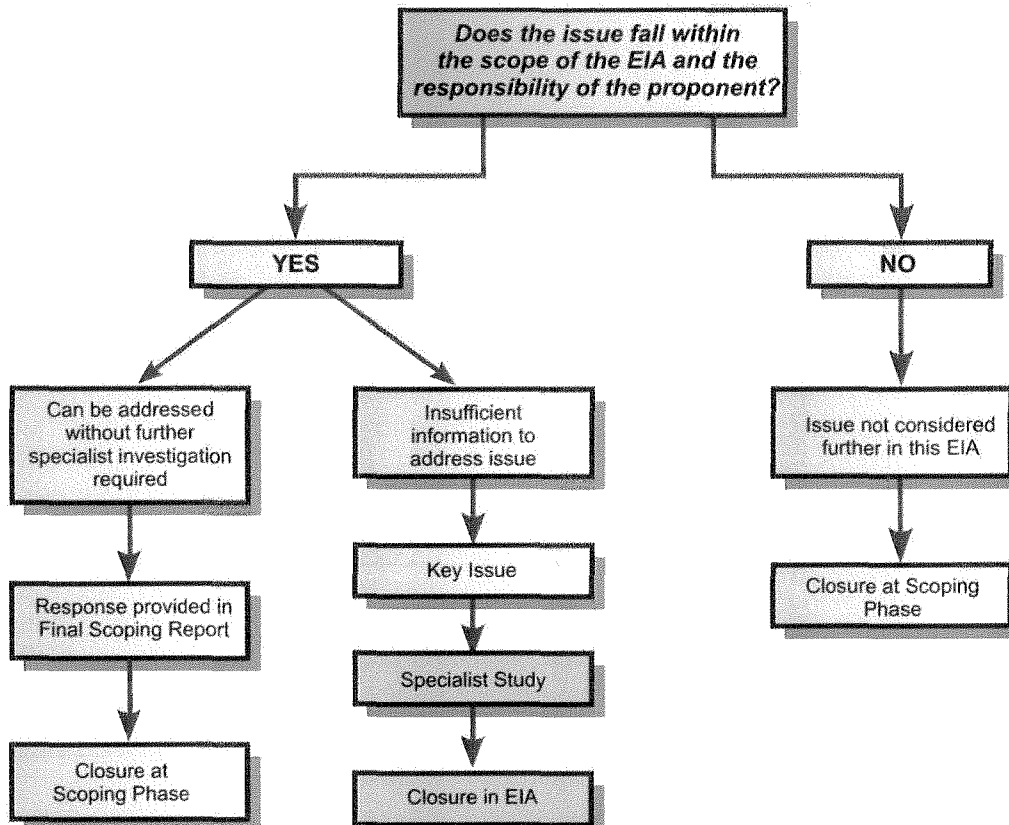


Figure 5.1: Decision-making framework for identification of key issues for the EIA

5.2 ISSUES AND RESPONSES TRAIL PRIOR TO THE RELEASE OF THE DRAFT SCOPING REPORT

The following table summarises the issues raised by I&APs prior to the release of the Draft Scoping Report for a 40 day I&AP Review period. Issues raised are summarised below, together with a response from the EIA team. A synthesis of issues to be addressed in the Specialist Studies is provided in the Plan of Study for EIA (Chapter 6 of this report). The results of the Specialist Studies will be made available to I&APs for comment as part of the Draft EIA Report. All comments received prior to the release of the Draft Scoping Report, through correspondence received are attached as Appendices to this report.

Issues raised by I&APs prior to the review of the Draft Scoping Report are indicated below:

1. POTENTIAL BIRD IMPACTS

Issue	Commentator	Date	Response
1.1 I am interested in the effect the development will have on endangered bird species. Large birds such as Blue Crane, Denham's Bustard and White-bellied Korhaan are at risk.	Yvonne Bosman, Chairman, St Francis Bird Club	24 May 2011, email	<p>Noted. The EIA report will include a bird specialist study that will be undertaken by Mr Chris van Rooyen. The study will assess potential impacts on birds, including large birds such as the ones mentioned in the email by Ms Yvonne Bosman. The specialist study will include mitigation measures to reduce or avoid potential impacts on birds. The study will also identify sensitive areas or buffer zones from a bird perspective such as wetlands and water bodies that need to be incorporated in the turbine layout.</p> <p>A set of guidelines for the monitoring of wind farms sites was released by the Endangered Wildlife Trust (EWT) and BirdLife South Africa on 31 March 2011, i.e. after the monitoring had commenced at Broadlands. This protocol benefited from experiences gained through local monitoring</p>

				<p>programmes (under the guidance of Mr Chris van Rooyen, the bird specialist on the project) that have commenced at local wind farm sites, as well as international best practice. This protocol was compiled by the Birds and Wind Energy Action Group (BAWESG), of which Mr van Rooyen is a permanent member. After the guidelines were released, the protocol at Broadlands was expanded to include more sampling periods, although it was recognised that the guidelines cannot be implemented retrospectively. The aim of the protocol currently implemented at Broadlands is to provide information useful for deciding the best course of action from a potential impact perspective, as opposed to addressing purely academic questions. The results of the pre-construction monitoring will inform the final placement of the turbines, and is being conducted under the supervision of Mr van Rooyen, by experienced monitors with proven bird identification skills.</p>
--	--	--	--	--

2. POTENTIAL IMPACT ON TRAFFIC

	Issue	Commentator	Date	Response
2.1	Provincial Roads are affected by the project	Marius Keyser, District Roads Engineer, Dept of Roads & Public Works	Letter, no date	Noted. The CSIR will contact the Eastern Cape Department of Roads and Transport to ascertain what their requirements are as the project affects provincial roads and how those requirements could be met.

3. POTENTIAL HERITAGE IMPACTS

Issue	Commentator	Date	Response
3.1 In terms of the National Heritage Resources Act, no 25 of 1999, heritage resources, including archaeological or palaeontological sites over 100 years old, graves older than 60 years, structures older than 60 years are protected. They may not be disturbed without a permit from the relevant heritage resources authority. This means that before such sites are disturbed by development it is incumbent on the developer to ensure that a Heritage Impact Assessment is done. This must include the archaeological component (Phase 1) and any other applicable heritage components. We hereby acknowledge that an Archaeological and a Palaeontological Impact Assessment will be included in the Environmental Impact Report.	Dr Mariagrazia Galimberti, SA Heritage Resources Agency, Archaeology, Palaeontology and Meteorite Unit	20 June 2011, email & letter	It is noted that the South African Heritage Resources Agency (SAHRA) acknowledges that an Archaeological and a Palaeontological Impact Assessment will be included in the Environmental Impact Report.
3.2 Please note that besides archaeology and palaeontology other heritage resources to be assessed are built structures over 60 years old, sites of cultural significance associated with oral histories, burial grounds and gravestones of victims of conflict, and cultural landscapes or views.	Dr Mariagrazia Galimberti, SA Heritage Resources Agency, Archaeology, Palaeontology and Meteorite Unit	20 June 2011, email & letter	Noted. The Environmental Impact Report will assess other heritage resources including built structures over 60 years old and other sites of cultural significance as indicated in the letter from Dr Maria Grazia Galimberti dated 20 June 2011.

4. PROJECT DETAIL

	Issue	Commentator	Date	Response
4.1	Can you confirm for me that Banna Ba Pifhu and the Broadlands solar project are proposed for the same pieces of property? Is the intention to mix the two types of technology?	Maggie Langlands, Renewable Energy Portfolio, St Francis Kromme Trust	23 June 2011, email	An application has been submitted to the national Department of Environmental Affairs for the installation of a 4.5 MW photovoltaic (PV) solar power project on portion 15 of farm 689 and portion 1 of farm 868 (the same properties included in this application). The PV project comprises a Basic Assessment (DEA reference number: 12/12/20/2236). A Draft Basic Assessment Report has been released for public comment from 15 June 2011 until 26 July 2011. The project proponent, WKN-Windcurrent, proposes to install a solar PV facility and potentially wind turbines on these farm portions.

5.3 ISSUES AND RESPONSES DURING THE REVIEW OF THE DRAFT SCOPING REPORT

The following table summarises the issues raised by I&APs during the 40 day review period for the Draft Scoping Report. Issues raised are summarised below, together with a response from the EIA team. As indicated in section 5.2 above a synthesis of issues to be addressed in the Specialist Studies is provided in the Plan of Study for EIA (Chapter 6 of this report). The results of the Specialist Studies will be made available to I&APs for comment as part of the Draft EIA Report. All comments received during the review of the Draft Scoping Report, through correspondence received and meetings held are attached as Appendices to this report. The issues identified during the review of the Draft Scoping Report are grouped according the following categories (number in brackets indicates the number of issues raised):

5. Issues related to potential visual impacts (3)
6. Issues related to potential Bird Impacts (5)
7. Issues related to potential Bat impacts (1)
8. Issues related to potential impacts on water courses and wetlands (3)
9. Issues related to potential traffic impacts (1)
10. Potential Socio-Economic impacts (9)
11. Potential impact on Agriculture (1)
12. Project Detail (3)
13. EIA process and public participation (5)
14. General (3)

Issues raised by I&APs during the review of the Draft Scoping Report are indicated below:

5. POTENTIAL VISUAL IMPACTS

Issue	Commentator	Date	Response
5.1 What is the intention of the applicant with regards to the type of structure that will be installed, are they considering the new mega structures which are	Bridget Elton, St Francis Kromme Trust	12 July 2011, focus group meeting	The capacity of the turbines that are considered ranges from 2 MW to 3.2 MW.

	appearing internationally. These are much larger than what is currently mentioned in the Draft Scoping Report.			
5.2	The potential shadow and flicker effect from the wind turbines is a key concern of the Trust, particularly when you are driving from St Francis Bay towards Humansdorp. It is estimated that once Thyspunt starts construction the same road will be used by approximately 1000 trucks per day.	Bridget Elton, St Francis Kromme Trust	12 July 2011, focus group meeting	The flicker effect will be modelled using state-of-the-art software. Should there be potential effects, mitigation measures will be put into place.
5.3	<p>Hundreds of giant turbines, sunk into huge cubes of concrete, planted over hectare after hectare of rural landscape. There are at least ten wind farms planned in the area of the Kouga Municipality in the Eastern Cape. Eight of these facilities are within a 20km radius of one another, and four of them either border on one another or almost do (Tsitsikamma, Red Cap West, RES Oyster Bay, and Red Cap Central).</p> <p>Four of these proposed developments have already received environmental authorisation. The Jeffreys Bay Wind Project, Red Cap's Western Cluster, Red Cap's Central Cluster, and Red Cap's Eastern Cluster will be spread over 12 000 hectares – almost 6% of the whole Kouga area.</p> <p>Construction of all these facilities would only permanently alter the nature of this rural landscape.</p>	Maggie Langlands, St Francis Kromme Trust	28 June 2011 email	The impact of the proposed wind farm on the landscape as well as cumulative impact will be addressed in the Environmental Impact Assessment Report.

6. POTENTIAL BIRD IMPACTS

6.1	Issue	Commentator	Date	Response
	I am concerned about the potential avian component affected by the wind farm.	Albert Schultz, Bird Life Eastern Cape	17 Aug 2011 Comment form	<p>Noted. The EIA report will include a bird specialist study that will be undertaken by Mr Chris van Rooyen. The study will assess potential impacts on birds, particularly the priority bird species. The specialist study will include mitigation measures to reduce or avoid potential impacts on birds. The study will also identify sensitive areas or buffer zones from a bird perspective such as wetlands and water bodies that need to be incorporated in the turbine layout.</p> <p>A set of guidelines for the monitoring of wind farms sites was released by the Endangered Wildlife Trust (EWT) and BirdLife South Africa on 31 March 2011, i.e. after the monitoring had commenced at Broadlands. This protocol benefited from experiences gained through local monitoring programmes (under the guidance of Mr Chris van Rooyen, the bird specialist on the project) that have commenced at local wind farm sites, as well as international best practice. This protocol was compiled by the Birds and Wind Energy Action Group (BAWESG), of which Mr van Rooyen is a permanent member. After the guidelines were released, the protocol at Broadlands was expanded to include more sampling periods, although it was recognised that the guidelines cannot be implemented retrospectively. The aim of the protocol currently implemented at Broadlands is to provide information useful for deciding the best course of action from a potential impact perspective, as opposed to addressing purely academic questions. The results of the pre-construction monitoring will inform the final placement of</p>

				the turbines, and is being conducted under the supervision of Mr van Rooyen, by experienced monitors with proven bird identification skills. Post-construction monitoring will also be undertaken to assess the impact of the wind farm on birds, particularly on priority species.
6.2	Bird impacts are imperfectly known in South African conditions and specialist EIA studies are insufficient for assessing the probable impacts.	Maggie Langlands, St Francis Kromme Trust	19 July 2011 email	See the response to 6.1 above.
6.3	<p>It is important that monitoring be undertaken on all potential renewable energy facility sites, following the BAWESG (Birds and Wind Energy Specialist Group) protocols, for at least 1 year (all four seasons) before any construction is authorized. Any environmental authorization should include the conditions attached to the proposed Kouga Wind Farm Project, i.e.</p> <p>“A bird monitoring programme must be implemented to document the effect of the operation of the wind energy facility on avifauna and bats. This should commence prior to construction, and continue during operation of the wind energy facility...Reports must be submitted to Birdlife South Africa, Endangered Wildlife Trust [EWT] and this Department [Environmental Affairs] on a quarterly basis... The baseline data collected and documented during the survey must be shared with the EWT and Birdlife South Africa...”</p> <p>Only in this way will sufficient data be accumulated to assess accurately the level of impact associated with</p>	Maggie Langlands, St Francis Kromme Trust	19 July 2011 email	See the response to 6.1 above. The reporting protocol of the monitoring results proposed by BAWESG and/or the national Department of Environmental Affairs will be adhered to.

	renewable energy facilities.			
6.4	<p>There are at least ten wind farms planned in the area of the Kouga Municipality in the Eastern Cape. Eight of these facilities are within a 20km radius of one another, and four of them either border on one another or almost do (Tsitsikamma, Red Cap West, RES Oyster Bay, and Red Cap Central).</p> <p>Four of these proposed developments have already received environmental authorisation. The Jeffreys Bay Wind Project, Red Cap's Western Cluster, Red Cap's Central Cluster, and Red Cap's Eastern Cluster will be spread over 12 000 hectares – almost 6% of the whole Kouga area.</p> <p>The effect on bird species would be significant. This particular area is the country's stronghold for Denham's Bustard, a vulnerable species, and Blue Cranes, White-bellied Korhaan, White Stork. Greater and Lesser Flamingo and Secretary bird are also found here in high densities.</p>	Maggie Langlands, St Francis Kromme Trust	28 June 2011 email	See the response to 6.1 above. The post-construction bird monitoring on all wind farms in the Kouga area is essential to determine the actual impact of the wind farms on bird species. At this stage, one can only speculate about the likelihood of potential displacement and/or collision of large terrestrial birds in the study area, particularly the ones mentioned in the email from Maggie Langlands dated 28 June 2011. Should the results of the post-construction monitoring indicate significant impacts on priority species, appropriate off-set compensation should be negotiated with the developer.
6.5	<p>The most severely threatened of South Africa's ten bustard species is the Denham's Bustard. Wind farms, like power lines, pose a serious threat to bustards (and to cranes). Internationally, bustards are at the top of the mortality lists for wind turbines. The reason has recently been identified through research, which shows that bustard visual fields have large blind sectors projecting forwards. Unlike herons, which need comprehensive forward vision for close-range stealth-foraging, bustards need wide</p>	Maggie Langlands, St Francis Kromme Trust	28 June 2011 email	See the response to 6.1 above.

	ranging vision to detect predators and food sources at considerable distances. Blind spots are the evolutionary price they pay, and without man-made obstacles in their flight paths the price would be negligible.			
--	---	--	--	--

7. POTENTIAL BAT IMPACTS

Issue	Commentator	Date	Response
7.1 Bat impacts are imperfectly known in South African conditions and specialist EIA studies are insufficient for assessing the probable impacts. It is important that monitoring be undertaken on all potential renewable energy facility sites. Any environmental authorization should include the conditions attached to the proposed Kouga Wind Farm Project.	Maggie Langlands, St Francis Kromme Trust	19 July 2011, email	<p>Noted. The EIA report will include a bat specialist study that will be undertaken by Ms Stephanie Dippenaar. The study will assess potential impacts on bats. The specialist study will include mitigation measures to reduce or avoid potential impacts on bats. The study will also identify sensitive areas or buffer zones from a bat perspective such as water bodies that need to be incorporated in the turbine layout.</p> <p>Pre-construction bat monitoring is currently being conducted on site. The results of the pre-construction monitoring will inform the final placement of the turbines. Post-construction monitoring will also be undertaken to assess the impact of the wind farm on bats.</p>

8. POTENTIAL IMPACTS ON WETLANDS AND WATER COURSES

Issue	Commentator	Date	Response
8.1 As indicated in the Draft Scoping Report (Google image page16) dated July 2011, the zoned area for the proposed project is located within the extent of the watercourse i.e. 1:100 year floodline or riparian habitat, whichever is the greatest.	Marisa Bloem, Department of Water Affairs: Port Elizabeth, Water Use	21 July 2011, email	Noted. All the requirements of the National Water Act will be adhered to and all the relevant applications will be lodged with the Department of Water Affairs.

14. GENERAL

	Issue	Commentator	Date	Response
14.1	Has National DEA released guidelines yet for Wind Energy?	Maggie Langlands, St Francis Kromme Trust	12 July 2011, focus group meeting	DEA has released a document entitled "Strategic Environmental Framework for the optimal location of wind farms in the coastal provinces of South Africa (Phase 1 for REFIT 1) dated February 2011.
14.2	We support this use of this type of electricity as it will be cheaper than using Eskom.	Monde Ralo, COSATU Humansdorp	12 July 2011, focus group meeting	Noted. The electricity produced must be fed in to the grid – the project proponent will thus have no influence over the price of electricity for consumers. To put the price of electricity into context, please refer to the Eskom multi-year pricing determination (MYPD) 2 process. Based on calculations by, for example the Standard Bank, the price of electricity generated by coal will become compatible with wind power in the near future.
14.3	Electricity is becoming expensive, will this type of electricity be cheaper for domestic use.	Vuyani Zama, ANC Humansdorp	12 July 2011, focus group meeting	See response to point 14.2 above.

Contents

6. PLAN OF STUDY FOR EIA	6-3
6.1 IDENTIFICATION OF ISSUES	6-3
6.2 OVERVIEW OF APPROACH TO PREPARING THE EIA REPORT AND EMP	6-3
6.3 PUBLIC PARTICIPATION PROCESS	6-4
<i>Task 1: Review of Draft EIA Report and EMP</i>	6-4
<i>Task 2: Comments and Responses Trail</i>	6-5
<i>Task 3: Compilation of Final EIA Report for submission to Authorities</i>	6-5
<i>Task 4: Environmental Authorisation and Appeal Period</i>	6-5
6.4 AUTHORITY CONSULTATION DURING THE EIA PHASE	6-6
6.5 APPROACH TO SPECIALIST STUDIES AND IMPACT ASSESSMENT	6-6
6.5.1 <i>Generic Terms of Reference for the assessment of impacts</i>	6-6
6.6 SPECIFIC ISSUES TO BE ADDRESSED IN SPECIALIST STUDIES	6-10
6.6.1 <i>Fauna and Flora</i>	6-10
6.6.2 <i>Birds</i>	6-11
6.6.3 <i>Bats</i>	6-11
6.6.4 <i>Visual</i>	6-12
6.6.5 <i>Noise</i>	6-12
6.6.6 <i>Socio-Economic</i>	6-12
6.6.7 <i>Heritage (archaeology, palaeontology, historical and cultural aspects)</i>	6-13
6.7 SUPPORTING TECHNICAL STUDIES	6-14

Tables & Figures

Table 6.1:	Authority consultation schedule for the EIA phase	6-6
Table 6.2:	Table for rating of impacts	6-9



6. PLAN OF STUDY FOR EIA

6.1 IDENTIFICATION OF ISSUES

The DEA *General Guide* to the EIA Regulations (Guideline 3, 2006) states that when the competent authority has accepted the Final Scoping Report and Plan of Study for EIA, the EIA phase may commence. The purpose of the EIA phase is to:

- Address issues that have been raised through the Scoping Process;
- Assess alternatives to the proposed activity in a comparative manner;
- Assess all identified impacts and determine the significance of each impact; and
- Formulate mitigation measures.

The Plan of Study for EIA (PSEIA) sets out the process to be followed in the EIA phase and is shaped by the findings of the Scoping process. The EIA phase consists of three parallel and overlapping processes:

- Central assessment process involving the authorities where inputs are integrated and presented in documents that are submitted for approval by authorities (Sections 6.2 and 6.4);
- Public participation process whereby findings of the EIA phase are communicated and discussed with I&APs and responses are documented (Section 6.3); and
- Specialist studies that provide additional information required to address the issues raised in the Scoping phase (Sections 6.5 and 6.6).

6.2 OVERVIEW OF APPROACH TO PREPARING THE EIA REPORT AND EMP

The results of the specialist studies and other relevant project information will be summarized and integrated into the Draft EIA Report. The Draft EIA Report will be released for a 40-day I&AP and authority review period, as outlined in Sections 6.3 and 6.4 below. All I&APs on the project database will be notified in writing of the release of the Draft EIA for review. It is proposed that during this review period a public meeting is held as well as focus group meetings with key I&APs. The purpose of these meetings will be to provide an overview of the outcomes and recommendations from the specialist studies, as well as to provide the opportunity for comment. Comments raised through written correspondence (emails, comments, forms) and at meetings (public meeting and focus group meetings) will be captured in a Comments and Responses Trail for inclusion in the Final EIA Report. Comments raised will be responded to by the CSIR EIA team and/or the project proponent. These responses will indicate how the issue has been dealt with in the EIA process. Should the comment received fall beyond the scope of this EIA, clear reasoning will be provided. All comments received on the Draft EIA Report will be attached as an appendix to the Final EIA Report.

The Draft EIA Report will include a draft Environmental Management Programme (EMPr), which will be prepared in compliance with the relevant regulations. This EMPr will be based broadly on the environmental management philosophy presented in the ISO 14001 standard, which embodies an approach of continual improvement. Actions in the EMPr will be drawn primarily from the management actions in the specialist studies for the construction and operational phases of the project. If the project components are decommissioned or re-developed, this will need to be done in accordance with the relevant environmental standards and clean-up/remediation requirements applicable at the time.

6.3 PUBLIC PARTICIPATION PROCESS

The key steps in the public participation process for the EIA phase are described below. This approach will be confirmed with the DEA through their review of the PSEIA. The participation process for the Scoping Process is described in Chapter 4 of this report.

Task 1: Review of Draft EIA Report and EMP

The first stage in the process will entail the release of a Draft EIA Report for a 40-day public and authority review period. Relevant organs of state and I&APs will be informed of the review process in the following manner:

- Advertisements placed in one local and one regional newspaper, e.g. *Our Times* and *The Herald*;
- Letter 4 to all I&APs (including authorities), with notification of the 40-day public review period for the Draft EIA and invitation to attend the public meeting (this letter will include the summary of the Draft EIA Report and a Comment Form);
- Public Meeting on the Draft EIA Report, where key findings of the EIA report will be communicated and I&APs will have the opportunity to provide comments and engage with the EIA team and project proponent;
- Focus Group Meeting(s) with I&APs, if requested; and
- Meeting(s) with key authorities involved in decision-making for this EIA.

The Draft EIA Report and EMP will be made available and distributed through the following mechanisms to ensure access to information on the project and to communicate the outcome of specialist studies:

- Copies of the report will be placed at the Jeffrey's Bay and Humansdorp Municipal Libraries;
- Relevant organs of state and key I&APs will be provided with a hard copy or CD version of the report;
- The report will be placed on the project website: www.publicprocess.co.za

Task 2: Comments and Responses Trail

A key component of the EIA process is documenting and responding to the comments received from I&APs and the authorities. The following comments on the Draft EIA Report and EMP will be documented:

- Written and email comments (e.g. letters and completed comment forms);
- Comments made at public meeting;
- Comments made at focus group meetings;
- Telephonic communication with PPC or CSIR contact person; and
- One-on-one meetings with key authorities and/or I&APs.

The comments received will be compiled into a Comments and Responses Trail for inclusion in the Final EIA Report. The Comments and Responses Trail will indicate the nature of the comment, when and who raised the comment. The comments received will be considered by the EIA team and appropriate responses provided by the relevant member of the team and/or specialist. The response provided will indicate how the comment received has been considered in the Final EIA Report, in the project design or EMP for the project.

Task 3: Compilation of Final EIA Report for submission to Authorities

The Final EIA Report, including the Comments and Responses Trail and EMP, will be submitted to the authorities for decision making. Letter 5 will be sent to all I&APs on the project database notifying them of the submission of the final report. The Final EIA Report will be distributed as follows:

- Copies of the report will be placed at the Jeffrey's Bay and Humansdorp Municipal Libraries;
- Relevant organs of state and key I&APs will be provided with a hard copy or CD version of the report; and the
- The report will be placed on the project website, www.publicprocess.co.za.

Task 4: Environmental Authorisation and Appeal Period

All I&APs on the project database will be notified of the issuing of the Environmental Authorisation and the Appeal period. The following process will be followed for the distribution of Environmental Authorisation and notification of appeal period:

- Copies of the Environmental Authorisation will be placed at Jeffrey's Bay and Humansdorp Municipal Libraries;
- Letter 6 to be sent to all I&APs (including organs of state), with a copy of the Environmental Authorisation and information on the Appeal Period; and
- The Environmental Decision will be placed on the project website.

All I&APs on the project database will be notified of the outcome of the appeal period, this notification will be included in Letter 7 to I&APs.

6.4 AUTHORITY CONSULTATION DURING THE EIA PHASE

Authority consultation is integrated into the public consultation process, with additional one-on-one meetings held with the lead authorities where necessary. It is proposed that the competent authority (DEA) as well as other lead authorities be consulted at various stages during the EIA process. The Table below indicates the proposed consultation schedule for the EIA phase.

Table 6.1: Authority consultation schedule for the EIA phase

Stage in EIA Phase	Form of Consultation (including provisional dates)
SCOPING PHASE	Review of draft reports: Authorities, together with other stakeholders, were granted the opportunity to review the Draft Scoping Report during the 40-day review period; and to attend the public meeting that was held on 12 July 2011 following the release the Draft Scoping Report.
REVIEW OF DRAFT EIA REPORT AND DRAFT EMP	<p>Review of draft reports: Authorities, together with other stakeholders, will have the opportunity to review the Draft EIA and EMP reports during the 40-day review period; and to attend the public meeting planned following the release of the Draft EIA Report. If requested, CSIR can present the Draft EIA and EMP reports to the authorities at a dedicated authority meeting during this review period.</p> <p>Site visit: Offer a site visit for authorities, as and when required. We suggest that, if required, this take place at the same time of the public meeting for the Draft EIA and EMP reports.</p>
FINAL EIA REPORT PHASE	Meetings with dedicated departments, if requested by DEA, with jurisdiction over particular aspects of the project (e.g. Local Authority) and potentially including relevant specialists.

6.5 APPROACH TO SPECIALIST STUDIES AND IMPACT ASSESSMENT

This section outlines the assessment methodology and legal context for specialist studies, in accordance with Section 3: Assessment of Impacts, in DEA Guideline 5, June 2006.

6.5.1 Generic Terms of Reference for the assessment of impacts

The identification of potential impacts should include impacts that may occur during the construction and operational phases of the activity. The assessment of impacts is to include direct, indirect as well as cumulative impacts.

In order to identify potential impacts (both positive and negative) it is important that the nature of the proposed activity is well understood so that the impacts associated with the activity can be understood. The process of identification and assessment of impacts will include:

- Determine the current environmental conditions in sufficient detail so that there is a baseline against which impacts can be identified and measured;
- Determine future changes to the environment that will occur if the activity does not proceed;
- An understanding of the activity in sufficient detail to understand its consequences; and
- The identification of significant impacts which are likely to occur if the activity is undertaken.

As per DEA *Guideline 5: Assessment of Alternatives and Impacts* the following methodology is to be applied to the predication and assessment of impacts. Potential impacts should be rated in terms of the direct, indirect and cumulative:

- **Direct impacts** are impacts that are caused directly by the activity and generally occur at the same time and at the place of the activity. These impacts are usually associated with the construction, operation or maintenance of an activity and are generally obvious and quantifiable.
- **Indirect impacts** of an activity are indirect or induced changes that may occur as a result of the activity. These types of impacts include all the potential impacts that do not manifest immediately when the activity is undertaken or which occur at a different place as a result of the activity.
- **Cumulative impacts** are impacts that result from the incremental impact of the proposed activity on a common resource when added to the impacts of other past, present or reasonably foreseeable future activities. Cumulative impacts can occur from the collective impacts of individual minor actions over a period of time and can include both direct and indirect impacts.
- **Spatial extent** – The size of the area that will be affected by the impact:
 - Site specific
 - Local (<2 km from site)
 - Regional (within 30 km of site)
 - National.
- **Intensity** –The anticipated severity of the impact:
 - High (severe alteration of natural systems, patterns or processes)
 - Medium (notable alteration of natural systems, patterns or processes)
 - Low (negligible alteration of natural systems, patterns or processes).
- **Duration** –The timeframe during which the impact will be experienced:
 - Temporary (less than 1 year)

- Short term (1 to 6 years)
- Medium term (6 to 15 years)
- Long term (the impact will cease after the operational life of the activity)
- Permanent (mitigation will not occur in such a way or in such a time span that the impact can be considered transient).

Using the criteria above, the impacts will further be assessed in terms of the following:

- **Probability** –The probability of the impact occurring:
 - Improbable (little or no chance of occurring)
 - Probable (<50% chance of occurring)
 - Highly probable (50 – 90% chance of occurring)
 - Definite (>90% chance of occurring).
- **Significance** – Will the impact cause a notable alteration of the environment?
 - Low to very low (the impact may result in minor alterations of the environment and can be easily avoided by implementing appropriate mitigation measures, and will not have an influence on decision-making)
 - Medium (the impact will result in moderate alteration of the environment and can be reduced or avoided by implementing the appropriate mitigation measures, and will only have an influence on the decision-making if not mitigated)
 - High (the impacts will result in major alteration to the environment even with the implementation on the appropriate mitigation measures and will have an influence on decision-making).
- **Status** - Whether the impact on the overall environment will be:
 - positive - environment overall will benefit from the impact
 - negative - environment overall will be adversely affected by the impact
 - neutral - environment overall not be affected.
- **Confidence** – The degree of confidence in predictions based on available information and specialist knowledge:
 - Low
 - Medium
 - High.
- Management Actions and Monitoring of the Impacts (EMPr);
- Where negative impacts are identified, mitigatory measures will be identified to avoid or reduce negative impacts. Where no mitigatory measures are possible this will be stated;
- Where positive impacts are identified, augmentation measures will be identified to enhance potentially positive impacts;

- Quantifiable standards for measuring and monitoring mitigatory measures; and enhancements will be set. This will include a programme for monitoring and reviewing the recommendations to ensure their ongoing effectiveness.

The Table below is to be used by specialists for the rating of impacts.

Table 6.2: Table for rating of impacts

Direct Impacts							
Mitigation	Spatial Extent	Intensity	Duration	Probability	Significance & Status		Confidence
					Without Mitigation	With Mitigation	
Flora: Increased risk of alien invasion in disturbed areas							
Alien invasive monitoring to be implemented as per EMPr	Site	Medium	Long term	High	Medium	Low	Medium

Other aspects to be taken into consideration in the assessment of impact significance are:

- Impacts will be evaluated for the construction and operation phases of the development. The assessment of impacts for the decommissioning phase will be brief, as there is limited understanding at this stage of what this might entail. The relevant rehabilitation guidelines and legal requirements applicable at the time will need to be applied. The impact evaluation will, where possible, take into consideration the cumulative effects associated with this and other facilities/projects which are either developed or in the process of being developed in the local area. In addition to the application for a proposed wind farm, WKN-Windcurrent also submitted an application to DEA for the erection of a 4.5 MW photovoltaic (PV) solar power project on portion 15 of farm 689 and portion 1 of farm 868 (DEA reference number: 12/12/20/2236). These properties are included in this application for the proposed Banna Ba Pifhu wind energy facility. The PV project comprises a Basic Assessment. A Draft Basic Assessment Report has been released for public comment from 15 June 2011 until 26 July 2011 (CSIR Ref No: Stel General: 9291). WKN-Windcurrent wishes to diversify the use of renewable energy resources by erecting a solar and a wind energy facility on the same farms.
- The cumulative impact of the proposed PV project therefore also needs to be assessed in the EIA phase.
- The impact assessment will attempt to quantify the magnitude of potential impacts (direct and cumulative effects) and outline the rationale used. Where

appropriate, national standards are to be used as a measure of the level of impact.

6.6 SPECIFIC ISSUES TO BE ADDRESSED IN SPECIALIST STUDIES

Based on an evaluation of issues to date, the following Specialist Studies are proposed as part of the EIA phase:

EIA Management Team		
Paul Lochner	CSIR	Project Leader (EAP-SA)
Minnelise Levendal	CSIR	Project Manager
Specialist Team		
Jamie Pote	Private Consultant	Ecology (Flora and Fauna)
Chris van Rooyen	Chris van Rooyen Consultants	Avifauna (birds)
Stephanie Dippenaar	Private Consultant	Bats
Dr Samantha Stoffberg (Reviewer)	Private Consultant	
Henry Holland	Mapthis	Visual impacts
Brett Williams	SafeTech	Noise Impacts
Dr Hugo van Zyl	Independent Economic Researchers	Socio-economic impacts
Dr Johan Binneman	Albany Museum	Archaeology
Dr John Almond	NaturaViva	Palaeontology
Mr Johann Lanz	Private consultant	Soil Agricultural potential

The Terms of Reference (ToRs) for the specialist studies essentially will consist of the generic assessment requirements and the specific issues identified for each study. These issues have been identified through the baseline studies, I&AP and authority consultation, as well as input from the proposed specialists based on their experience.

6.6.1 Fauna and Flora

The ecological specialist study will include the following:

- Describe the vegetation in the study area;
- Determine species composition of each vegetation type, and the presence of potential protected species;
- Describe the current state of the vegetation on site;
- Describe the conservation status and value of the vegetation;
- Describe transformations and invasive alien plant species;
- Provide a vegetation sensitivity map of the site;

- Include Faunal Assessment (Mammal; amphibian and reptile);
- Identify and assess potential impacts on fauna and flora, outline mitigatory measures and outline additional management guidelines;
- Assess the significance of the impacts;
- Indicate potential no go areas;
- Identify management actions to avoid or reduce negative impacts on fauna and flora for inclusion in the EMP.

6.6.2 Birds

The bird specialist study will include the following:

- A desktop review of available information that can support and inform the specialist study i.e. potential impacts on birds.
- Establish which species may occur in the area, their relevant conservation status and which ones would be potentially most at risk.
- Identification of issues and potential impacts related to birds, which are to be considered in combination with any additional relevant issues that may be raised through the public consultation process.
- Assessment of the potential, as well as potential cumulative, impacts on birds, both positive and negative, associated with the proposed project for the construction, operation and decommissioning phases.
- Compilation of a bird sensitivity map or identification of buffer zones to inform the turbine layout.
- Identification of management actions to avoid or reduce negative impacts; and to enhance positive benefits of the project on avifauna.
- In addition to the specialist study, a pre-construction bird monitoring programme is being undertaken. The results and recommendations of this monitoring programme will be included in the bird specialist study.

6.6.3 Bats

The bat specialist study will include the following:

- Identify and assess the potential impacts of the wind project on bats and bat mortality.
- Establish which species may occur in the area and their relevant conservation status.
- Conduct field work to assess bat species presence at the proposed site, the presence of any large bat roosts or maternity colonies, and areas of foraging activity.
- Identify potential management plans to reduce the impact of the wind farm on the local bat community.
- Compilation of a bat sensitivity map or identification of buffer zones to inform the turbine layout.

- In addition to the specialist study, a pre-construction bat monitoring programme is being undertaken. The results and recommendations of this monitoring programme will be included in the bat specialist study.

6.6.4 Visual

The visual specialist study will include the following:

- Conduct a desktop review of available information that can support and inform the specialist study.
- Identify and assess the potential visual impacts of the wind project on landscape character and sense of place, including a viewshed analysis and taking into consideration factors such as visual sensitivity and visual absorption capacity. This should be done in combination with any additional relevant issues that may be raised through the public consultation process.
- Identify possible cumulative impacts related to the visual aspects for the proposed project.
- Assess the potential impact/impacts, both positive and negative, associated with the proposed project for the construction, operation and decommissioning phases.

6.6.5 Noise

The noise specialist study will include the following:

- Conduct a site visit to identify potential noise sensitive receptors.
- Identify issues and potential impacts, as well as possible cumulative impacts, related to the noise aspects for the proposed project.
- The measurement of the existing ambient noise (day and night time).
- A noise study/modelling of the future impact during construction and operation of the proposed project, taking into consideration sensitive receptors.
- Identify and assess the potential impacts associated with the proposed project for the construction, operation and decommissioning phases.
- Identify management actions to avoid or reduce negative noise impacts for inclusion in the EMP.

6.6.6 Socio-Economic

The socio-economic specialist study will include the following:

- Describe the existing socio-economic characteristics/context of the local area and broader region.
- Identify and assess potential socio-economic impacts (e.g. job creation, skills development and training, community investment programmes, promotion of secondary industries etc) at local as well as wider scales as relevant. These are expected to include the following:

- Broad level review of the need and financial viability/risks associated with the project.
- Degree of fit with local, regional and national economic development visions and plans including renewable energy planning.
- Impacts on overall economic development potential in the area including impacts on commercial enterprises nearby the site (incl. agriculture, small businesses, tourism establishments and others).
- Impacts associated with project expenditure on direct and indirect employment and household incomes. These impacts should be investigated through an examination of how the project and the spending injection associated with it may impact on the local, regional and national economy.
- Impacts associated with environmental impacts that have economic implications. This should focus on positive impacts associated with renewable energy use as well as potential negative impacts on neighbouring land owners should they be relevant.
- Recommend mitigation measures to both minimise the negative socio-economic effects, and to maximise the positive socio-economic effects of the proposed development, both during construction and operations.
- Address any additional issues raised through the public participation process, and
- Propose and implement additional ToR, if required, based on professional expertise, experience and compliance with the relevant specialist study guidelines and best practice.

6.6.7 Heritage (archaeology, palaeontology, historical and cultural aspects)

- Identify and assess potential impact on archaeology (e.g. stone age artefacts)
- Identify and assess potential impacts on the built environment or places of historical and cultural significance (e.g. national monuments and grave sites).
- Identify and assess potential impact of excavations on palaeontology (e.g. fossils).

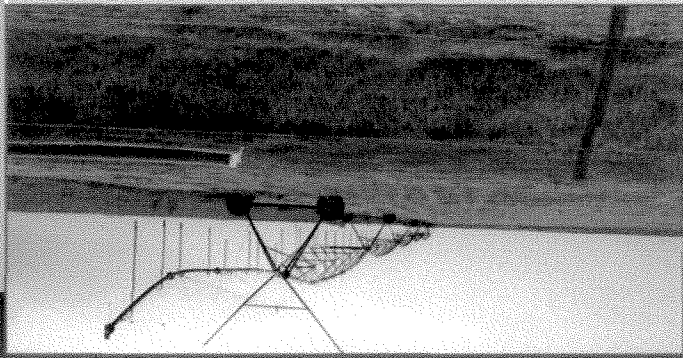
6.7 SUPPORTING TECHNICAL STUDIES

A technical analysis and input **on shadow and flicker effects** will be provided according to best practice by WKN- Windcurrent for inclusion in the EIR.

Johann Lanz will undertake a soil study to assess the agricultural potential of the site.

WKN-Windcurrent is in contact with the South African Civil Aviation Authority for approval for the proposed Banna Ba Pifhu project.





References

Chapter 7:

Environmental Impact Assessment for the
Proposed Banna Ba Pithu Wind Energy Project
near Humansdorp, Eastern Cape:
Final Scoping Report

7 REFERENCES

- Almond, J.E., de Klerk, W.J. & Gess, R. 2008. Palaeontological heritage of the Eastern Cape. Interim SAHRA technical report, 20 pp. *Natura Viva cc.*, Cape Town.
- Barnes, K.N. (ed.) 2000. The Eskom Red Data Book of Birds of South Africa, Lesotho and Swaziland. *BirdLife South Africa*, Johannesburg.
- Binneman, J.N.F. 2001. An introduction to a Later Stone Age coastal research project along the south-eastern Cape coast. *Southern African Field Archaeology* 10:75-87.
- Binneman, J.N.F. 2005. Archaeological research along the south-eastern Cape coast part1: open-air shell middens. *Southern African Field Archaeology* 13 & 14:49-77.
- Binneman, J.N.F. 1996. The symbolic construction of communities during the Holocene Later Stone Age in the south-eastern Cape. Unpublished D.Phil. thesis: University of the Witwatersrand.
- Department of Energy. 2010. IRP 2010 - 2030 Rev2 Final Report
<http://www.iea.org/co2highlights/>
http://www.sunearthtools.com/dp/tools/CO2-emissions-calculator.php?lang=de#txtCO2_3
- Friedmann, Y. & Daly, B. (eds.) 2004. Red Data Book of the Mammals of South Africa: A Conservation Assessment. CBSG Southern Africa, Conservation Breeding Specialist Group (SSG/IUCN), Endangered Wildlife Trust, South Africa. 722 pp.
- Harrison, J.A., Drewitt, D.G., Underhill, L.G., Herremans, M., Tree, A.J., Parker, V & Brown, C.J. (eds). 1997. The atlas of southern African birds. Vol. 1&2. BirdLife South Africa, Johannesburg.
- Hockey P.A.R., Dean W.R.J., and Ryan P.G. 2005. Robert's Birds of Southern Africa, seventh edition. Trustees of the John Voelcker Bird Book Fund, Cape Town.
- Kouga Municipality. 2005/2006. Revised Integrated Development Plan: 2005/2006. Kouga Municipality, Jeffreys Bay.
- Kouga Municipality. 2007. Integrated Development Plan: 2007 - 2012. Kouga Municipality, Jeffreys Bay.

- Monadjem, A., Taylor, P.J., Cotterill, F.P.D., Schoeman, M.C., 2010. *Bats of Southern and Central Africa: A Biogeographic and Taxonomic Synthesis*. In press with University of the Witwatersrand, Johannesburg.
- Municipal Demarcation Board. 2003. Municipal Profiles. Available at <http://www.demarcation.org.za/municprofiles2003/index.html>.
- Statistics SA. 2002. Census 2001. Stats SA, Pretoria.
- Statistics SA. 2008. Community Survey 2007. Stats SA, Pretoria
- Young, D.J. 2008. Coordinated Avifaunal Roadcounts. Newsletter 25. Animal Demography Unit. University of Cape Town.
- Young, D.J. 2009a. Coordinated Avifaunal Roadcounts. Newsletter 26. Animal Demography Unit. University of Cape Town.
- Young, D.J. 2009b. Coordinated Avifaunal Roadcounts. Newsletter 27. Animal Demography Unit. University of Cape Town.
- Young, D.J. 2010. Coordinated Avifaunal Roadcounts. Newsletter 28. Animal Demography Unit. University of Cape Town.
- Young, D.J. Harrison, J.A. Navarro, R.A. Anderson, M.D. & B.D. Colahan (ed). 2003. Big Birds on Farms: Mazda CAR Report 1993 - 2001. Avian Demography Unit. University of Cape Town.

Footnotes:

Briefing notes for President Thabo Mbeki on the outcome of the July Cabinet Lekgotla, Pretoria. 27 July 2008. Available online: <http://www.info.gov.za/speeches/2008/08072816151001.htm>. Accessed 2 December 2010.

Department of Energy. Available online: www.info.gov.za/view/DownloadFileAction?id=124574. Accessed 2 December 2010.

Executive Summary of the Draft Integrated Electricity Resource Plan for South Africa - 2010 to 2030. Available online: http://www.doe-irp.co.za/content/Executive_Summary_Draft_IRP2010_8Oct2010.pdf. Department of Energy. Accessed 1 December 2010.

Government Notice No. R.721. *Government Gazette 32378. 5 August 2009*.

<http://www.nersa.org.za/Admin/Document/Editor/file/Electricity/Consultation/Documents/Review%20of%20Renewable%20Energy%20Feed-In%20Tariffs%20Consultation%20Paper.pdf>. Accessed 29 March 2011.

<http://www.iea.org/co2highlights/>

http://www.sunearthtools.com/dp/tools/CO2-emissions-calculator.php?lang=de#txtCO2_3

Hughes, A, Haw, M, Winkler, H, Marquard, A. And Merven, B. (2007) *Energy emissions: a modelling input into the long-term mitigation scenarios process. LTMS Input Report 1*. Energy Research Centre, University of Cape Town.

Medium Term Risk Mitigation Plan (MTRM) for Electricity in South Africa - 2010 to 2016. http://www.doe-irp.co.za/content/Medium_Term_Risk_Mitigation_Project_Phase_1.pdf. Department of Energy. Accessed 1 December 2010.

NERSA. *Rules on selection criteria for renewable energy projects under the REFIT programme*. Available online: <http://www.nersa.org.za/Admin/Document/Editor/file/Electricity/Legislation/Regulatory%20Rules/RULES%20FOR%20SELECTION%20CRITERIA%2019%20Feb10.pdf>. Accessed 3 November 2010.

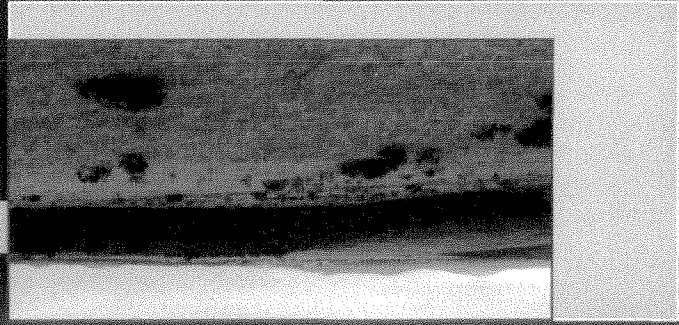
South Africa Renewable Energy Feed-in Tariff (REFIT). Regulatory Guidelines 26 March 2009. Government Notice No. 382. *Government Gazette 32122. 17 April 2009*.



**Environmental Impact Assessment for the
Proposed Banna Ba Pithu Wind Energy Project
near Humansdorp, Eastern Cape:
Final Scoping Report**

APPENDICES

Curriculum Vitae – Paul Lochner and Minnelise Levendal	Appendix A
EIA Application Form submitted to DEA and Letters from DEA	Appendix B
Site notice boards	Appendix C
Advertisements	Appendix D
Background Information Document	Appendix E
Database of Interested and Affected Parties	Appendix F
Correspondence to Interested and Affected Parties	Appendix G
Correspondence from Interested and Affected Parties	Appendix H
Notes from meetings held during the review of the Draft	Appendix I
Scoping Report	



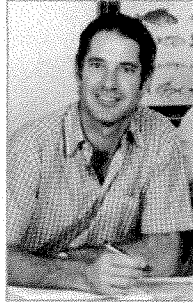
Paul Lochner and Minnelise Leventhal
Curriculum Vitae

Appendix A:

**Environmental Impact Assessment for the
proposed Banna Ba Pithu Wind Energy Project
near Humansdorp, Eastern Cape:
Final Scoping Report**

CSIR
Jan Cilliers Street
PO Box 320
Stellenbosch 7600
South Africa

Phone: +27 21 888 2400
Fax: +27 21 888 2693
Email: plochner@csir.co.za



Curriculum Vitae

Paul Lochner

Name of firm	CSIR
Name of staff	Paul Andrew Lochner
Profession	Environmental Assessment and Management
Position in firm	Project Leader in Environmental Assessment & Management
Date of birth	13 June 1969
Years with firm	18 years
Nationality	South African

Biographical sketch Paul Lochner commenced work at CSIR in 1992, after completing a degree in Civil Engineering and a Masters in Environmental Science, both at the University of Cape Town. His initial work at CSIR focused on sediment dynamics and soft engineering applications in the coastal zone, in particular, beach and dune management. He conducted several shoreline erosion analyses and prepared coastal zone management plans for beaches. He also prepared wetland management plans.

As the market for environmental assessment work grew, he led Environmental Impact Assessments (EIAs), in particular for coastal resort developments and large-scale industrial developments located on the coast; and Environmental Management Plans (EMPs), in particular for wetlands, estuaries and coastal developments. He has also been involved in researching and

applying higher-level approaches to environmental assessment and management, such as Strategic Environmental Assessment (SEA). In 1998 and 1999, he coordinated the SEA research programme within the CSIR, and was a lead author of the Guideline Document for SEA in South Africa, published jointly by CSIR and the national Department of Environmental Affairs and Tourism in February 2000.

In 1999 and 2000, he was the project manager for the legal, institutional, policy, financial and socio-economic component of the Cape Action Plan for the Environment ("CAPE"), a large-scale multi-disciplinary study to ensure the sustainable conservation of the Cape Floral Kingdom. This was funded by the Global Environmental Fund (GEF) and prepared for WWF-South Africa. The study required extensive stakeholder interaction, in particular with government institutions, leading to the development of a Strategy and Action Plan for regional conservation.

In July 2003, he was certified as an Environmental Assessment Practitioner by the Interim Certification Board for Environmental Assessment Practitioners of South Africa. In 2004 he was lead author of the *Overview of IEM* document in the updated Integrated Environmental Management (IEM) Information Series published by national Department of Environmental Affairs and Tourism (DEAT). In 2004-2005 he was project manager for an Environmental and Social Impact Assessment (ESIA) conducted for a bauxite mine and alumina refinery in the Komi Republic (Russia), prepared in accordance with World Bank and EU policies, guidelines and standards.

In 2004-2005, he was part of the CSIR team that coordinated the preparation of the series of *Guidelines for involving specialists in EIA processes* prepared for the Western Cape Department of Environmental Affairs and Development Planning (DEADP); and authored the *Guideline for Environmental Management Plans* published by the Western Cape government in 2005.

Over the past 6 years has been closely involved with several environmental studies for industrial and port-related projects in Coega Industrial Development Zone (IDZ), near Port Elizabeth. This included an EIA and EMP for a proposed aluminium smelter, and assistance with environmental permit applications for air, water and waste. He has also conducted environmental assessments for port development, manganese export and rail development at the Coega IDZ and port.

He is currently leading the EIA for a desalination plant in Namibia; an EIA for a wind energy facility near Jeffreys Bay, South Africa; and an EIA for a proposed crude oil refinery at Coega.

Education

1990	B.Sc. Civil Engineering (awarded with Honours)	University of Cape Town
1992	M. Phil. Environmental Science	University of Cape Town

Employment record

January 1992 to June 1992: Completed Masters thesis, working in conjunction with the Environmental Evaluation Unit at the University of Cape Town. The thesis investigated the potential future ecological and socio-economic impacts resulting from the closure of a large diamond mining operation, and developed actions to mitigate these impacts.

October 1992 to present: Employed by the CSIR in Stellenbosch. Involved in coastal engineering studies; and various forms of environmental assessment and management studies. (A track record of experience is listed below).

PROFESSIONAL INVOLVEMENT IN COMMITTEES:

<i>1996/97:</i>	Committee Member of the Western Cape Branch of the International Association for Impact Assessment (IAIA)
<i>1997/98:</i>	Chairperson of the Western Cape Branch of IAIA and member of the national IAIA committee
<i>1998/99:</i>	Committee Member of the Western Cape Branch of IAIA
<i>1996 to present:</i>	Chairperson of the Intaka Island/Blouville Environmental Committee at Century City, Cape Town (This committee is tasked with overseeing the management of a wetland in the midst of a new mixed-use urban development)

Experience record

The following table presents an abridged list of projects that Paul Lochner has been involved in, indicating his role in each project:

Completion Date	Project description	Role	Client
2011 (in progress)	EIA for the proposed Ubuntu wind energy project, Eastern Cape, South Africa	Project leader	Windcurrent SA (Pty) Ltd in a Joint Venture with WKN Windkraft Nord AG
2011 (in progress)	EIA for the proposed Banna ba pifhu wind energy project, Eastern Cape, South Africa	Project leader	Windcurrent SA (Pty) Ltd in a Joint Venture with WKN Windkraft Nord AG

Completion Date	Project description	Role	Client
2009/2010 (Environmental Authorisation granted in September 2011)	EIA for the proposed BioTherm wind energy project , Overberg region, South Africa	Project leader	Biotherm South Africa (Pty) Ltd
2009/2010	Basic Assessment (BA) for monitoring masts for the proposed Biotherm wind energy project , Overberg region, South Africa	Project leader	Biotherm South Africa (Pty) Ltd
2009/2010 (in progress)	EIA for the proposed InnoWind wind energy project , Western Cape, South Africa	Project leader	InnoWind South Africa (Pty) Ltd
2009/2010	BA for the proposed InnoWind test turbines and monitoring masts , Western Cape, South Africa	Project leader	InnoWind South Africa (Pty) Ltd
2009/2010 (Environmental Authorisation granted in Feb 2010)	BA for the proposed Electrawinds Phase 1 wind energy test turbine and mast , Coega IDZ, Eastern Cape	Project leader	Electrawinds N.V. (Belgium)
2010/2011 (Environmental Authorisation granted in August 2011)	EIA for the proposed Electrawinds Phase 2 wind energy facility , Coega IDZ, Eastern Cape	Project leader	Electrawinds N.V. (Belgium)
2010/2011 (Environmental Authorisation granted in April 2011)	EIA for the proposed phase 2 Mainstream wind energy facility , Jeffrey's Bay, Eastern Cape	Project leader	Mainstream Renewable Power
2009/2010 (Environmental Authorisation granted 2010)	BA for the national wind Atlas for South Africa	Project leader	SANERI and SA Wind Energy Programme, Dept of Energy
2009/2010 (in progress)	EIA for the proposed Gecko soda plant , Otjivalunda and Arandis, Namibia	Project leader	Gecko, Namibia
2009	BA for the proposed Electrawinds test turbine and monitoring mast , Coega IDZ, Eastern Cape	Project leader	Electrawinds N.V. (Belgium)
2009	EIA for the proposed desalination plant at Swakopmund, Namibia	Project leader	NamWater, Namibia
2009	EMP for the Operational Phase of the Berg River Dam , Franschhoek, South Africa	Project leader and report co-author	TCTA, South Africa
2009/2010 (in progress)	EIA for the proposed crude oil refinery at Coega, South Africa	Project leader and lead author	PetroSA, South Africa
2008	Environmental Risk Review for proposed LNG/CNG import to Mossel Bay, South Africa	Project leader and lead author	PetroSA, South Africa
2008	Review of the Business Plan for catchment management for the Berg Water Dam Project, Franschhoek, South Africa	Project reviewer and co-author	TCTA, South Africa

Completion Date	Project description	Role	Client
2007 – 2008 (in progress)	EIA for proposed Jacobsbaai Tortoise Reserve eco-development , Saldanha, Western Cape	Project Leader and co-author	Jacobsbaai Tortoise Reserve (Pty) Ltd
2007 – 2008 (in progress)	Independent reviewer for the EIA proposed Amanzi lifestyle development, Port Elizabeth	Independent reviewer appointed to advise EAP	Public Process Consultants and Pam Golding
2007 – 2008 (Environmental Authorisation granted in March 2010)	EIA for proposed Kouga wind energy and pumped storage scheme (phase 1) , Eastern Cape	Project Leader and co-author	Genesis Eco-Energy
2007	Review of EIA for the proposed Hanglip Eco-Development , Plettenberg Bay, Western Cape	Co-author of review of EIA, undertaken on behalf of DEADP	Dept of Environmental Affairs & Development Planning, Western Cape
2006-2007 (in progress)	Environmental Impact Assessment for the proposed Coega LNG-to-Power Project at the Port of Ngqura, Coega IDZ	Project Leader and co-author	Eskom and iGas
2006-2007 (in progress)	Guideline for Scoping, Environmental Impact Assessment and Environmental Management Plans for mining in South Africa	Project leader and co-author	Dept of Minerals and Energy (DME), South Africa
2006	Environmental Impact Assessment (EIA) for the extension of the Port of Ngqura, Eastern Cape	Project Leader and co-author	Transnet
2006	Integrating Sustainability Into Strategy: Handbook (Version 1)	Project Leader and co-author	CSIR (STEP research report)
2005	Technology Review for the proposed aluminium smelter at Coega, South Africa	Project Leader and lead author	Alcan, Canada
2005	Environmental and Social Impact Assessment (ESIA) report for the proposed alumina refinery near Sosnogorsk, Komi Republic, Russia	Project manager and co-author	Komi Aluminium, Russia, IFC, EBRD
2005	Guideline for Environmental Management Plans (EMPs) for the Western Cape province, including conducting a training course for provincial government	Author	Dept of Environmental Affairs & Development Planning, Western Cape
2005	Guideline for the review of specialist studies undertaken as part of environmental assessments	Member of Steering Committee and project facilitator	Dept of Environmental Affairs & Development Planning, Western Cape
2004	Review of Strategic Management Plan for Table Mountain National Park (2001-2004)	Reviewer and co-author	South African National Parks
2004	Strategic Needs Assessment Process for mainstreaming sustainable development into business operations	Researcher and co-author	CSIR (internal research)
2004	Environmental Monitoring Committees booklet in the IEM Information Series for DEAT	Contributing author	Department of Environmental Affairs and Tourism (DEAT)
2004	Overview of Integrated Environmental Management (IEM) booklet in the IEM Information Series	Lead author and researcher	DEAT
2003	Environmental Screening Study for gas power	Project Manager and	Eskom, iGas and Shell

Completion Date	Project description	Role	Client
	station, South Africa	lead author	
2003	Environmental Management Programme (EMP) Framework for the proposed Coega Aluminium Smelter; and assistance with preparing permit and licence applications	Project Manager and lead author	Pechiney, France
2003	Environmental Management Plan for the Operational Phase of the wetlands and canals at Century City, Cape Town	Project leader and lead author	Century City Property Owners' Association
2002	Environmental Impact Assessment for the proposed Pechiney aluminium smelter at Coega, South Africa	Project Manager and lead author	Pechiney, France
2002 - 2003	Research project: Ecological impact of large-scale groundwater abstraction on the Table Mountain Group aquifer	Project Manager	Water Research Commission
2002	Environmental Management Plan for the Eskom Wind Energy Demonstration Facility in the Western Cape	Co-author	Eskom
2001-2002	Environmental Impact Assessment for the Eskom Wind Energy Demonstration Facility in the Western Cape	Quality control & co-author	Eskom
2001	Environmental Due Diligence study of four strategic oil storage facilities in South Africa	Project manager and co-author	SFF Association
2000	Cape Action Plan for the Environment: a biodiversity Strategy and Action Plan for the Cape Floral Kingdom - legal, institutional, policy, financial and socio-economic component	Project manager and contributing writer	World Wide Fund for Nature (WWF): South Africa
1999	Environmental Management Plan for the establishment phase of the wetlands and canals at Century City, Cape Town	Project manager and lead author	Monex Development Company
1999	Environmental Management Programme for the Thesen Islands development, Knysna	Process design and Co-author	Chris Mulder Associates Inc; Thesen and Co.
1999	Management Plan for the coastal zone between the Eerste and Lourens River, False Bay, South Africa	Project manager and lead author	Heartland Properties and Somchem (a Division of Denel)
1998	Environmental Assessment of the Mozal Matola Terminal Development proposed for the Port of Matola, Maputo, Mozambique	Project manager and author.	SNC-Lavalin-EMS
1998	Strategic Environmental Assessment (SEA) for the Somchem industrial complex at Krantzkop, South Africa	Project manager and co-author	Somchem, a Division of Denel
1997	Strategic Environmental Assessment (SEA) for the proposed Industrial Development Zone and Harbour at Coega, Port Elizabeth, South Africa	SEA project manager and report writer	Coega IDZ Initiative Section 21 Company
1996	Environmental Impact Assessment of Development Scenarios for Thesen Island, Knysna, South Africa	Project manager and report writer	Thesen and Co.
1996	Environmental Impact Assessment of the Management Options for the Bloulei wetlands, Cape	Project manager and report writer	Ilco Homes Ltd (now Monex Ltd)

Completion Date	Project description	Role	Client
	Town		
1995	Environmental Impact Assessment for the Saldanha Steel Project, South Africa	Report writing and management of specialist studies	Saldanha Steel Project
1994	Environmental Impact Assessment for the upgrading of resort facilities on Frégate Island, Seychelles	Member of the project management team, co-author, process facilitator	Schneid Israelite and Partners
1994	Environmental Impact Assessment for exploration drilling in offshore Area 2815, Namibia	Project manager and co-author	Chevron Overseas (Namibia) Limited
1994	Management Plan for the Rietvlei Wetland Reserve, Cape Town	Project manager and lead author	Southern African Nature Foundation (now WWF-SA)
1993	Beach management plan for Stilbaai beachfront and dunes, South Africa	Project manager and lead author	Stilbaai Municipality
1993	Beach and dune management plan for Sedgefield for the beach east of the mouth of the Swartvlei estuary	Project manager and lead author	Nel and De Kock Planners, George
1993	Coastal Stability analysis and beach management plan for the Table View coastline north of Blaauwberg Road, Cape Town	Project manager and lead author	Milnerton Municipality

Publication record

A comprehensive list of publications, book chapters and contract reports is available upon request, with a summary provided below.

Publications in journals, peer reviewed conference proceedings and CSIR internal research reports:

Lochner P, Munster F and Burns M, 2006. Integrating Sustainability into Strategy (ISIS): a process to inform sustainability strategies and frameworks, *In: IAIA South Africa Annual Conference proceedings*, South Africa.

Rossouw N and Lochner P, 2006. Environmental Monitoring Committees (EMCs): purpose, function and structure. *In: IAIA South Africa Annual Conference proceedings*, South Africa.

Munster F and Lochner P, 2006, Integrating Sustainability Into Strategy: Handbook (Version 1) – describing a process to inform sustainability strategies, frameworks and reports, *CSIR Report ENV-S-1 2005-001*, ISBN 0-7988-5560-6, Stellenbosch.

Van Zyl H, de Wit M, Munster F, Lochner P, Gerber G, 2005.

Economics in Environmental Impact Assessment: demystifying the theory and practice, *In: Conference Proceedings of the IAIA South Africa 2005 Annual National Conference*. South Africa.

Lochner P, Weaver A, Gelderblom C, Peart R, Sandwith T and Fowkes S, 2003. Aligning the diverse: the development of a biodiversity conservation strategy for the Cape Floristic Region. *Biological Conservation Vol. 112, ISSN: 0006-3207*.

Lochner P, Münster F, Msutu M, Wren S, 2003. The role of stakeholder engagement in the EIA for the Coega Aluminium Smelter. *In: Conference Proceedings of the IAIA South Africa 2003 Annual National Conference*. ISBN 1-919891-04-8. South Africa.

Lochner P, Brooks W, Pesch P & Münster M. 2003, Stakeholder engagement process in the EIA of an aluminium smelter, Published in *Light Metals 2003* (Ed. Paul Crepeau), Published by TMS (the Minerals, Metals & Materials Society), ISBN Number 0-87339-531-X, USA.

Rossouw N, Audouin M, Lochner P, Heather-Clark S and Wiseman K, 2000. Development of strategic environmental assessment in South Africa. *Impact Assessment and Project Appraisal*. Vol 18, no. 3, pp 217-223. United Kingdom.

Lochner P and Fowkes S, 2000. Building partnerships for the conservation of the biodiversity of the Cape Floral Kingdom: experiences and lessons learnt from the Cape Action Plan for the Environment. *IAIA-SA Conference Proceedings 2000*. South Africa.

Lochner P and Rossouw N, 1997. The development of an Environmental Management Plan for incorporating a wetland into a large mixed use development: the Century City example. *IAIA-SA Conference Proceedings 1997*. South Africa.

Language capability

	<i>Speaking</i>	<i>Reading</i>	<i>Writing</i>
English	Excellent	Excellent	Excellent
Afrikaans	Average	Average	Average

Paul Lochner
August 2011

CSIR
Jan Cilliers Street
PO Box 320
Stellenbosch 7600
South Africa

Phone: +27 21 888 2400
Fax: +27 21 888 2693
Email: mlevendal@csir.co.za



Curriculum Vitae

Minnelise Rouchelle-Ann Levendal

Name of firm	CSIR
Name of staff	Minnelise Levendal
Profession	Environmental Assessment and Management
Gender:	Female
Years with firm	Seven years
Nationality	South African
Languages	Afrikaans and English

CONTACT DETAILS:

Postal Address:	P O Box 320, Stellenbosch, 7599
Telephone Number:	021-888 2495/2661
Cell:	0833098159
Fax:	0865051341
e-mail:	mlevendal@csir.co.za

EDUCATION

- M.Sc. (Botany) Stellenbosch University 1998
- B.Sc. (Hons.) (Botany) University of the Western Cape 1994
- B.Sc. (Education) University of the Western Cape 1993

MEMBERSHIPS:

- International Association for Impact Assessment (IAIA), Western Cape (member of their steering committee from 2001-2003)
- IUCN Commission on Education and Communication (CEC); World Conservation Learning Network (WCLN)
- American Association for the Advancement of Science (AAAS)
- Society of Conservation Biology (SCB)

EMPLOYMENT RECORD:

- **1995:** Peninsula Technicon. Lecturer in the Horticulture Department.
- **1996:** University of the Western Cape. Lecturer in the Botany Department.
- **1999:** University of Stellenbosch. Research assistant in the Botany Department (3 months)
- **1999:** Bengurion University (Israel). Research assistant (Working in the Arava valley, Negev – Israel; 2 months). Research undertaken was published (see first publication in publication list)
- **1999-2004:** Assistant Director at the Department of Environmental Affairs and Development Planning (DEA&DP). Work involved assessing Environmental Impact Assessments and Environmental Management Plans; promoting environmental management and sustainable development.
- **2004 to present:** Employed by the CSIR in Stellenbosch:
- September 2004 – May 2008: Biodiversity and Ecosystems Services Group
- May 2008 to present: Environmental Management Services Group (EMS)

PROJECT EXPERIENCE RECORD:

The following table presents a list of projects undertaken at the CSIR as well as the role played in each project:

Completion Date	Project description	Role	Client
2010-2011 (in progress)	EIA for the proposed Ubuntu wind energy project, Eastern Cape	Project Manager	Windcurrent SA (Pty) Ltd in a Joint Venture with WKN Windkraft Nord AG
2010-2011 (in progress)	EIA for the proposed Banna ba pifhu wind energy project, Eastern Cape	Project Manager	Windcurrent SA (Pty) Ltd in a Joint Venture with WKN Windkraft Nord AG
2010-2011	BA for a powerline near Swellendam in the Western Cape	Project Manager	BioTherm Energy (Pty Ltd
2011	EIA for proposed wind farm near Laingsburg in the Western Cape	Project Manager	BioTherm Energy (Pty Ltd
2010-2011 (Environmental Authorisation granted in September 2011)	EIA for a proposed wind farm near Swellendam in the Western Cape	Project Manager	BioTherm Energy (Pty Ltd

Completion Date	Project description	Role	Client
2010 (complete)	Basic Assessment for the erection of two wind monitoring masts near Swellendam and Bredasdorp in the Western Cape	Project Manager	BioTherm Energy (Pty Ltd)
2010	EIA for the erection of two wind monitoring masts near Jeffrey's Bay in the Eastern Cape	Project Manager	Windcurrent (Pty Ltd)
2009-2010 (<i>Environmental Authorisations granted 2010</i>)	Basic Assessment Process for the proposed erection of 10 wind monitoring masts in SA as part of the national wind atlas project	Project Manager	Department of Energy and SANERI
2010	South Africa's Second National Communication under the United Nations Framework Convention on Climate Change	Project Manager	SANBI
2009 (<i>Environmental Authorisation granted in 2009</i>)	Basic Assessment Report for a proposed boundary wall at the Port of Port Elizabeth, Eastern Cape	Project Manager	Transnet Ltd
2008	Developing an Invasive Alien Plant Strategy for the Wild Coast, Eastern Cape	Co-author	Eastern Cape Parks Board
2006-2008	Monitoring and Evaluation of aspects of Biodiversity	Project Leader	Internal project awarded through the Young Researchers Fund
2006	Integrated veldfire management in South Africa. An assessment of current conditions and future approaches.	Co-author	Working on Fire
2004-2005	Biodiversity Strategy and Action Plan Wild Coast, Eastern Cape, SA	Co-author	Wilderness Foundation
2005	Western Cape State of the Environment Report: Biodiversity section. (Year One).	Co-author and Project Manager	Department of Environmental Affairs and Development Planning

PUBLICATIONS:

Bowie, M. (née Levendal) and Ward, D. (2004). Water status of the mistletoe *Plicosepalus acaciae* parasitic on isolated Negev Desert populations of *Acacia raddiana* differing in level of mortality. *Journal of Arid Environments* 56: 487-508.

Wand, S.J.E., Esler, K.J. and **Bowie, M.R** (2001). Seasonal photosynthetic temperature responses and changes in ¹³C under varying temperature regimes in leaf-succulent and drought-deciduous shrubs from the Succulent Karoo, South Africa. *South African Journal of Botany* 67:235-243.

Bowie, M.R., Wand, S.J.E. and Esler, K.J. (2000). Seasonal gas exchange responses under three different temperature treatments in a leaf-succulent and a drought-deciduous shrub from the Succulent Karoo. *South African Journal of Botany* 66:118-123.

LANGUAGES

Language	Speaking	Reading	Writing
<i>English</i>	<i>Good</i>	<i>Good</i>	<i>Good</i>
<i>Afrikaans</i>	<i>Excellent</i>	<i>Excellent</i>	<i>Excellent</i>

Minnelise Levendal



August 2011

**EIA Application Form submitted to DEA
and Letters from DEA**

Appendix B:

**Environmental Impact Assessment for the
Proposed Banna Ba Pithu Wind Energy Project
near Humansdorp, Eastern Cape:
Final Scoping Report**



Windcurrent SA
Pty (Ltd)

Windcurrent SA (Pty) Ltd
PO Box 762
Wilderness 6560
VAT No. 4470254659

Cell: +27 (0)82 341 7721
Tel.: +27 (0)44 877 0564
Fax: +27 (0)44 877 0564
E-Mail: mrwolf@mweb.co.za

24th May 2010

The Director: Environmental Impact Evaluation
Department of Environmental Affairs
Private Bag X447
Pretoria 0001

Attn: Mr Conrad Aggenbach

Regarding an Application for Environmental Authorisation for the Proposed
WKN-Windcurrent Wind Energy Project near Humansdorp, Eastern Cape,
DEA Reference 12/12/20/2289

Dear Sir

We wish to request that the above project, which was originated in the name of the company Windcurrent SA (Pty) Ltd, be transferred to our new Joint Venture Company, WKN-Windcurrent SA (Pty) Ltd.

The new company is a joint venture between Windcurrent SA (Pty) Ltd and WKN-Windkraft Nord Ag (WKN) of Germany. The technical expertise, experience in the renewable energy field, and financial backing of WKN, together with the local knowledge and access of Windcurrent made the formation of the joint venture immeasurably more successful.

Unfortunately, formation of the new company took a considerable amount of time (statutory requirements) and the project was thus initiated by Windcurrent. Hence it is only now that we can request the transfer of the project to the joint venture.

Yours sincerely

Alan Wolfromm
(Director)



environmental affairs

Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

APPLICATION FORM FOR ENVIRONMENTAL AUTHORISATION

	(For official use only)
File Reference Number:	12/12/20/
NEAS Reference Number:	DEAT/EIA/
Date Received:	

Application for authorisation in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended and the Environmental Impact Assessment Regulations, 2010

PROJECT TITLE

Environmental Impact Assessment and Environmental Management Plan for a 50 MW wind energy project on Farm Broadlands near Humansdorp in the Kouga Municipal area, Eastern Cape.

Kindly note that:

1. This application form is current as of 2 August 2010. It is the responsibility of the applicant to ascertain whether subsequent versions of the form have been published or produced by the competent authority.
2. The application must be typed within the spaces provided in the form. The sizes of the spaces provided are not necessarily indicative of the amount of information to be provided. Spaces are provided in tabular format and will extend automatically when each space is filled with typing.
3. Where applicable **black out** the boxes that are not applicable in the form.
4. Incomplete applications may be returned to the applicant for revision.
5. The use of the phrase "not applicable" in the form must be done with circumspection. Should it be done in respect of material information required by the competent authority for assessing the application, it may result in the rejection of the application as provided for in the Regulations.
6. This application must be handed in at the offices of the relevant competent authority as determined by the Act and regulations.
7. No faxed or e-mailed applications will be accepted.
8. Unless protected by law, all information filled in on this application will become public information on receipt by the competent authority. Any interested and affected party should be provided with the information contained in this application on request, during any stage of the application process.

Queries must be addressed to the contact hereunder:

Departmental Details

Postal address:

Department of Environmental Affairs
Attention: Director: Environmental Impact Evaluation
Private Bag X447
Pretoria
0001

Physical address:

Department of Environmental Affairs
Fedsure Forum Building (corner of Pretorius and Van der Walt Streets)
2nd Floor North Tower
315 Pretorius Street
Pretoria
0002

Queries should be directed to the Directorate: Environmental Impact Evaluation at:

Tel: 012-310-3268
Fax: 012-320-7539

Please note that this form must be copied to the relevant provincial environmental department/s.

View the Department's website at <http://www.deat.gov.za/> for the latest version of the documents.

SITE IDENTIFICATION AND LINKAGE

Please indicate all the Surveyor-general 21 digit site (erf/farm/portion) reference numbers for all sites (including portions of sites) that are part of the application.

C	0	3	4	0	0	0	0	0	0	0	0	0	6	8	8	0	0	0	0	0
C	0	3	4	0	0	0	0	0	0	0	0	0	6	8	9	0	0	0	0	2
C	0	3	4	0	0	0	0	0	0	0	0	0	6	8	9	0	0	0	1	5
C	0	3	4	0	0	0	0	0	0	0	0	0	8	6	8	0	0	0	0	1

(if there are more than 6, please attach a list with the rest of the numbers)

(These numbers will be used to link various different applications, authorisations, permits etc. that may be connected to a specific site)

PROJECT TITLE

Environmental Impact Assessment and Environmental Management Plan for a 50 MW wind energy project on Farm Broadlands near Humansdorp in the Kouga Municipal area, Eastern Cape.

1. BACKGROUND INFORMATION

Project applicant:	Windcurrent SA (Pty) Ltd		
Trading name (if any):	Windcurrent		
Contact person:	Mr Alan Wolfromm		
Physical address:			
Postal address:	PO Box 762, Wilderness		
Postal code:	6560	Cell:	084 442 3646
Telephone:	(044) 877 0564	Fax:	0866102779
E-mail:	mrwolf@mweb.co.za/ wolfgang.paulsen@butendiek.de		
Project consultant:	CSIR		
Contact person:	Paul Lochner		
Postal address:	P.O. Box 320, Stellenbosch		
Postal code:	7599	Cell:	084 442 3646
Telephone:	021 888 2661/2486	Fax:	021 888 2693
E-mail:	plochner@csir.co.za		
Professional affiliation(s) (if any)	IAIA-SA Certified Environmental Assessment Practitioner – SA (since July 2003)		
Provincial Authority:	Department of Economic Affairs, Environment and Tourism		
Contact person:	Mr Andries Struwig		
Postal address:	Private Bag X5001, Greenacres		
Postal code:	6057	Cell:	
Telephone:	041-508 5815	Fax:	041-585 1958
E-mail:	Andries.struwig@deaet.ecape.gov.za		
Landowner:	See letter from Mr Dave Masterson attached in Appendix 1.		
Contact person:			
Postal address:			
Postal code:		Cell:	
Telephone:		Fax:	
E-mail:			
	In instances where there is more than one landowner, please attach a list of landowners with their contact details to this application-see Appendix 1 .		
Local authority in whose jurisdiction the proposed activity will fall:	Kouga Municipality		
Nearest town or districts:	Humansdorp		
Contact person:	Karina Strydom (LED Manager)		
Postal address:	PO Box 21, Jeffrey's Bay		
Postal code:	6330	Cell:	
Telephone:	042 293 2517/6 or 042 200 22 71	Fax:	0865231710
E-mail:	kougaculture@ec108.org.za		
	In instances where there is more than one local authority involved, please attach a list of local authorities with their contact details to this application.		

2. ACTIVITIES APPLIED FOR TO BE AUTHORISED

For an application for authorisation that involves more than one listed or specified activity that, together, make up one development proposal, all the listed activities pertaining to this application must be indicated.

Indicate the number and date of the relevant notice:	Activity No (s) (in terms of the relevant notice) :	Describe each listed activity as per 2010 NEMA EIA Regulations ¹ :	Describe each listed activity as per project description ² :
GN.R544, 18 June 2010	10	10. The construction of facilities or infrastructure for the transmission and distribution of electricity - (i) outside urban areas or industrial complexes with a capacity of more than 33 but less than 275 kilovolts; or	A new 132 kV substation will be constructed.
GN.R545, 18 June 2010	1	1. The construction of facilities or infrastructure for the generation of electricity where the electricity output is 20 megawatts or more.	A facility for generating an electricity output of 50 MW from wind energy will be constructed. It is understood that the size of the turbines may vary between 2 and 3 MW each, which will affect the ultimate number of turbines. The wind turbines will have a hub height of between 80 m and 105 m, depending on local wind conditions. Turbine blade lengths will be between 40 m and 56 m. The tower diameter ranges from approximately 4.5 m at the base to 3 m near the top.
	15	15. Physical alteration of undeveloped, vacant or derelict land for residential, retail, commercial, recreational, industrial or institutional use where the total area to be transformed is 20 hectares or more;	This activity may apply if the physical alteration exceeds 20ha.
GN.R546, 18 June 2010	4(a)(ii)(ee)	4. The construction of a road wider than 4 metres with a reserve less than 13,5 metres. (a) In Eastern Cape... (ii) Outside urban areas, in: (ee) Critical biodiversity areas (Type 1) as identified in systematic	This applies to the new roads which will be built.

¹ Please note that this description should not be a verbatim repetition of the listed activity as contained in the relevant Government Notice, but should be a brief description of activities to be undertaken as per the project description

² Please note that this description should not be a verbatim repetition of the listed activity as contained in the relevant Government Notice, but should be a brief description of activities to be undertaken as per the project description

		biodiversity plans adopted by the competent authority or in bioregional plans;	
	13 (a)	13. The clearance of an area of 1 hectare or more of vegetation where 75% or more of the vegetative cover constitutes indigenous vegetation, except where such removal of vegetation is required for: (a) Critical biodiversity areas and ecological support areas as identified in systematic biodiversity plans adopted by the competent authority.	There are some Critical Biodiversity Areas along the northern boundary of the site, depending on final site layout this may apply if those areas are affected.
	14a (i)	14. The clearance of an area of 5 hectares or more of vegetation where 75% or more of the vegetative cover constitutes indigenous vegetation, except where such removal of vegetation is required for: (a) In Eastern Cape...: (i) All areas outside urban areas;	This will depend on the amount of indigenous vegetation to be cleared, the site falls outside of the urban edge. It is anticipated that the area to be cleared for turbine footprints, roads and infrastructure will be greater than 5ha with more than 75 % consisting of indigenous vegetation.
	16 (iii); (iv) and a (ii)(ff)	16. The construction of: (iii) buildings with a footprint exceeding 10 square metres in size; (iv) infrastructure covering 10 square metres or more where such construction occurs within a watercourse or within 32 metres of a watercourse, measured from the edge of a watercourse, excluding where such construction will occur behind the development setback line. (a) In Eastern Cape, ii. Outside urban areas, in: (ff) Critical biodiversity areas or ecosystem service areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans;	This might apply depending on the location of roads and electrical infrastructure which may cross one of the water courses on the site. It is probable that water courses will be crossed, which will run west-east through the site.

Please note that a precautionary approach was applied and that all potential activities were included. Please note that any authorisation that may result from this application will only cover activities specifically applied for.

3. OTHER AUTHORISATIONS REQUIRED

3.1 DO YOU NEED ANY AUTHORISATIONS IN TERMS OF ANY OF THE FOLLOWING LAWS?

- | | |
|--|--------|
| 3.1.1 National Environmental Management: Waste Act | Yes/No |
| 3.1.2 National Environmental Management: Air Quality Act | Yes/No |
| 3.1.3 National Environmental Management: Protected Areas Act | Yes/No |
| 3.1.4 National Environmental Management: Biodiversity Act | Yes/No |
| 3.1.5 Mineral Petroleum Development Resources Act | Yes/No |
| 3.1.6 National Water Act | Yes/No |
| 3.1.7 National Heritage Resources Act | Yes/No |
| 3.1.8 Other (please specify) | Yes/No |

- | | |
|---|--------|
| 3.2 Have such applications been lodged already? | Yes/No |
|---|--------|

4. DECLARATIONS

4.1 The Applicant, Wind Energy (Pty) Ltd

I, **Mr Alan Wolfrohm**, declare that I -

- am, or represent³, the applicant in this application;
- have appointed / ~~will appoint~~ (delete that which is not applicable) an environmental assessment practitioner to act as the independent environmental assessment practitioner for this application / ~~will obtain exemption from the requirement to obtain an environmental assessment practitioner⁴~~;
- will provide the environmental assessment practitioner and the competent authority with access to all information at my disposal that is relevant to the application;
- will be responsible for the costs incurred in complying with the Environmental Impact Assessment Regulations, 2010, including but not limited to –
 - costs incurred in connection with the appointment of the environmental assessment practitioner or any person contracted by the environmental assessment practitioner;
 - costs incurred in respect of the undertaking of any process required in terms of the Regulations;
 - costs in respect of any fee prescribed by the Minister or MEC in respect of the Regulations;
 - costs in respect of specialist reviews, if the competent authority decides to recover costs; and
 - the provision of security to ensure compliance with conditions attached to an environmental authorisation, should it be required by the competent authority;
- will ensure that the environmental assessment practitioner is competent to comply with the requirements of these Regulations and will take reasonable steps to verify whether the EAP complies with the Regulations;
- will inform all registered interested and affected parties of any suspension of the application as well as of any decisions taken by the competent authority in this regard;
- am responsible for complying with the conditions of any environmental authorisation issued by the competent authority;
- hereby indemnify the Government of the Republic, the competent authority and all its officers, agents and employees, from any liability arising out of the content of any report, any procedure or any action which the applicant or environmental assessment practitioner is responsible for in terms of these Regulations;
- will not hold the competent authority responsible for any costs that may be incurred by the applicant in proceeding with an activity prior to obtaining an environmental authorisation or prior to an appeal being decided in terms of these Regulations;
- will perform all other obligations as expected from an applicant in terms of the Regulations;
- all the particulars furnished by me in this form are true and correct; and

³ If this is signed on behalf of the applicant, proof of such authority from the applicant must be attached.

⁴ If exemption is obtained from appointing an EAP, the responsibilities of an EAP will automatically apply to the person conducting the environmental impact assessment in terms of the Regulations.

- I realise that a false declaration is an offence in terms of regulation 71 and is punishable in terms of section 24F of the Act.


Signature of the applicant⁴/ Signature on behalf of the applicant:

WIN-WINDCURRENT SPA (PTY) LTD
Name of company (if applicable):

24/5/2011
Date:

⁴ If the applicant is a juristic person, a signature on behalf of the applicant is required as well as proof of such authority. An EAP may not sign on behalf of an applicant.



environmental affairs

Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

DETAILS OF EAP AND DECLARATION OF INTEREST

	(For official use only)
File Reference Number:	12/12/20/
NEAS Reference Number:	DEAT/EIA/
Date Received:	

Application for authorisation in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended and the Environmental Impact Assessment Regulations, 2010

PROJECT TITLE

Windcurrent EIA and Environmental Management Plan for a proposed 50 MW wind energy project near Humansdorp in the Eastern Cape.

Environmental Assessment Practitioner (EAP): ¹	Paul Lochner		
Contact person:	Paul Lochner		
Postal address:	CSIR, P.O. Box 320, Stellenbosch		
Postal code:	7599	Cell:	084 442 3646
Telephone:	021 888 2661/2486	Fax:	021 888 2693
E-mail:	plochner@csir.co.za		
Professional affiliation(s) (if any)	IAIA-SA Certified Environmental Assessment Practitioner – SA (since July 2003)		
Project Consultant:	Windcurrent SA (Pty) Ltd		
Contact person:	Alan Wolfromm		
Postal address:	PO Box 762, Wilderness		
Postal code:	6560	Cell:	0844423646
Telephone:	044-877 0564	Fax:	011-367 4601
E-mail:	mrwolf@mweb.co.za		

4.2 The Environmental Assessment Practitioner

I, PAUL LOCHNER, declare that –

General declaration:

- I act as the independent environmental practitioner in this application
- I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant
- I declare that there are no circumstances that may compromise my objectivity in performing such work;
- I have expertise in conducting environmental impact assessments, including knowledge of the Act, regulations and any guidelines that have relevance to the proposed activity;
- I will comply with the Act, regulations and all other applicable legislation;
- I will take into account, to the extent possible, the matters listed in regulation 8 of the regulations when preparing the application and any report relating to the application;
- I have no, and will not engage in, conflicting interests in the undertaking of the activity;
- I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing - any decision to be taken with respect to the application by the competent authority; and - the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;
- I will ensure that information containing all relevant facts in respect of the application is distributed or made available to interested and affected parties and the public and that participation by interested and affected parties is facilitated in such a manner that all interested and affected parties will be provided with a reasonable opportunity to participate and to provide comments on documents that are produced to support the application;
- I will ensure that the comments of all interested and affected parties are considered and recorded in reports that are submitted to the competent authority in respect of the application, provided that comments that are made by interested and affected parties in respect of a final report that will be submitted to the competent authority may be attached to the report without further amendment to the report;
- I will keep a register of all interested and affected parties that participated in a public participation process; and
- I will provide the competent authority with access to all information at my disposal regarding the application, whether such information is favourable to the applicant or not
- all the particulars furnished by me in this form are true and correct;
- will perform all other obligations as expected from an environmental assessment practitioner in terms of the Regulations; and
- I realise that a false declaration is an offence in terms of regulation 71 and is punishable in terms of section 24F of the Act.

Disclosure of Vested Interest (delete whichever is not applicable)

- I do not have and will not have any vested interest (either business, financial, personal or other) in the proposed activity proceeding other than remuneration for work performed in terms of the Environmental Impact Assessment Regulations, 2010;

- ~~I have a vested interest in the proposed activity proceeding, such vested interest being:~~

~~_____

_____~~

Bochner
CSIR

Signature of the environmental assessment practitioner:

Name of company:

7 June 2011

Date:

Letter from Mr Dave Masterson

APPENDIX 1



PO Box 320 Stellenbosch 7599 South Africa
Tel: +27 21 888 2400
Fax: +27 21 888 2693

24 May 2011

Dave Masterson Family Trust
c/o Mr David Masterson
PO Box 162
Humansdorp
6330
Tel: (042) 295 2052
Cel: 083 702 1895

Dear Mr Masterson

NOTIFICATION: ENVIRONMENTAL IMPACT ASSESSMENT FOR PROPOSED WIND FARM FACILITY NEAR HUMANSDORP, KOUGA MUNICIPALITY IN THE EASTERN CAPE PROVINCE


This letter serves to inform you, as landowner of the farms mentioned below that WKN-Windcurrent SA (Pty) Ltd (the project proponent) is proposing the construction and operation of a 50 MW wind energy project on the remainder of farm 688, portion 2 and 15 of farm 689 and Portion 1 of farm 868 near Humansdorp, Kouga Municipality in the Eastern Cape Province.

The proposed project requires environmental authorisation from the national Department of Environmental Affairs (DEA) as it comprises listed activities in terms of the Amended NEMA EIA Regulations which came into effect on 2 August 2010. As required by legislation WKN-Windcurrent (the project proponent) has appointed the CSIR as the independent consultant to undertake the Environmental Impact Assessment (EIA) for the proposed wind farm.

The EIA requires that certain specialist studies be undertaken including a visual, vegetation, noise, bat, bird and heritage study. The specialist consultants who will undertake these studies will require access to the land, and will contact you when appropriate.

Please sign the attached response sheet, and mail to me at the contact details below (please mark it for my attention). Please email or fax me a copy as well.

Yours faithfully,


Minnelise Levendal (EIA Project Manager)
CSIR; Jan Cilliers street; Stellenbosch; 7599
Tel: 021-888 2495
Fax: 086 5051341; Email: mlevendal@csir.co.za

Dave Masterson Family Trust
c/o Mr David Masterson

PO Box 162

Dave Masterson Family Trust
c/o Mr David Masterson

PO Box 162
Humansdorp
6330
Tel: (042) 295 2052
Cell: 083 702 1895

24 May 2011

Ms Minnelise Levendal
CSIR
P O Box 320
Stellenbosch
7599

Dear Ms Levendal

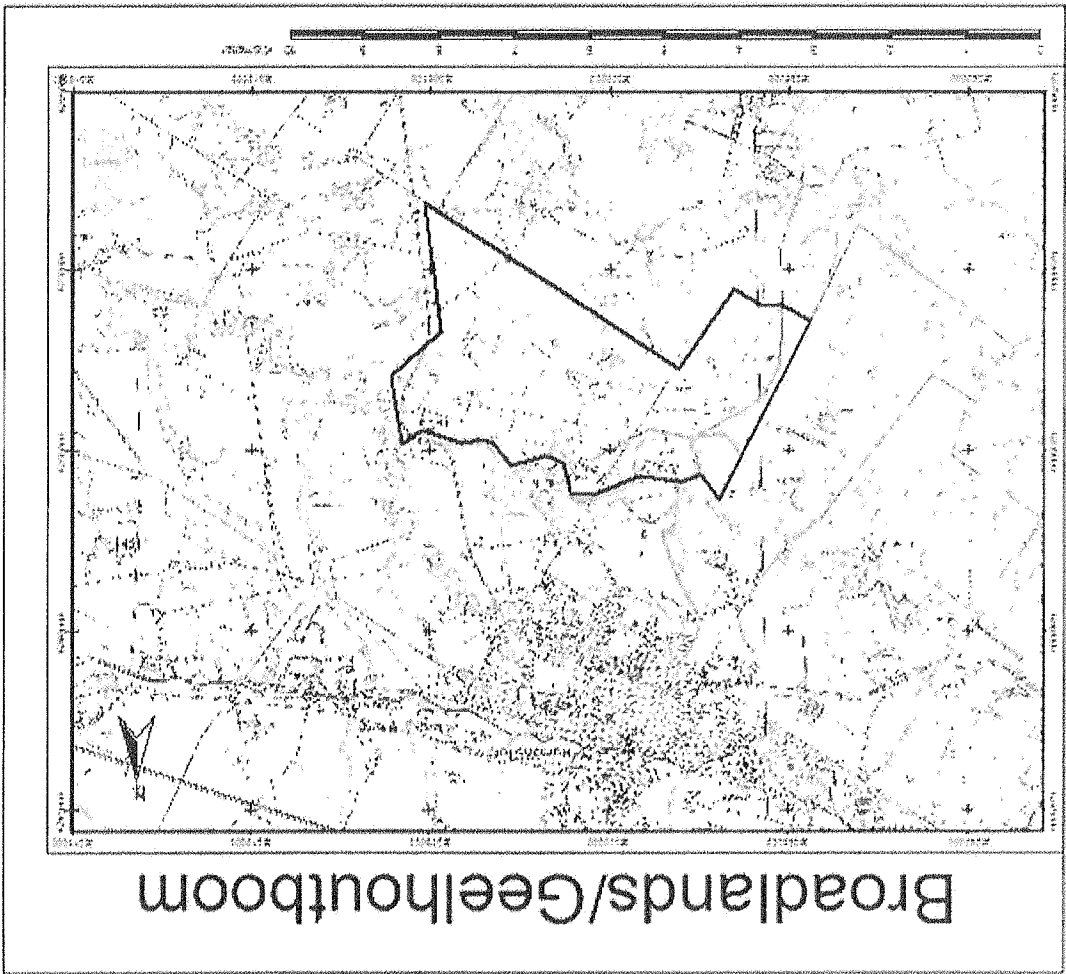
ENVIRONMENTAL IMPACT ASSESSMENT FOR THE PROPOSED WIND FARM FACILITY NEAR HUMANSDORP, KOUGA MUNICIPALITY IN THE EASTERN CAPE PROVINCE

I confirm that I have received notification that WKN-Windcurrent SA (Pty) Ltd (the project proponent), is proposing the construction and operation of a 50 MW wind energy project on the remainder of farm 688, portions 2 and 15 of farm 689 and Portion 1 of farm 868 near Humansdorp, Kouga Municipality in the Eastern Cape Province.

Yours faithfully,



David Masterson (on behalf of Dave Masterson Family Trust)



LOCALITY MAPS OF FARM BROADLANDS

APPENDIX 2



environmental affairs

Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

Private Bag X 447 · PRETORIA · 0001 · Fedure Building · 315 Pretorius Street · PRETORIA
Tel (+ 27 12) 310 3811 · Fax (+ 27 12) 322 2682

Reference: 12/12/20/2289
Enquiries: Nyiko Ngoveni

Tel: 012 395 1694 Fax: 012 320 7539 E-mail: ngoveni@environment.gov.za

Mr Paul Lochner
CSIR
PO Box 320
STELLENBOSCH
7599

Fax: 021 888 2693

PER FACSIMILE / MAIL

Dear Mr Lochner

**APPLICATION FOR ENVIRONMENTAL AUTHORISATION: PROPOSED 50MW WIND
ENERGY PROJECT ON FARM BROADLANDS NEAR HUMANSDORP IN THE KOUGA
MUNICIPAL AREA, EASTERN CAPE**

The Department confirms having received the Application Form, EAP Declaration of Interest and Specialist Declarations of Interest submitted by you on 13 May 2011 for environmental authorisation for the abovementioned project. You have submitted these documents to comply with the Environmental Impact Assessment Regulations, 2010.

The Department also confirms having received, on 20 June 2011, the original signed Application Form, original signed EAP Declaration of Interest and request letter to change the applicant name (Wind Current SA (Pty) Ltd to the new Joint Venture Company (WKN-Windcurrent SA (Pty) Ltd. The Application is accepted.

You are hereby reminded that the activity may not commence prior to an environmental authorisation being granted by the Department.

Yours sincerely

Mr Dumisani Mthembu
Acting Chief Director: Environmental Impact Management
Department of Environmental Affairs
Letter signed by: Ms Nyiko Ngoveni
Designation: PEO: Environmental Impact Evaluation
Date: 27/06/2011



environmental affairs

Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

Private Bag X 447 · PRETORIA · 0001 · Fedsure Building · 315 Pretorius Street · PRETORIA
Tel (+ 27 12) 310 3911 · Fax (+ 2712) 322 2682

Reference: 12/12/20/2289

Enquiries: Takalani Maswime

Tel: 012 310 3780 Fax: 012 320 7539 E-mail: Tmaswime@environment.gov.za

Ms Minnelise Levendal
CSIR
PO Box 320
STELLENBOSCH
7599

Fax: 021 888 2693

PER FACSIMILE / MAIL

Dear Ms Levendal

ACKNOWLEDGEMENT OF RECEIPT OF DRAFT SCOPING REPORT: PROPOSED BANNA BA PIFHU WIND ENERGY PROJECT NEAR HUMANSDORP, EASTERN CAPE

The Department confirms having received the draft Scoping Report dated June 2011 for the above-mentioned project on 4 July 2011.

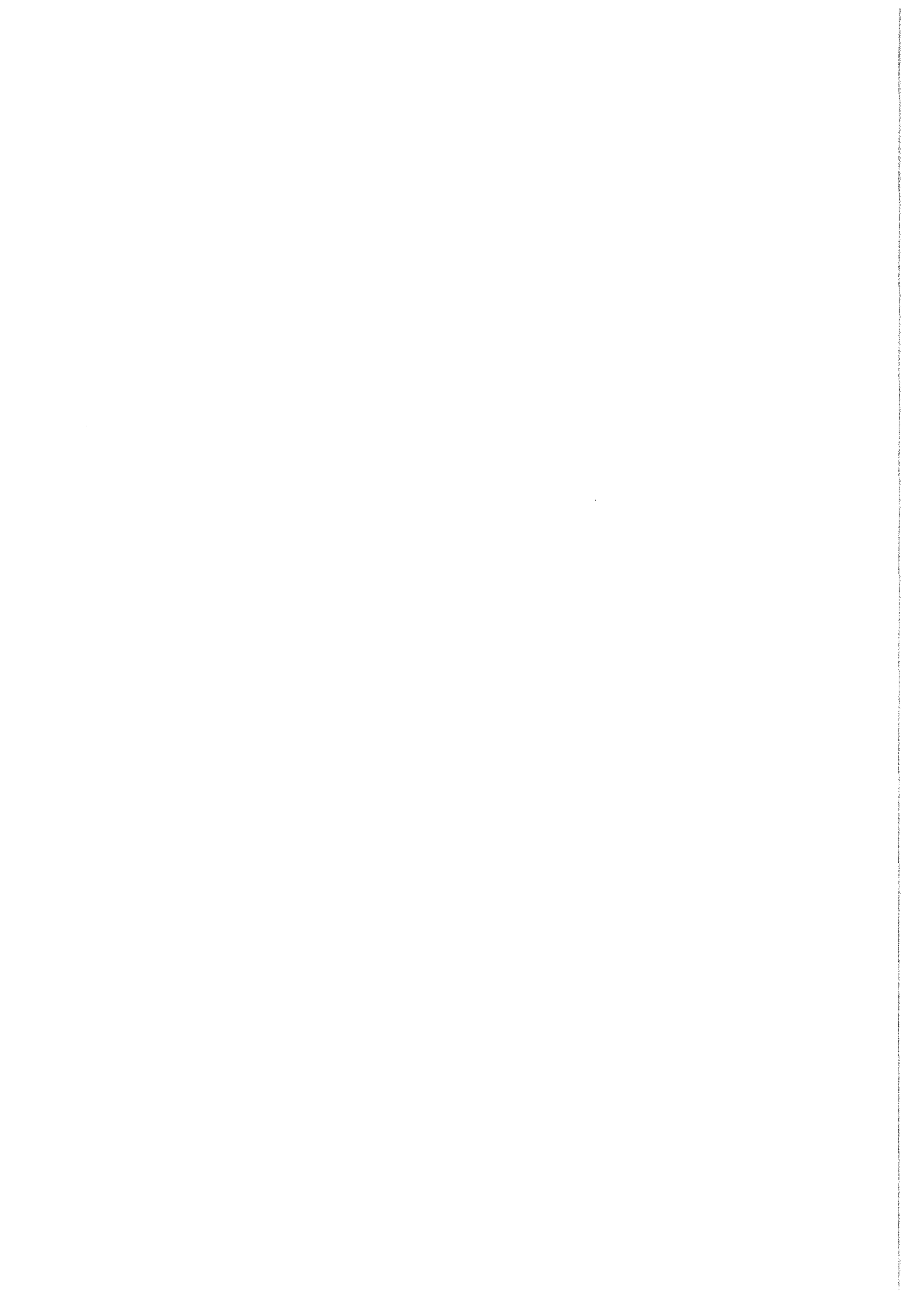
Please note that the Department will start reviewing once the final Scoping Report is received.

You are hereby reminded that the activity may not commence prior to an environmental authorisation being granted by the Department.

Yours sincerely

Mr Ishmaam Abader
Deputy Director-General: Environmental Impact Management
Department of Environmental Affairs
Letter signed by: Ms Nyiko Ngoveni
Designation: PEO: Environmental Impact Evaluation

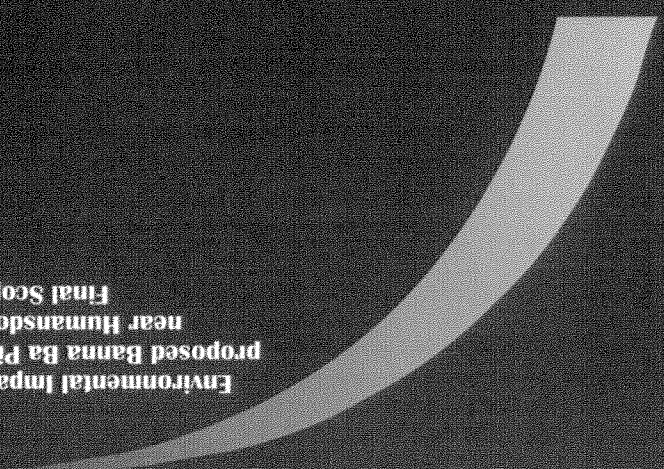
Date: 18/07/2011



Site Notice Boards

Appendix C:

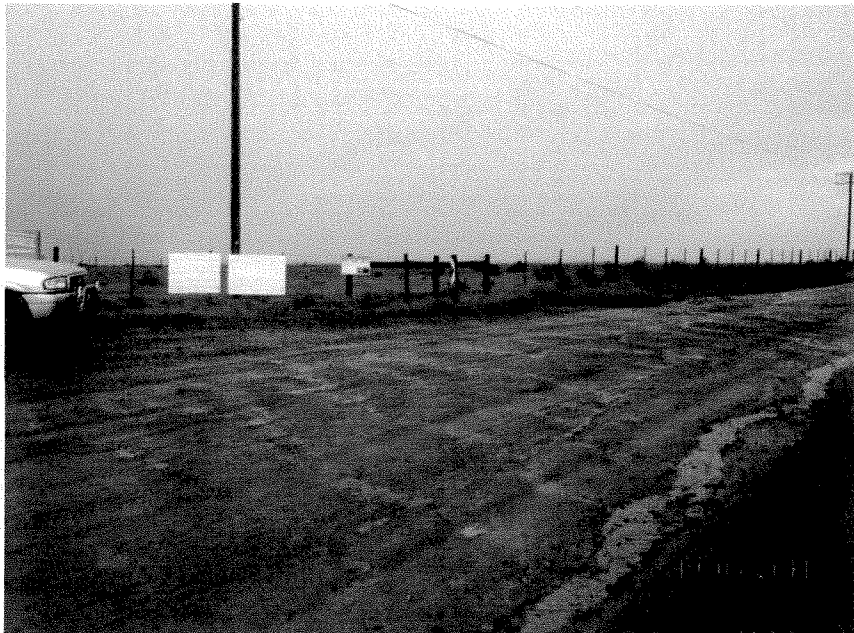
Environmental Impact Assessment for the
proposed Banna Ba Pithu Wind Energy Project
near Humansdorp, Eastern Cape:
Final Scoping Report



**Environmental Impact Assessment for the
proposed Banna Ba Pifhu Wind Energy Project
near Humansdorp, Eastern Cape:
Final Scoping Report**

Site Notice Boards Placed

Site Notice Boards Placed



Notice of Scoping and Environmental Impact Assessment Process

WKN Windcurrent SA (Pty) Ltd (WKN Windcurrent the applicant), a joint venture company between Windcurrent SA (Pty) Ltd and WKN Windkraft Nord AG (WKN), is proposing the establishment of a wind energy project on the following farms: Remainder of Farm 688, Portion 2 and 15 of Farm 689 and Portion 1 of Farm 868, Humansdorp, Kouga Local Municipality, Eastern Cape Province. WKN Windcurrent proposes to establish approximately 14 to 25 wind turbines, which may vary between 2 to 3.5 MW each with a combined generation capacity of up to 50 MW. The wind turbines will be either connected by a substation on-site to the local 66kV Eskom grid line passing over the site, or to the local Eskom substation via a new power line of approximately 10km in length.

In terms of the National Environmental Management Act (Act no 107 of 1998), as amended (NEMA), and the 2010 EIA regulations published in Government Notice R 543, 544, 545 and 546 on the 18 June 2010 in Government Gazette 33306 (as amended), notice is hereby given that a Scoping and Environmental Impact Assessment Process is required as the project includes, amongst others, the following activities listed in GN R 545:

1. The construction of facilities or infrastructure for the generation of electricity where the electricity output is 20 megawatts or more.

Additional listed activities are as follows:
GN R544: Activity 10. (i)
GN R545: Activity 15.
GN R546: Activity 4. (a) (ii) (ee); 13. (a); 14. (a) (i); 16. (ii) (iv); 16. (a) i. (ff).

The listed activities require authorisation from the National Department of Environmental Affairs (DEA) and DEA Reference Number 12/12/20/2289 has been allocated to this application. The CSIR has been appointed by Windcurrent to undertake the Scoping and Environmental Impact Assessment (EIA) required for the project and Public Process Consultants will manage the public participation component of the EIA. Available information on the project can be downloaded through the website www.publicprocess.co.za

In terms of Chapter 6 of GN R 543 interested and affected parties are required to register their interest on the database for the project in order to register on the database please clearly state any interest you may have in this matter as well as raise issues for inclusion in the Draft Scoping Report, and submit within 30 days of this notice to the consultant indicated below (dated 19May2011).

Please provide your full name, address and contact details (phone no. cell and email) to Sandy Wren, Public Process Consultants, PO Box 27888, Greenacres, 6057, phone 041-374 8426, fax 041-373 2002, email sandy@publicprocess.co.za

19.05.2011

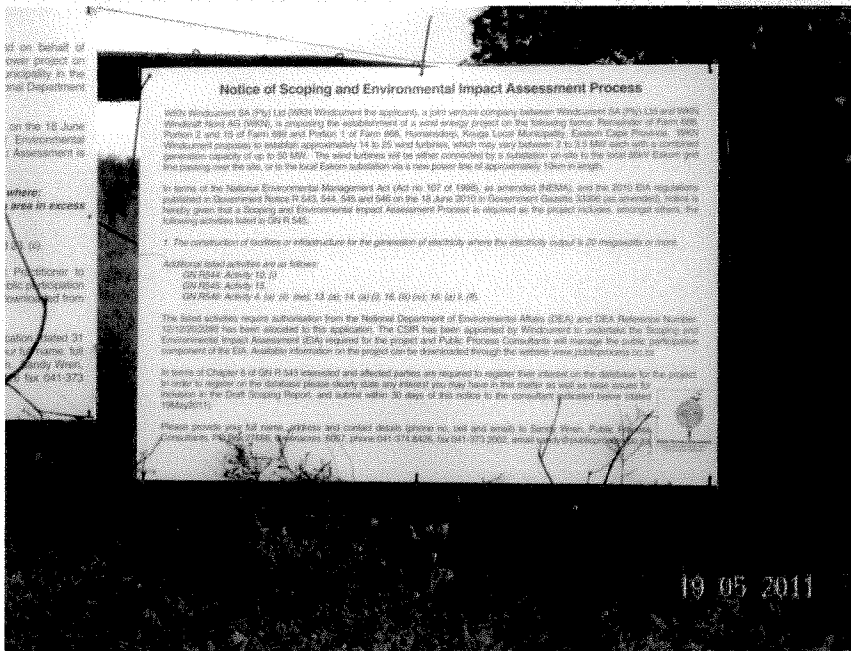
Oyster Bay Road

34° 3. 727'S

24° 45. 571'E

**Environmental Impact Assessment for the
proposed Banna Ba Pithu Wind Energy Project
near Humansdorp, Eastern Cape:
Final Scoping Report**

Site Notice Boards Placed



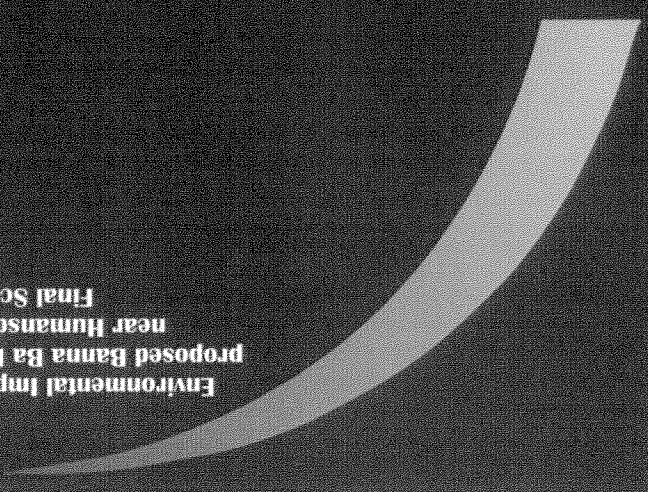
Humansdorp/ St Francis Bay Road

34° 3. 958's

24° 48. 086'E

Appendix D: Advertisements

Environmental Impact Assessment for the
Proposed Banna Ba Pithu Wind Energy Project
near Humansdorp, Eastern Cape:
Final Scoping Report



ADVERTISEMENTS PLACED BEFORE THE RELEASE OF THE DRAFT SCOPING REPORT

Our Times, 19 May 2011

**Notice of Scoping and Environmental Impact
Assessment Process**

WKN Windcurrent SA (Pty) Ltd (WKN Windcurrent the applicant), a joint venture company between Windcurrent SA (Pty) Ltd and WKN Windkraft Nord AG (WKN), is proposing the establishment of a wind energy project on the following farms: Remainder of Farm 688, Portion 2 and 15 of Farm 689 and Portion 1 of Farm 868, Humansdorp, Kouga Local Municipality, Eastern Cape Province. WKN Windcurrent proposes to establish approximately 14 to 25 wind turbines, which may vary between 2 to 3.5 MW each, with a combined generation capacity of up to 50 MW. The wind turbines will be either connected by a substation on-site to the local 66kV Eskom grid line passing over the site, or to the local Eskom substation via a new power line of approximately 10km in length.

In terms of the National Environmental Management Act (Act no 107 of 1998), as amended (NEMA), and the 2010 EIA regulations published in Government Notice R 543, 544, 545 and 546 on the 18 June 2010 in Government Gazette 33306 (as amended), notice is hereby given that a Scoping and Environmental Impact Assessment Process is required as the project includes, amongst others, the following activities listed in GN R 545;

1. The construction of facilities or infrastructure for the generation of electricity where the electricity output is 20 megawatts or more.

Additional listed activities are as follows:

GN R544: Activity 10. (l)

GN R545: Activity 15.

GN R546: Activity 4. (a) (ii) (ee); 13. (a); 14. (a) (i); 16. (iii) (iv); 16. (a) ii. (ff).

The listed activities require authorisation from the National Department of Environmental Affairs (DEA) and DEA Reference Number: 12/12/20/2289 has been allocated to this application. The CSIR has been appointed by Windcurrent to undertake the Scoping and Environmental Impact Assessment (EIA) required for the project and Public Process Consultants will manage the public participation component of the EIA. Available information on the project can be downloaded through the website www.publicprocess.co.za

In terms of Chapter 6 of GN R 543 interested and affected parties are required to register their interest on the database for the project.

In order to register on the database please clearly state any interest you may have in this matter as well as raise issues for inclusion in the Draft Scoping Report, and submit within 30 days of this notice to the consultant indicated below. Please provide your full name, address and contact details (phone no, cell and email) to Sandy Wren, Public Process Consultants, PO Box 27688, Greenacres, 6057, phone 041-374 8426, fax 041-373 2002, email sandy@publicprocess.co.za

Environmental Impact Assessment for the
Proposed Dana Da Pfluu Wind Energy Project
near Humansdorp, Eastern Cape
Final Scoping Report

Advertisements

Herald, 19 May 2011

**NOTICE OF
SCOPING AND
ENVIRONMENTAL
IMPACT
ASSESSMENT
PROCESS**

Legal Notices

WKN Windcurrent SA

joint venture company between Windcurrent SA (Pty) Ltd and WKN Windkraft Nord AG (WKN), is proposing the establishment of a wind energy project on the following farms: Hemander of Farm 688, Portion 2 and 15 of Farm 689 and Portion 1 of Farm 688, Humansdorp, Kouga Local Municipality, Eastern Cape Province. WKN Windcurrent proposes to establish wind turbines, which may vary between 2 to 3.5 MW each, with a combined generation capacity of up to 50 MW. The wind turbines will be either connected by a substation on-site to the local 66kV Eskom grid line passing over the site, or to the local Eskom substation via a new power line of approximately 10km in length.

In terms of the National Environmental Management Act (Act no 107 of 1998), as amended (NEMA), and the 2010 amended regulations published in Government Notice R 543, 544, 545 and 546 on the 18 June 2010 in Government Gazette 33006 (as amended), notice is hereby given that a Scoping and Environmental Impact Assessment Process is required as the project includes, amongst others, the following activities listed in GN R 545:

1. The construction of facilities or infrastructure for the generation of electricity where the electricity output is 20 megawatts or more.
- Additional listed activities are as follows:
- GN R544: Activity 10, (i)
 - GN R545: Activity 15, (a)
 - GN R546: Activity 4, (a)
 - (ii) (ee), 13, (a), 14, (a) (i);
 - 16, (m) (v); 16, (a) ii, (ff).

The listed activities require authorisation from the National Department of Environmental Affairs (DEA) and DEA Reference Number: 12/12/20/2289 has been allocated to this application. The CSIR has been appointed by Windcurrent to undertake the Scoping and Environmental Impact Assessment (EIA) required for the project and Public Process and Public Participation. Available information on the project can be downloaded through the website www.publicprocess.co.za

In terms of Chapter 6 of GN R 543 interested and affected parties are required to register their interest on the database for the project. In order to register on the database please clearly state any interest you may have in this matter as well as raise issues for inclusion in the Draft Scoping Report, and submit within 30 days of this notice to the consultant indicated below. Please provide your full name, address and contact details (phone no, cell and email) to Sandy Wren, Public Process Consultants, PO Box 27688, Greenacres, 6057, phone 041-374 8426, fax 041-373 2002, email sandy@publicprocess.co.za

ADVERTISEMENTS PLACED FOR THE REVIEW OF THE DRAFT SCOPING REPORT

The Herald, 7 July 2011

Legal Notices

**COMMENT
PERIOD
DRAFT
SCOPING
REPORT
AND PUBLIC
MEETING**

All I&APs are hereby notified of the comment period for the Draft Scoping Report, for the proposed Banna Ba Pithu Wind Energy Project, Farms Broadlands and Saragossa, Humansdorp, Kouga Local Municipality DEA Reference Number: 12/12/20/2289. The comment period will extend from the 7 July 2011 to the 17 August 2011.

Copies of the Draft Scoping Report are available for public viewing at the Humansdorp and Jeffreys Bay Main Library and can be downloaded from the website www.publicprocess.co.za

PUBLIC MEETING

To assist in the review of the Draft Scoping Report all I&APs are invited to attend the following Public Meeting where an overview of the Draft Report will be given and an opportunity will be provided for comments/ queries to be raised. Representatives from the CSIR, the Environmental Consultants for the Project, as well as, WKN-Windcurrent SA (Pty) Ltd, the Project Applicant, will be present to engage with members of the public.

DATE

Tuesday, 12 July 2011

TIME

12 Noon

VENUE

Humansdorp Country Club, Main Hall (Park Street, Humansdorp, entrance opposite Kemp Street).

All comments on the Draft Scoping Report will be considered in preparation of the Final Report and are to be submitted to Public Process Consultants to reach us by no later than the 17 August 2011 at the address indicated below. For further information contact: Sandy Wren, Public Process Consultants, P.O. Box 27688 Greenacres 6057, Phone (041) 374-6426 Fax (041) 373-2002 or Email sandy@publicprocess.co.za

Our Times, 7 July 2011

COMMENT PERIOD DRAFT SCOPING REPORT AND PUBLIC MEETING

All I&APs are hereby notified of the comment period for the Draft Scoping Report, for the proposed Banna Ba Pifhu Wind Energy Project, Farms Broadlands and Saragossa, Humansdorp, Kouga Local Municipality DEA Reference Number: **12/12/20/2289**.

The comment period will extend from the **7 July 2011 to the 17 August 2011**.

Copies of the Draft Scoping Report are available for public viewing at the **Humansdorp and Jeffreys Bay Main Library** and can be downloaded from the website www.publicprocess.co.za

PUBLIC MEETING

To assist in the review of the Draft Scoping Report all I&APs are invited to attend the following Public Meeting where an overview of the Draft Report will be given and an opportunity will be provided for comments/queries to be raised. Representatives from the CSIR, the Environmental Consultants for the Project, as well as, WKN-Windcurrent SA (Pty) Ltd, the Project Applicant, will be present to engage with members of the public.

DATE	TIME	VENUE
Tuesday, 12 July 2011	12 noon	Humansdorp Country Club, Main Hall (Park Street, Humansdorp, entrance opposite Kemp Street)

All comments on the Draft Scoping Report will be considered in preparation of the Final Report and are to be submitted to Public Process Consultants to reach us by no later than the **17 August 2011** at the address indicated below. For further information contact: Sandy Wren, Public Process Consultants, PO Box 27688 Greenacres 6057, Phone 041 3748426 Fax 041 3732002 or Email sandy@publicprocess.co.za

Environmental Impact Assessment for the
proposed Banna Ba Pithu Wind Energy Project
near Humansdorp, Eastern Cape:
Final Scoping Report

Appendix E:

Background Information Document

ENVIRONMENTAL IMPACT ASSESSMENT

Background Information Document Banna ba pifhu Wind Energy Project Broadlands and Saragossa Farms Humansdorp, Kouga Local Municipality



DEA Reference Number: 12/12/20/2289
May 2011

PROJECT OVERVIEW

WKN Windcurrent SA (Pty) Ltd (WKN Windcurrent), a joint venture company between Windcurrent SA (Pty) Ltd. and WKN Windkraft Nord AG (WKN), is proposing the construction of a 50 MW wind energy facility on the following farms: Remainder of Farm 688, Portion 2 and 15 of Farm 689 and Portion 1 of Farm 868, Humansdorp, Kouga Municipality, Eastern Cape Province.

WKN Windkraft Nord AG is one of the leading vertically integrated full service providers for wind farm projects in Europe and the US. WKN's turnkey services range from acquisition, development, planning, design, financing and construction to the operation, technical and commercial management of wind farms. WKN currently has over 1050MW of realised capacity in Europe and the United States of America. Windcurrent SA (Pty) Ltd is a local company which has been developing renewable energy projects since 2009 in South Africa.

The Eastern Cape does not generate bulk power and is thus reliant on electricity imports from other provinces (e.g. Mpumalanga). The existing transmission capacity to the province is fully utilised, which restricts the province from realising its industrial and rural development potential. Due to the length of the Eskom power lines from the power stations to the Kouga area and the inherent characteristics of the Kouga network, the area experiences power quality and voltage instability. This results in secondary agricultural processing companies, both small and commercial scale farmers, experiencing an intermittent and sometimes unreliable supply of electricity. The project could thus assist in stabilising energy supply to the Eastern Cape and in particular the Kouga Municipal area.

WHAT DOES THIS DOCUMENT TELL YOU?

This document provides you, as an interested and or affected party (I&AP) with background information on the proposed project as well as the Environmental Assessment and Public Participation process that will be undertaken for the project. It indicates how you can become involved in the project, receive information and raise issues that may interest and/or concern you. The sharing of information forms an important component of the Public Participation process and provides you with the opportunity to become actively involved in the environmental assessment process from the outset. The input received from I&APs together with scientific investigations assists the responsible authority, in this instance the National Department of Environmental Affairs (DEA), with their decision-making.

PROJECT LOCATION AND DETAIL

The Banna ba pifhu Wind Energy Project is located on the Broadlands and Saragossa Farms in the Kouga Municipal Area, approximately 3.5 km south of the town of Humansdorp, on the following farms:

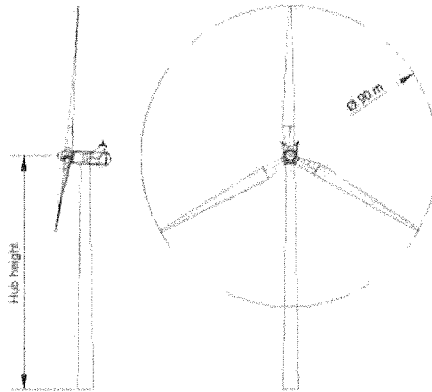
- Remainder of Farm 688
- Portion 2 and 15 of Farm 689
- Portion 1 of Farm 868

The locality map included with this Background Information Document provides an overview of the erven included in this application. The Banna ba pifhu Wind Energy Project is proposed to be developed in one phase, which is covered in this EIA.

The key infrastructure components of the project will include the following:

- The installation of approximately 14 to 25 wind turbines of approximately 2 to 3.5 MW each with a hub height of between 80 to 105 meters and a blade diameter between 80 and 120 meters
- Construction of concrete foundations to support the wind turbines;
- Two wind monitoring masts of up to 100 m high;

- Internal access roads to the turbines, with the intent being to upgrade existing roads as far as possible;
- Underground internal electrical cabling between the wind turbines;
- An on-site substation for connection to the Eskom grid;
- Construction of hard standing areas for use by cranes during construction. Some of these areas will be retained for future maintenance use; and
- An Operation and Maintenance facility, including a storage building, security office and car park area.



Construction is undertaken in three distinct components:

- civil construction,
- electrical installation and wind turbine erection, and
- commissioning.

The construction and commissioning phase of the project will typically require a period of 8 to 12 months. The operational life span of the wind turbines is expected to be a minimum of 20 years which can be extended through regular maintenance and/or upgrades in technology. The project is implemented in such a manner which allows other activities (such as farming) to continue around the turbine. Typically in a wind farm, the turbines and supporting infrastructure (e.g. roads) occupy up to 5% of the total area of the wind farm.

ENVIRONMENTAL ASSESSMENT PROCESS

An application for Environmental Impact Assessment was submitted to the National Department of Environmental Affairs and DEA has allocated the following reference number to this application 12/12/20/2289.

In terms of the National Environmental Management Act (Act no 107 of 1998), as amended (NEMA), and the 2010 EIA regulations published in Government Notice R 543, 544, 545 and 546 on the 18 June 2010 in Government Gazette 33306 (as amended), Scoping and Environmental Impact Assessment Process is required as the project includes the following listed activities;

Additional listed activities are as follows:

GN R544: Activity 10. (i)

GN R546: Activity 4. (a) (ii) (ee); 13. (a); 14. (a) (i); 16. (iii) (iv) (ff).

Activities listed in GN R 544, which require a Basic Assessment
10. The construction of facilities or infrastructure for the transmission and distribution of electricity - (i) outside urban areas or industrial complexes with a capacity of more than 33 but less than 275 kilovolts; or
Activities listed in GN R 545, which require Scoping and EIR
1. The construction of facilities or infrastructure for the generation of electricity where the electricity output is 20 megawatts or more.
15. Physical alteration of undeveloped, vacant or derelict land for residential, retail, commercial, recreational, industrial or institutional use where the total area to be transformed is 20 hectares or more;
Activities listed in GN R 546, which require a Basic Assessment
4. The construction of a road wider than 4 metres with a reserve less than 13,5 metres. (a) In Eastern Cape... (ii) Outside urban areas, in: (ee) Critical biodiversity areas (Type 1) as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans;
13. The clearance of an area of 1 hectare or more of vegetation where 75% or more of the vegetative cover constitutes indigenous vegetation, except where such removal of vegetation is required for:

(a) Critical biodiversity areas and ecological support areas as identified in systematic biodiversity plans adopted by the competent authority.
14. The clearance of an area of 5 hectares of more of vegetation where 75% or more of the vegetative cover constitutes indigenous vegetation, except where such removal of vegetation is required for: (a) In Eastern Cape...: (i) All areas outside urban areas;
16. The construction of: (iii) buildings with a footprint exceeding 10 square metres in size; (iv) infrastructure covering 10 square metres or more
where such construction occurs within a watercourse or within 32 metres of a watercourse, measured from the edge of a watercourse, excluding where such construction will occur behind the development setback line.
(a) In Eastern Cape, ii. Outside urban areas, in: (ff) Critical biodiversity areas or ecosystem service areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans;

The listed activities require authorisation from the National Department of Environmental Affairs (DEA). The environmental assessment needs to show the responsible authority, DEA, and the project proponent, WKN Windcurrent SA (Pty) Ltd, what the consequences of their choices will be in biophysical, social and economic terms. The CSIR has been appointed by the Joint Venture to undertake the Environmental Assessment (EIA) required for the project and Public Process Consultants will manage the public participation component of the EIA. Public involvement forms an important component of this process, by assisting in the identification of issues and alternatives to be evaluated.

The Environmental Assessment Process being implemented can be summarised as follows:

Stage 1: Environmental Scoping (May 2011 until September 2011)

This Scoping process is being planned and conducted in a manner that is intended to provide sufficient information to enable the authorities to reach a decision regarding the scope of issues to be addressed in the EIA, and in particular to convey the range of specialist studies that will be included as part of the Environmental Impact Reporting Phase of the EIA, as well as the approach to these specialist studies. Within this context, the objectives of this Scoping process are to:

- Identify and inform a broad range of stakeholders about the proposed development;
- Clarify the scope and nature of the proposed activities and the alternatives being considered;
- Through a process of broad-based consultation with stakeholders, conduct an open, participatory and transparent participation process and facilitate the inclusion of stakeholders' concerns in the decision-making process; and
- Identify and document the key issues to be addressed in the forthcoming Environmental Impact Reporting Phase of the EIA.

Stage 2: Environmental Impact Assessment (late 2011)

The purpose of this stage of the EIA is to undertake specialist investigations to address the issues of concern identified through the Scoping Process. This includes the assessment of alternatives, identification of impacts and the determination of the significance of impacts. Specialists will, where appropriate, formulate mitigatory measures to maximise positive benefits or avoid/minimise potential negative impacts. The following specialist assessments have been identified, at this stage, to form part of the environmental assessment phase of the project:

- Ecological Assessment (flora and terrestrial fauna) – Jamie Pote (Private Consultant)
- Avifauna Assessment (Birds) – Chris van Rooyen, Chris van Rooyen Consulting
- Bats Assessment – Stephanie Dippenaar (Private consultant) (reviewer: Dr Samantha Stoffberg)
- Visual Impact Assessment – Henry Holland, Mapthis Trust
- Noise Impact Assessment – Brett Williams, Safetech
- Archaeology Assessment – Dr Johan Binneman, Albany Museum
- Palaeontology – Dr John Almond

PUBLIC PARTICIPATION PROCESS

Public Participation forms an integral component of the scoping and environmental impact assessment process. The following outlines the steps in the public participation process which will be undertaken to run in parallel to stage one and two of the EIA process.

Step 1: Notify Authorities of Environmental Impact Assessment Process

An application for Scoping and EIA was submitted to the National Department of Environmental Affairs and DEA EIA reference no 12/12/20/2289 allocated to this application.

Step 2: Notification to I&APs and Identification of Issues

Step two entails providing notification to I&APs of the project proposal as well as the identification of any issues/concerns they may have. I&APs are provided with a Background Information Document (BID) on the project, including a locality map and a comment form. One on one meetings will be conducted with relevant stakeholders, where required, during this phase of the process. I&APs will be provided with a minimum of a 30-day period within which to raise any issues of concern for inclusion in the Draft Scoping Report.

Step 3: I&AP Review of the Draft Scoping Report

All issues and concerns raised by I&APs are compiled into an Issues and Responses Trail for inclusion in the Draft Scoping Report which is released for a 40-day comment period. This report will also include the *Plan of Study for EIA*. All I&APs on the project database will be notified in writing of the opportunity to comment on the report, which will include an executives summary of the Draft Scoping Report and comment form. Copies of the report can be downloaded from the website www.publicprocess.co.za. In order to assist I&APs with their understanding of the project and to facilitate the identification of issues and concerns for inclusion in the Final Scoping Report, it is proposed that a public meeting, to which all I&APs are invited, is held during the review period.

Step 4: Final Scoping Report

The comments received from I&APs during the review process are considered in the compilation of the Final Scoping Report before it is submitted to the DEA for their decision making. All I&APs on the project database will be notified in writing of the submission of the Final Scoping Report, to the authorities (DEA) and will be informed of any additional comment period.

The Final Scoping Report will include the Plan of Study for EIA (PoS EIA) and Terms of Reference for specialist studies to be undertaken as part of the EIA process. The PoS EIA is subject to the approval of the authorities and may require amendment.

Step 5: Draft Environmental Impact Assessment and EMP

When the DEA accepts the Final Scoping Report and PoS EIA, the environmental assessment phase may commence. The purpose of the EIA is to:

- Address issues that have been raised through the Scoping Process;
- Assess reasonable and feasible alternatives that form part of the proposed activity (including the No Go Option);
- Assess potential impacts; and
- Recommend management actions to enhance benefits or avoid/minimise potential negative impacts.

This stage in the process entails the compilation and release of a Draft Environmental Impact Assessment for a 40-day I&AP review period. A key component of the EIA process is documenting and responding to the comments received from I&APs and authorities. The comments received through meetings held or via written correspondence are compiled into a Comments and Responses Trail for inclusion in the Final Environmental Impact Assessment. The Comments and Responses Trail will indicate the nature of the comment, when and who raised the comment as well as indicate how the comment received has been considered in the Final EIA, in the project design or EMP for the project.

Step 6: Final Environmental Impact Assessment and Draft EMP

The Final Environmental Impact Assessment, including the Comments and Responses Trail and draft EMP will be compiled for submission to the authorities for decision making (DEA). All I&APs on the pro-

ject database will be notified in writing of the submission of the Final EIA as well as any additional comment period if applicable.

Step 7: Notification of Environmental Decision and Appeal Period

All I&APs on the project database will be notified in writing regarding the environmental decision for the project and the appeal period, as well as the manner of appeal.

HOW CAN YOU GET INVOLVED?

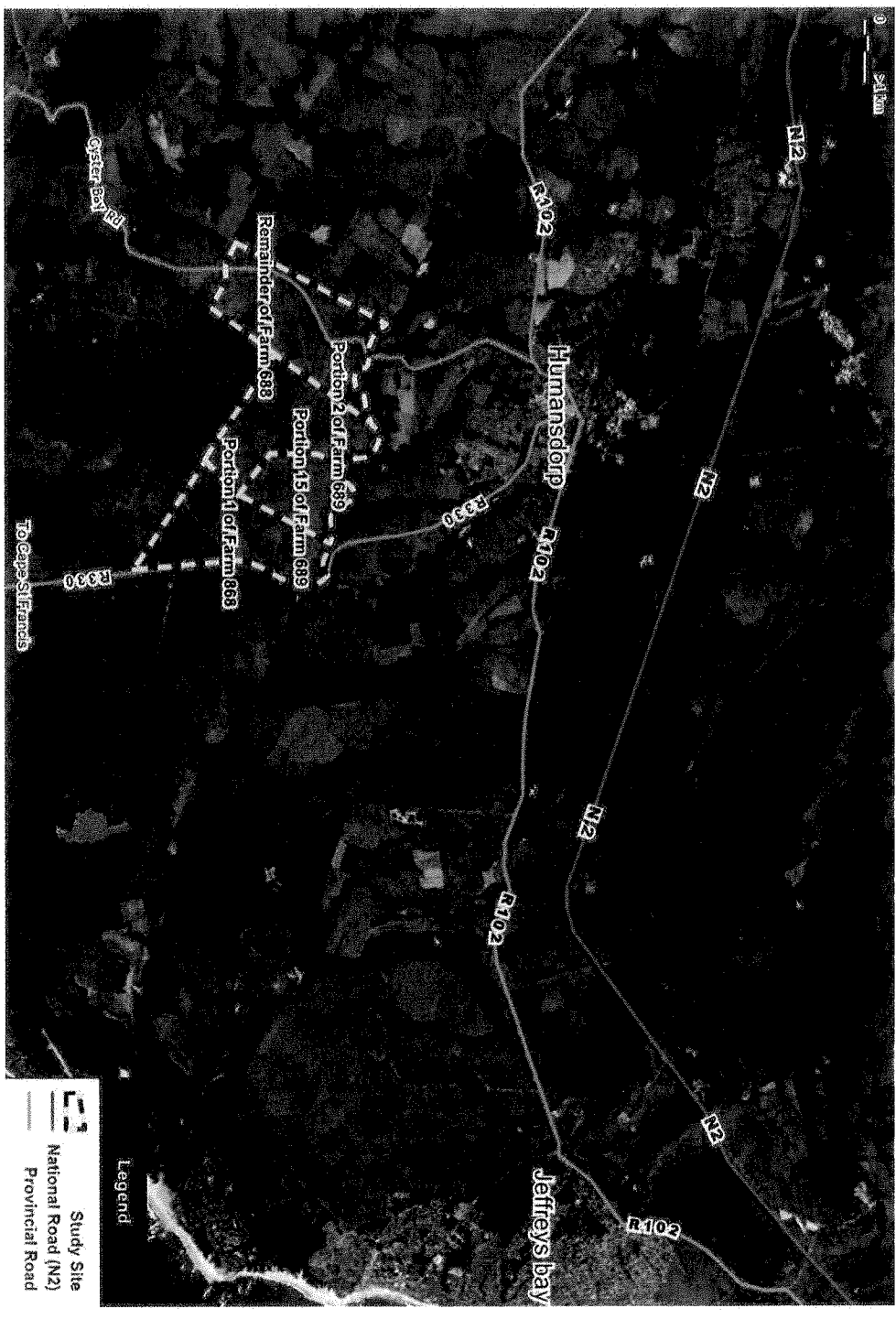
1. By responding to our invitation for your involvement advertised in local newspapers.
2. By mailing or faxing a comment form to the participation consultant indicated below.
3. By telephonically contacting the participation consultant if you have a query, comment, or require further project information.
4. By reviewing the various reports within the comment periods provided.
5. By attending any feedback meetings, which may be held during the review period. Should you be registered as an I&AP you will be invited to attend these meetings.

Sandy Wren, Public Process Consultants

PO Box 27688, Greenacres, 6057
Phone 041 - 374 8426
Fax 041 - 373 2002
Cell 082 4909 828
Email sandy@publicprocess.co.za

Information on this project can
be accessed through the website:
www.publicprocess.co.za





**Database of
Interested & Affected Parties**

Appendix F:

**Environmental Impact Assessment for the
proposed Banna Ba Pithu Wind Energy Project
near Humansdorp, Eastern Cape:
Final Scoping Report**

Environmental Impact Assessment for the proposed Banna Ba Pifhu Wind Energy Project near Humansdorp, Eastern Cape: Final Scoping Report

Database of I&APs

Title	First Name	Last Name	Organisation	Capacity	I&AP Sector	Town	Let 1: Notice of BAR	Req to Register	Comment Pre Scoping	Let 2: Draft Scoping	Public Mtg Draft SR	Focus Group Mtg Draft SR	Comment Draft SR	Let 3: Final SR	Let 4: Draft EIA	Pub Mtg Draft EIA	Focus Group Mtg DEIA	Comment Draft EIA	Let 5: Final EIA	Let 6: Authorisation	
Ms	Carolyn	Ah Shene-Verdoorn	Birdlife EC	Policy and Advocacy Manager	Environmental NGO	Randburg	x			x											
Mr	Chris	Barratt	St Francis Kromme Trust	Chairperson	Environmental NGO	St Francis Bay	x			x											
Ms	Marisa	Bloem	DWA: Port Elizabeth	Water Use Authorization Section	Water Authority	Port Elizabeth							x								
Ms	Yvonne	Bosman	St Francis Bird Club	Chairperson	NGO	St Francis Bay	x	x		x											
Mrs	Anneliza	Collett	Dept of Agriculture Forestry and Fisheries	Directorate: Land Use and Soil Management	National Dept of Agriculture	Pretoria															
Ms	Yvonne	Craig	St Francis Kromme Trust	Secretary	Environmental NGO	St Francis Bay	x	x	x	x											
Mr	Patrick	Cull	Times Media	Consulttant	Media	Walmer	x			x											
Dr	Daan	Delport	Daan Delport Familie Trust	Re/868; Re/869	Adjacent Landowner	Humansdorp	x			x											
Mr	Frans	Delport	Dieprivier	5, 6, 10, 11/689	Affected Landowner	Humansdorp	x			x											

Title	First Name	Last Name	Organisation	Capacity	I&AP Sector	Town	Let 1: Notice of BAR	Req to Register	Comment Pre Scoping	Let 2: Draft Scoping	Public Mtg Draft SR	Focus Group Mtg Draft SR	Comment Draft SR	Let 3: Final SR	Let 4: Draft EIA	Pub Mtg Draft EIA	Focus Group Mtg DEIA	Comment Draft EIA	Let 5: Final EIA	Let 6: Authorisation	
Mr	Joey	Du Preez	Aasvoel Boerdery C C	RE/803	Adjacent landowner	Durbanville	x			x											
Mr	Kenneth	Du Preez	Kouga Municipality	Engineering & Electrical	Local Authority	Humansdorp	x			x											
Mr/Ms	Gcinile	Dumse	Dept of Agriculture, Forestry Management : Land Use and Soil Management EL	Resource Auditor	Provincial Authority	East London	x			x											
Ms	Lorraine	Egan	Kouga Municipality	Conservation Division	Local Authority	Loerie	x			x											
Ms	Bridget	Elton	St Francis Kromme Trust	Member	NGO	St Francis Bay	x			x		x	x								
Ms	Lizna	Fourie	DWAF, East London	Permit officer	National Dept. for NWA, 1998	East London				x											
Dr	Mariagrazia	Galimberti	SA Heritage Resources Agency	CEO Archaeology, Palaeontology & Meteorite Unit	SAHRA	Cape Town	x	x	x	x											
Mr	John	Geeringh	DWEA	National Authority	National Authority	Pretoria	x			x											

Title	First Name	Last Name	Organisation	Capacity	I&AP Sector	Town	Let 1: Notice of BAR	Req to Register	Comment Pre Scoping	Let 2: Draft Scoping	Public Mtg Draft SR	Focus Group Mtg Draft SR	Comment Draft SR	Let 3: Final SR	Let 4: Draft EIA	Pub Mtg Draft EIA	Focus Group Mtg DEIA	Comment Draft EIA	Let 5: Final EIA	Let 6: Authorisation	
Mr	Dayalan	Govender	Department of Economic Development and Environmental Affairs (DEDEA)	Deputy Director	Environmental Authority	Greenacres	x			x											
Mr	Morgan	Griffiths	Wildlife & Environment Society of South Africa, EP Region	Environmental Officer	Environmental NGO	Centrahil	x			x											
Mr	Lex	Gutsche	Woodlands Farm/ Lex Gutsche Inv Trust	25/688	Adjacent landowner	Humansdorp	x			x											
Mr/Mrs	George & Sandra	Hardie	St Francis Conservancy		Environmental NGO	St Francis Bay	x			x											
Mr	Iqbal	Hoosen	SANRAL - Southern Region	Project Manager	National Roads	Port Elizabeth		x		x											
Mr	Marius	Keyser	District Roads Engineer	EC Dept. of Roads and Transport	Provincial Authority	Algoa Park	x	x	x	x											
Mr	Arnold	Koester	COSATU Local	Deputy Chairperson	Civil Society	Humansdorp						x	x								
Mr	Georghiou	Lambrou	Kwalanga Eco-Estate	2/793	Adjacent landowner	Jefferey's Bay	x			x											

Title	First Name	Last Name	Organisation	Capacity	I&AP Sector	Town	Let 1: Notice of BAR	Req to Register	Comment Pre Scoping	Let 2: Draft Scoping	Public Mtg Draft SR	Focus Group Mtg Draft SR	Comment Draft SR	Let 3: Final SR	Let 4: Draft EIA	Pub Mtg Draft EIA	Focus Group Mtg DEIA	Comment Draft EIA	Let 5: Final EIA	Let 6: Authorisation	
Ms	Maggie	Langlands	St Francis Kromme Trust	Renewable Energy Portfolio	Environmental NGO	St Francis Bay		x	x	x		x	x								
Ms	Minnelise	Levendal	EIA Manager	CSIR	Project Management	Stellenbosch	x			x											
Mr	Paul	Lochner	EIA Project Manager	CSIR	Project Manager	Stellenbosch	x			x											
Mr	Theo	Madatt	Kouga Municipality	Electricity Department	Local Authority	Jeffrey's Bay	x			x											
Mr	Nashied	Mallick	Technospect	RE/793	Adjacent landowner	Pinelands	x			x											
Mr	David	Masterson	David Masterson Family Trust & Saragossa Farms (Pty) Ltd	Affected Landowner 2/689; 5/689	Affected Landowner	Humansdorp	x			x											
Mr	Rival	Mnguni	Dept of Agriculture, Forestry and Fisheries	Land Use Advisor	National Dept of Agriculture	Pretoria		x													
Ms	Yvonne	Nhlapo	National Energy Regulator	PA	National Authority	Pretoria	x			x											
Mr	E	Oosthuizen	Kouga Municipality	Acting Director Technical Services	Kouga Municipality	Jeffrey's Bay								x							

Title	First Name	Last Name	Organisation	Capacity	I&AP Sector	Town	Let 1: Notice of BAR	Req to Register	Comment Pre Scoping	Let 2: Draft Scoping	Public Mtg Draft SR	Focus Group Mtg Draft SR	Comment Draft SR	Let 3: Final SR	Let 4: Draft EIA	Pub Mtg Draft EIA	Focus Group Mtg DEIA	Comment Draft EIA	Let 5: Final EIA	Let 6: Authorisation	
Mr	Russell	Phillips	FAPX - Secretary Airfield Association	Paradise Beach Airfield	Aviation	Walmer	x			x											
Mr	Godfried	Potgieter	St Francis Kromme Trust	Member	Environmental NGO	St Francis Bay					x	x									
Mr	Henri	Pretorius	Alpha Familie Trust	2/803	Adjacent landowner	Humansdorp	x			x											
Mr	Monde	Ralo	COSATU Local	Chairperson	Civil Society	Uitenhage					x	x									
Dr	Eddie	Rankwana	Kouga Municipality	Municipal Manager	Adjacent Landowner 4/346	Jeffrey's Bay	x			x											
Mr	Danie	Rautenbach	Kouga Development Agency	Planning & Development Manager	Local Authority	Jeffrey's Bay	x			x											
Mr	Peter	Rautenbach	Grasmere	1, 2, 3, 4/912	Adjacent Landowner	Humansdorp	x			x											
Mr	Kobus	Reichert	Gamtkwa First Nation		Heritage NGO	Jeffery's Bay	x			x											
Mr	Pieter	Retief	Dept of Water Affairs and Forestry, Port Elizabeth	Water Pollution Control Officer	Water Affairs and Forestry	Port Elizabeth				x											

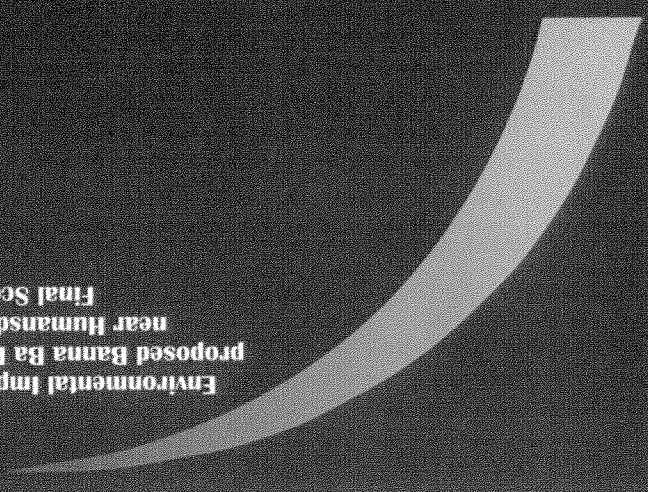
Title	First Name	Last Name	Organisation	Capacity	I&AP Sector	Town	Let 1: Notice of BAR	Req to Register	Comment Pre Scoping	Let 2: Draft Scoping	Public Mtg Draft SR	Focus Group Mtg Draft SR	Comment Draft SR	Let 3: Final SR	Let 4: Draft EIA	Pub Mtg Draft EIA	Focus Group Mtg DEIA	Comment Draft EIA	Let 5: Final EIA	Let 6: Authorisation	
Clr	Ben	Rheeber	Councillor Ward 12	Councillor, Ward 12	Local Authority Councillor	St Francis Bay	x			x											
Ms	Clarissa	Rudd	Jeffrey's Bay Library	Librarian	Library	Jeffrey's Bay		x													
Mr	Albert	Schultz	Birdlife EC	Vice Chairman	Environmental NGO	Port Elizabeth		x					x								
Ms	Lizelle	Stroh		Obstacle Specialist	Civil Aviation Authority	Halfway House	x			x											
Mr	Andries	Struwig	Dept of Economic Affairs Environment and Tourism	Deputy Director	Affected Organ of State	Greenacres	x			x											
Ms	Carina	Strydom	Kouga Municipality	LED Manager	Local Authority	Jeffrey's Bay	x			x											
Ms	Henda	Thiart	Jeffrey's Bay Rate Payers Association	Chairperson	Ratepayers Association	Jeffrey's Bay	x			x											
Mr	Hilton	Thorpe	St Francis Bay Residence Association		Civil Society	St Francis Bay	x			x											
Ms	M	Uitthaler	COCATU Local		Civil Society	Humansdorp						x									
Ms	Nicolene	Venter	Sivest	PP Manager	Thyspunt EIA	Rivonia	x			x											

Title	First Name	Last Name	Organisation	Capacity	I&AP Sector	Town	Let 1: Notice of BAR	Req to Register	Comment Pre Scoping	Let 2: Draft Scoping	Public Mtg Draft SR	Focus Group Mtg Draft SR	Comment Draft SR	Let 3: Final SR	Let 4: Draft EIA	Pub Mtg Draft EIA	Focus Group Mtg DEIA	Comment Draft EIA	Let 5: Final EIA	Let 6: Authorisation	
Chief	Michael	Williams	Gamkwa Khoisan First Nation	Chief	Heritage NGO	Hankey	x			x											
Mr	Alan	Wolfrohm	Windcurrent	Director	Applicant	Wilderness	x			x											
Mr	Vuyani	Zana	ANC Sub Region		Civil Society	Hankey						x	x								
Mr	Ross	Zietsman	Birdlife EC	Chairperson	Environmental NGO	Greenacres	x			x											
Ms/Mr	Siphesihle	Zwane	Department of Agriculture	Acting Deputy Director	Provincial Authority	Pretoria	x			x											
Mr	Fezeka	Zuma	National Department of Agriculture	Land Use and Soil Management	National Dept of Agriculture	Pretoria							x								

**Correspondence to
Interested & Affected Parties**

Appendix G:

**Environmental Impact Assessment for the
Proposed Banna Ba Pithu Wind Energy Project
near Humansdorp, Eastern Cape:
Final Scoping Report**



**CORRESPONDENCE SENT TO INTERESTED AND AFFECTED PARTIES PRIOR TO THE RELEASE OF THE
DRAFT SCOPING REPORT**

PO Box 27688 Greenacres 6057
120 Diaz Road Adcockvale, PE 6001
Phone 041 374 8426 Fax 041 373 2002
Email sandy@publicprocess.co.za
ck 97/32984/23 VAT 44601 68273



19 May 2011

Dear

**RE: Notice of Scoping and Environmental Impact Assessment Process, for the Proposed Banna ba pifhu Wind Energy Project, Farms Broadlands and Saragossa, Humansdorp, Kouga Local Municipality
DEA Reference Number: 12/12/20/2289**

In terms of the National Environmental Management Act (Act no 107 of 1998), as amended (NEMAA), and the 2010 EIA regulations published in Government Notice R 543, 544, 545 and 546 on the 18 June 2010 in Government Gazette 33306, notice is hereby given that a Scoping and Environmental Impact Assessment Process is required for the project described hereunder. In terms of the NEMA 2010 EIA regulations you have been identified as an interested and/ or affected party (I&AP) for the above project and have been included on the project I&AP database.

WKN Windcurrent SA (Pty) Ltd (WKN Windcurrent), a joint venture company between Windcurrent SA (Pty) Ltd. and WKN Windkraft Nord AG (WKN), (the applicant) is proposing the establishment of a wind energy project on the following farms: Remainder of Farm 688, Portion 2 and 15 of Farm 689 and Portion 1 of Farm 868, Humansdorp, Kouga Local Municipality, Eastern Cape Province. Windcurrent proposes to establish approximately 14 to 25 wind turbines, which may vary between 2 to 3.5 MW each with a combined generation capacity of up to 50 MW. The wind turbines will be either connected by a substation on-site to the local 66kV Eskom grid line passing over the site, or to the local Eskom substation via a new power line of approximately 10km in length.

In terms of the NEMA (Act no 107 of 1998), as amended, and the 2010 EIA regulations published in GN R 543, 544, 545 and 546 on the 18 June 2010 in Government Gazette 33306 (as amended), Scoping and Environmental Impact Assessment Process is required as the project includes, amongst others, the following listed activity in GN R 545,

1. The construction of facilities or infrastructure for the generation of electricity where the electricity output is 20 megawatts or more.

Additional listed activities are as follows:

GN R544: Activity 10. (i)

GN R545: Activity 15.

GN R546: Activity 4. (a) (ii) (ee); 13. (a); 14. (a) (i); 16. (iii) (iv); 16. (a) ii. (ff).

The listed activities require authorisation from the National Department of Environmental Affairs (DEA). The CSIR has been appointed by Windcurrent to undertake the Scoping and Environmental Impact Assessment (EIA) required for the project and Public Process Consultants will manage the public participation component of the EIA.

In terms of Chapter 6 of GN R 543 interested and affected parties are required to register their interest on the database for the project. In order to ensure that you are placed on the project register as well as to raise issues and or concerns for inclusion in the Draft Scoping Report, you are kindly requested to submit any comments you may have to the participation consultant at the address details indicated above, by no later than **20 June 2011**.

To assist you in the submission of your comments we have enclosed with this correspondence a Background Information Document (BID) on the project as well as a comment form. Copies of the BID and comment form can be downloaded from the following website www.publicprocess.co.za. Additional issues and concerns may be raised once the Draft Scoping Report is released for a 40 day I&AP review. As a registered I&AP on the project database you will be notified of this comment period in writing.

Should you have any queries or require additional information please contact Sandy Wren, Paul-Pierre Steyn or Wandile Junundu using the contact details provided above.

Yours sincerely


SANDY WREN

SCOPING PHASE

PUBLIC INVOLVEMENT PROCESS REPLY FORM

**SCOPING AND ENVIRONMENTAL IMPACT ASSESSMENT PROCESS
WKN Windcurrent SA (Pty) Ltd (the Applicant)**

WKN Windcurrent SA Pty Ltd are proposing a 50 MW wind energy facility on the Farms Broadlands and Saragossa, Humansdorp, Kouga Local Municipality, referred to as Banna ba phifu
DEA Reference Number: 12/12/20/2289

Primary Listed Activity: GN R545 Activity 1.

Return Completed Reply Form to:

Public Process Consultants, PO Box 27688, Greenacres 6057
Phone: 041 – 374 8426 or Fax 041-373 2002 or Email sandy@publicprocess.co.za

Complete all Relevant Sections Below and Return By: 20 June 2011

Please provide your full contact details:

FIRST NAME:	SURNAME:
ORGANISATION:	DESIGNATION:
POSTAL ADDRESS:	
CODE:	
PHONE:	FAX:
CELL:	EMAIL:

Email:

Would you like to register as an interested and affected party? (please tick the appropriate box)

NOTE: You are required to register as an I&AP in order to receive further correspondence regarding the EIA process.

YES
NO

Please clearly state any interest you may have in the project and/or list your issues and comments or questions you may have (use additional pages if required)

Registration and comments form for Issues

**CORRESPONDENCE SENT TO INTERESTED AND AFFECTED PARTIES FOLLOWING THE RELEASE OF
THE DRAFT SCOPING REPORT**

Letter 2 to I&APs: Notification of comment period on the Draft Scoping Report

PO Box 27688 Greenacres 6057
120 Diaz Road Adcockvale, PE 6001
Phone 041 374 8426 Fax 041 373 2002
Email sandy@publicprocess.co.za
Ck: 97/32984/23 VAT 44601 68273



6 July 2011

«Title» «First_Name» «Last_Name»
«Organisation»
«Address_1_»
«Address_2»
«Town»
«Code»

Dear «Title» «Last_Name»

**RE: Notice of Comment Period and Public Meeting, Draft Scoping Report, Proposed Banna Ba Pifhu Wind Energy Project, Farms Broadlands and Saragossa, Humansdorp, Kouga Local Municipality
DEA Reference Number: 12/12/20/2289**

As a registered interested and affected party on the database for the above project you are hereby notified of the release of the Draft Scoping Report for a 40 day comment period from the **7 July 2011 to the 17 August 2011** (DEA reference no: 12/12/20/2289). All comments on the Draft Scoping report are to be submitted to the Public Participation Consultant, contact details above, by no later than the **17 August 2011**.

Report Availability

Copies of the Draft Scoping Report are available for public viewing at the **Humansdorp and Jeffreys Bay Main Library** and can be downloaded from the website www.publicprocess.co.za

Public Meeting

All interested and affected parties, as well as any members of the public, are invited to attend a Public Meeting, details below, where a presentation on the Draft Scoping Report will be provided. Representatives from the CSIR, the Environmental Consultants for the Project, as well as, WKN-Windcurrent SA (Pty) Ltd, the Project Applicant, will be present to engage with members of the public.

DATE	TIME	VENUE
Tuesday, 12 July 2011	12 noon	Humansdorp Country Club, Main Hall (Park Street, Humansdorp, entrance opposite Kemp Street)

The purpose of the Public Meeting is to provide you with an overview of the findings of the Draft Scoping Report and obtain your comment and input for consideration in the finalisation of the Scoping Report, prior to submission to the National Department of Environmental Affairs for their decision making. Public input forms an important part of the Scoping Process and assists in determining the scope and terms of reference for specialist studies to be undertaken in the EIA Phase of the Assessment.

To assist you with the submission of your comments we have included with this correspondence an Executive Summary of the Draft Scoping Report as well as a comment form.

Should you have any comments or queries please do not hesitate to contact Sandy Wren, Paul Steyn or Wandile Junundu at the contact details above. We look forward to your participation in this stage of the process.

Yours sincerely


SANDY WREN

Comment form for the Review of the Draft Scoping Report

SCOPING PHASE

DRAFT SCOPING REPORT COMMENT FORM

SCOPING AND ENVIRONMENTAL IMPACT ASSESSMENT PROCESS

WKN Windcurrent SA (Pty) Ltd (the Applicant)

WKN-Windcurrent SA Pty Ltd are proposing a 50 MW wind energy facility on the Farms Broadlands and Saragossa, Humansdorp, Kouga Local Municipality, referred to as Banna Ba Pifhu

DEA Reference Number: 12/12/20/2289

Primary Listed Activity: GN R545 Activity 1.

Return Completed Reply Form to:

Public Process Consultants, PO Box 27688, Greenacres 6057

Phone: 041 – 374 8426 or Fax 041-373 2002 or Email sandy@publicprocess.co.za

Complete all Relevant Sections Below and Return By: 17 August 2011

Please provide your full contact details:

FIRST NAME:	SURNAME:
ORGANISATION:	DESIGNATION:
POSTAL ADDRESS:	
CODE:	
PHONE:	FAX:
CELL:	EMAIL:
Email:	

Please clearly state any interest you may have in the project and/or list your issues and comments or questions you may have (use additional pages if required)

Copy of the Executive Summary of the Draft Scoping Report

EXECUTIVE SUMMARY

Project Overview

WKN-Windcurrent SA (Pty) Ltd (referred to as "WKN-Windcurrent") is proposing the construction of a 50 MW wind energy facility on the Broadlands and Saragossa Farms in the Kouga Municipal Area, approximately 3.5 km south of the town of Humansdorp. The proposed project is referred to as the Banna Ba Pifhu Wind Energy Project. WKN-Windcurrent is a joint venture company between Windcurrent SA (Pty) Ltd and WKN Windkraft Nord AG (referred to as "WKN").

The Banna Ba Pifhu Wind Energy Project will be located on the following farms:

- Remainder of Farm 688;
- Portions 2 and 15 of Farm 689; and
- Portion 1 of Farm 868.

WKN Windkraft Nord AG (WKN) was founded in 1990 and is one of the pioneers of the German wind energy market. WKN has international experience in development, financing, erection and operation of wind farms, and has, as of 2010, a realised capacity of 1052.3 MW of wind power. Windcurrent SA (Pty) Ltd is a local company which has been developing renewable energy projects since 2009 in South Africa. The Joint Venture Company which was formed is a South African based renewable energy company that develops, builds and operates renewable energy projects.

The Banna Ba Pifhu Wind Energy Project will consist of approximately 16 to 25 wind turbines pending the capacity of the turbine to be used, i.e. approximately 2 to 3 MW each. A new substation will be built on site to connect to the transmission system. It is proposed to connect the wind farm substation to the existing 66 kV Melkhout / St. Francis overhead powerline. Should this option become unfeasible, a new 132 kV overhead powerline would connect the wind farm to the Melkhout substation.

A separate Basic Assessment (Department of Environmental Affairs Reference number: 12/12/20/1753) was undertaken from January to June 2010 for the establishment of a wind monitoring mast on Farm Broadlands prior to the development of the wind farm. This application was undertaken under the NEMA EIA Regulations published in GN R 385, 386 and 387 on 21 April 2006. Subsequently Amended NEMA EIA Regulations (Notices GN R. 543, 544, 545, and 546) were published in the Government Gazette No. 33306 of 18 June 2010, and came into effect from 2 August 2010 (referred to as the 2010 EIA Regulations). A wind monitoring mast is no longer a listed activity in terms of the 2010 EIA Regulations. WKN-Windcurrent intends to erect a maximum of two wind monitoring masts on Farm Broadlands.

Objective of the Project

At a national scale, renewable energy (in particular, wind energy) has the potential to play an important role in meeting South Africa's energy demand through diversifying the sources of power generation whilst reducing the country's carbon footprint from power generation. Currently, approximately 93% of South Africa's power generation is derived from coal. The proposed WKN-Windcurrent project of 50 MW could offset over 100 000 tonnes of CO₂ per year, or 2 000 000 tonnes of CO₂ over the lifetime (20 years) of the project. Wind farms have a relatively short construction lead time and could therefore be quickly developed to meet South Africa's power need. Coal fired power stations used approximately 292 million cubic metres of water, or 1.5% of national water consumption, for electricity generation during 2005. The

future availability and treatment costs of water therefore present a serious challenge for the economic sustainability of South Africa's current (coal-based) electricity supply.

The Eastern Cape Province is reliant on electricity imports from other provinces yet houses significant industrial and rural development potential. Power from the national grid is largely generated from coal power stations, and transmitted considerable distances to the Eastern Cape (e.g. from Mpumalanga). This leads to significant transmission losses and local grid instabilities. Electricity supply to the Eastern Cape Province is further constrained by transmission infrastructure. Eskom currently supplies approximately 1 400 MW of electricity to the Eastern Cape Province.

The intention of this project is to generate electricity that will be fed into the national or the provincial grid by erecting a wind farm totalling 50 MW. At a national level, renewable energy has the potential to play an important role in South Africa through diversifying the sources of power generation and reducing the carbon footprint from fossil fuel power generation, such as coal fired power stations. The renewable energy feed-in tariffs (REFIT) released by the government in April 2009 provided an important catalyst to promote the use of wind energy in South Africa. It is to be noted that the 2009 REFIT tariffs are being revised by NERSA, and the process has not yet been concluded.

The Integrated Resource Plan for Electricity (IRP) for South Africa is a subset of the Integrated Energy Plan (IEP) for the Republic of South Africa which was published on 19 March 2003. Its Draft Executive Summary and Medium Term Risk Mitigation Plan were published by the Department of Energy on 8 October 2010. The objective for the IRP is to develop a sustainable electricity investment strategy for generation and transmission of electricity in South Africa for the next 25 years.

After public participation during November/December 2010, the IRP was revised and released as the Policy-Adjusted IRP on 28 March 2011 by the Department of Energy. As a contribution towards building local industry clusters and fulfilling South Africa's commitments to mitigating climate change as expressed at the Copenhagen climate change summit, it increased the proportion of renewable energy in the proposed new build fleet for 2010 to 2030 by 6.4 GW, that is, from 7.5 % of the energy share to 9 %. In other words, the Plan now includes a nuclear fleet of 9.6 GW; 6.3 GW of coal; 17.8 GW of renewables; and 8.9 GW from other generation sources. To achieve a lower carbon emission peak, it recommends early adoption of renewable technologies, with solar PV capacity of 8 400 MW from 2012 to 2030, solar CSP of 1 200 MW from 2014 to 2030, and wind capacity of 9 100 MW from 2012 to 2030. The proposed Banna Ba Pifhu wind energy project will contribute 50 MW to the recommended total wind capacity of 9 100 MW by 2030.

Project Description

The key components of the project are:

Wind monitoring mast

To guide project design and further investment decisions and to gather the necessary site specific wind data, WKN-Windcurrent will erect a maximum of two wind monitoring masts (Figure 2.2) to collect wind data for a period of approximately 12 - 24 months. The proposed masts will be approximately 100 m high with securing stays on three sides. The mast will have anemometers at different heights on the mast. When the 12-24 month monitoring period is complete the mast can be dismantled and re-used elsewhere.

Wind turbines

1. 16 to 25 turbines (the actual number will be dependent on the capacity of the turbines selected in the range between 2 and 3 MW), with an expected hub height from 80 m to 105 m and a blade diameter from 90 m to 112 m.
2. Turbines will be supported on foundations dimensioned to the geotechnical properties, for example reinforced concrete spread foundations of approximately 20 m by 20 m and 3 m in depth.
3. Electrical transformers will be placed beside each turbine or in the nacelle of each turbine.
4. Hard standing areas will be established adjacent to each turbine for use by cranes during construction and retained for maintenance use throughout the life span of the project.
5. Gravel roads, approximately 5 m wide, will be necessary to provide access to each turbine site, with the intent being to upgrade existing roads as far as possible.

Electrical connections

1. The wind turbines will be typically connected to each other and to the substation using medium voltage cables which will, in most cases, be buried approximately 1 m below ground, except where a technical assessment of the proposed design suggests that above ground lines are appropriate.
2. A new substation will be built on site to connect to the distribution or transmission system. It is proposed to connect the wind farm substation to the existing 66 kV Melkhout / St. Francis overhead powerline, which passes through the site. Should this option become unfeasible, a new 132 kV overhead powerline would connect the wind farm to the Melkhout substation, which is located approximately 7 km north of the site.
3. The connection from the new substation to the Eskom grid line would be via underground cabling or a stretch of over head line supported on an intermediate pole(s), depending on the location of the substation relative to the 66 kV line.

Other infrastructure

1. Operations and maintenance building: A single storey building, maximum 5000 m², with warehouse / workshop space and access, office and telecoms space and security and ablution facilities as required. This preferably should be situated close to the substation.
2. Fencing as required.

Temporary activities during construction

1. A lay down area (alongside an access route) of maximum area 10 000 m² is necessary for the assembly of the turbine components— this hard standing area could be temporary or if the landowner prefers, left for long-term use.
2. The overall site compound for contractors would be approximately 5000 m².
3. Existing borrow pits will be used as far as possible for road upgrades. The size of these pits will be dependent on the terrain and need for granular fill material for use in construction.
4. At the end of construction these borrow pits will be backfilled as much as possible using surplus excavated material from the foundations.

Construction consists of three distinct components: civil construction; electrical installation and wind turbine erection; and commissioning. These phases are expected to require a total period of 8 to 15 months. The operational life span of the wind turbines is expected to be 20 years. Turbine life can be extended beyond 20 years through regular maintenance and/or upgrades in technology. The final choice of the type of turbines will be based on ease of erection, availability and suitability to the wind regime, amongst other criteria.

Wind turbines can be operated in parallel with farming activities. Internationally it is common practice for farming to continue whilst wind turbines are in operation leading to greater efficiency of land use and no loss of economic activity, but an added passive income for the landowner. Internationally, wind turbines and related components take up between 2% and 5% of the surface area of the wind farm, allowing other activities such as farming to continue on the land. The farm covers approximately 1138 hectares (ha). After construction, the turbine mast footprints will cover approximately 0.09 % of the total area. Current cattle farming activities would continue beneath and around the turbines.

In addition to the application for a proposed wind farm, WKN-Windcurrent also submitted an application to DEA for the erection of a 4.5 MW photovoltaic (PV) solar power project on portion 15 of farm 689 and portion 1 of farm 868 (DEA reference number: 12/12/20/2236). These properties are included in this application for the proposed Banna Ba Pifhu wind energy facility. The PV project comprises a Basic Assessment. A Draft Basic Assessment Report has been released for public comment from 15 June 2011 until 26 July 2011 (CSIR Ref No: Stel General: 9291). WKN-Windcurrent wishes to diversify the use of renewable energy resources by erecting a solar and a wind energy facility on the same farms.

Need for an EIA

Amended NEMA EIA Regulations (Notices GN R. 543, 544, 545, and 546) were published in the Government Gazette No. 33306 of 18 June 2010, and came into effect from 2 August 2010 (referred to as the **2010 EIA Regulations**). This EIA application by WKN-Windcurrent is undertaken under the 2010 EIA Regulations. In terms of these regulations, Scoping and Environmental Impact Assessment are required as the project includes, amongst others, the activity listed in GN 545:

1) *The construction of facilities or infrastructure for the generation of electricity where the electricity output is 20 megawatts or more.*

Chapters 1 and 4 of this Draft Scoping Report contain a list of activities contained in GN R 544, 545 and 546 that are triggered by the various project components and form part of this Scoping and Environmental Impact Assessment process.

Review of the Draft Scoping Report

This EIA process is currently at the stage where the Draft Scoping Report is being released for a 40-day public review period from 7 July 2011 until 17 August 2011. Comments need to be submitted to the public participation consultant, Ms Sandy Wren from Public Process Consultants. The Draft Scoping Report will be placed in the Jeffreys Bay and Humansdorp Municipal Libraries and on the project website at www.publicprocess.co.za.

Identification of Issues

The Draft Scoping Report includes the issues identified thus far in the scoping process. The project and EIA process were advertised in one regional newspaper, The Herald, and one local newspaper, Our Times (both were advertised on 19 May 2011). In addition to the newspaper advertisements, letters with personal notification regarding the EIA process were mailed to all pre-identified key stakeholders on the database, which at the time consisted of 44 I&APs (Letter 1). I&APs were provided a 30-day period within which to raise issues and/or register their interest on the project database, this period extended from the 19 May 2011 to the 20 June 2011.

A synthesis of these issues is provided in the Issues & Response Trail (Chapter 5 of the Draft Scoping Report), which includes an explanation of how the issues will be addressed through the EIA process.

In summary, the following issues have been identified (number in brackets indicates the number of issues raised):

1. Issues related to potential bird Impacts (1)
2. Issues related to potential traffic Impacts (1)
3. Issues related to potential heritage Impacts (2)
4. Project detail (1)

The *draft Plan of Study for EIA* (Chapter 6 of the Draft Scoping Report) presents the approach to the forthcoming EIA phase. This includes the Terms of Reference for the various specialist studies that are proposed to address the issues raised, where necessary. The section below summarises the main issues to be addressed in the specialist studies. These studies will consider the construction, operation and decommissioning phases of the project.

- *Flora and Fauna (excluding avifauna)*
 - Impact of the turbines and associated activities on the vegetation and animals, with special attention to the potential occurrence of critical biodiversity areas, wetlands and red data species.
- *Birds*
 - Assessment of the potential direct, secondary and cumulative impacts on avifauna, both positive and negative, associated with the proposed project.
 - In addition to the specialist study, a pre-construction bird monitoring programme is being undertaken. The results and recommendations of this monitoring programme will be included in the specialist study.
- *Bats*
 - Identify and assess the potential impacts of the wind project on bats and bat mortality.
 - In addition to the specialist study, a pre-construction bat monitoring programme will be undertaken. The results and recommendations of this monitoring programme will be included in the specialist study.
- *Visual*
 - Identify and assess the potential visual impacts of the wind project on landscape character and sense of place, including a viewshed analysis and taking into consideration factors such as visual sensitivity and visual absorption capacity.
- *Noise*
 - Identify and assess the potential noise impacts associated with the proposed project on residences (i.e. noise receptors).
- *Socio-economic*
 - Identify and assess the potential socio-economic impacts associated with the proposed project (e.g. job creation, skills development and training, community investment programmes, promotion of secondary industries etc) at local and wider scales as relevant.

- *Heritage (archaeology, palaeontology, historical and cultural aspects)*
 - Identify and assess potential impact on archaeology (e.g. stone age artefacts)
 - Identify and assess potential impacts on the built environment or places of historical and cultural significance (e.g. national monuments and grave sites).
 - Identify and assess potential impact of excavations on palaeontology (e.g. fossils).

Environmental Impact Assessment for the
Proposed Banna Ba Pithu Wind Energy Project
near Humansdorp, Eastern Cape:
Final Scoping Report

Appendix H:

Correspondence from
Interested & Affected Parties

**CORRESPONDENCE FROM INTERESTED AND AFFECTED PARTIES PRIOR TO THE RELEASE OF THE
DRAFT SCOPING REPORT**

From: Elton [eltonem@telkomsa.net]
Sent: 23 May 2011 03:07 PM
To: Sandy Wren
Cc: maggie Langlands
Subject: Re: Ref 12/12/20/2289

Thanks Sandy.

Please be so kind as to also add Maggie Langlands to your list under the St Francis Kromme Trust
langlands@wirelessza.co.za

Thanks Bridget

----- Original Message -----

From: [Sandy Wren](#)
To: 'Elton'
Sent: Monday, May 23, 2011 2:21 PM
Subject: RE: Ref 12/12/20/2289

Hi Bridget

I have Chris, Yvonne and yourself on the database registered under the Trust. Attached is a copy of all the documentation that has been mailed to all three of you, separately.

Regarding the ref no, and I stand under correction, the second last set of digits indicates the province of the application and the last number is the number of applications the Department is busy processing, and I assume nationally. As an application comes in, it is allocated a number. It is not specific to the type of project, e.g. wind or a new harbour. I can found out more if you would like me to.

As discussed with you we have started with the Scoping Process and should release the Draft Scoping Report at the beginning of July sometime. I would then like to set up a separate meeting with the trust where I can come and discuss the project with the trust. But feel free to send through any concerns in the meantime for us to include in the Draft Scoping Report.

And just reminder all the project documents can be downloaded from our website.

Regards

Sandy Wren
Public Process Consultants
PO Box 27688, Greenacres, 6057
120 Diaz Road, Adcockvale, PE, 6001
Phone: 041 374 8426
Fax: 041 373 2002

Cell: 082 4909 828
www.publicprocess.co.za

From: Elton [<mailto:eltonem@telkomsa.net>]
Sent: 23 May 2011 01:58 PM
To: Sandy Wren
Subject: Ref 12/12/20/2289

Hi Sandy

Thanks for the letter re Banna ba pifhu. Could you please e-mail me a copy of the same letter so that I can forward it on to Chris Barratt.

Chris asked me to check that you have registered the St Francis Kromme Trust as an I & A Party, I said you usually do but he asked me just to please confirm.

Just as a matter of interest the Ref No does it stand for anything eg. no of applications submitted to the Dept ?

Thanks
Bridget

From: Maggie Langlands [langlands@wirelessza.co.za]
Sent: 23 June 2011 03:22 PM
To: Sandy Wren
Subject: Re: contact details

Hi Sandy,
Thank you for contacting me. My postal address is P.O. Box 293, St Francis Bay 6312 and my phone no's are 042-294-1075 and 082-458-8063.
Bridget has very kindly been forwarding everything from Public Process Consultants but it would certainly save her some time if you added me to the database for any project in the Kouga region. Can you confirm for me that Banna ba pifhu and the Broadlands solar project are proposed for the same pieces of property? Is the intention to mix the two types of technology?

Kind regards,
Maggie Langlands
Renewable Energy Portfolio
St Francis Kromme Trust
----- Original Message -----

From: Sandy Wren
To: langlands@wirelessza.co.za
Cc: 'Elton'
Sent: Thursday, June 23, 2011 2:34 PM
Subject: contact details

Hi Maggie

Bridget Elton has asked me to add you to the database for the Bhana ba Phifu Wind Energy project south of Humansdorp. Would you kindly forward me a postal address and contact number so that I can add you to the database as requested.

Many Thanks

Sandy Wren
Public Process Consultants
PO Box 27688, Greenacres, 6057
120 Diaz Road, Adcockvale, PE, 6001
Phone: 041 374 8426
Fax: 041 373 2002
Cell: 082 4909 828
www.publicprocess.co.za

SCOPING AND ENVIRONMENTAL IMPACT ASSESSMENT PROCESS

WKN Windcurrent SA (Pty) Ltd (the Applicant)

WKN Windcurrent SA Pty Ltd are proposing a 50 MW wind energy facility on the Farms Broadlands and Saragossa, Humansdorp, Kouga Local Municipality, referred to as Banna ba phifu

DEA Reference Number: 12/12/20/2289

Primary Listed Activity: GN R545 Activity 1.

Return Completed Reply Form to:

Public Process Consultants, PO Box 27688, Greenacres 6057

Phone: 041 – 374 8426 or Fax 041-373 2002 or Email sandy@publicprocess.co.za

Complete all Relevant Sections Below and Return By: 20 June 2011

Please provide your full contact details:

FIRST NAME: YVONNE	SURNAME: BOSMAN
ORGANISATION: ST FRANCIS BIRD CLUB	DESIGNATION: CHAIRMAN
POSTAL ADDRESS: P.O. BOX 174, ST FRANCIS BAY.	
CODE: 6312	
PHONE: 042 294 0842	FAX: NA
CELL: 083 235 8278	EMAIL: ycraig@iafrica.com

Email:

Would you like to register as an interested and affected party? (please tick the appropriate box)

NOTE: You are required to register as an I&AP in order to receive further correspondence regarding the EIA process.

YES
NO

Please clearly state any interest you may have in the project and/or list your issues and comments or questions you may have (use additional pages if required)

I am interested in the effect the development will have on endangered bird species. Large birds such as Blue Crane, Denham's Bustard and White-bellied Korhaan are at risk.

From: Sandy Wren [sandy@publicprocess.co.za]
Sent: 06 June 2011 09:04 AM
To: 'pdhcull@iafrica.com'
Subject: RE: EIA - windfarm Kouga
Attachments: Banna ba Pifhu - BID - final 16May2011.pdf; Bhana Ba Phifu - Letter 1 to IAPs
- final for merging - 16May2011 - pg1.pdf; Bhana Bha Phifu - Comment form
pre scoping - final -10 May2011.doc

Hi Patrick

I will register you as usual, attached is the relevant project documentation for the Bhana ba Phifu Wind Energy Project.

Regards

Sandy Wren
Public Process Consultants
PO Box 27688, Greenacres, 6057
120 Diaz Road, Adcockvale, PE, 6001
Phone: 041 374 8426
Fax: 041 373 2002
Cell: 082 4909 828
www.publicprocess.co.za

-----Original Message-----

From: Patrick Cull [mailto:pdhcull@iafrica.com]
Sent: 04 June 2011 03:35 PM
To: sandy@publicprocess.co.za
Subject: EIA - windfarm Kouga

Hullo Sandy

Trust you are well - will there be any wind left once all these guys have finished!

Would you register me as usual?

Many thanks

Best wishes
Patrick Cull
PO Box 5607
Walmer
6065
pdhcull@iafrica.com
082 8932870

SCOPING PHASE

PUBLIC INVOLVEMENT PROCESS REPLY FORM

SCOPING AND ENVIRONMENTAL IMPACT ASSESSMENT PROCESS

WKN Windcurrent SA (Pty) Ltd (the Applicant)

WKN Windcurrent SA Pty Ltd are proposing a 50 MW wind energy facility on the Farms Broadlands and Saragossa, Humansdorp, Kouga Local Municipality, referred to as Banna ba phifu
DEA Reference Number: 12/12/20/2289

Primary Listed Activity: GN R545 Activity 1.

Return Completed Reply Form to:

Public Process Consultants, PO Box 27688, Greenacres 6057
Phone: 041 – 374 8426 or Fax 041-373 2002 or Email sandy@publicprocess.co.za

Complete all Relevant Sections Below and Return By: 20 June 2011

Please provide your full contact details:

FIRST NAME: <u>Marius</u>	SURNAME: <u>Keyser</u>
ORGANISATION: <u>Dept Roads & Public Works</u>	DESIGNATION: <u>District Roads Engineer</u>
POSTAL ADDRESS: <u>PO Box 11100 Algoa Park</u>	
CODE: <u>6025</u>	
PHONE: <u>041 4036041</u>	FAX: <u>041 4561666</u>
CELL: <u>083 6661598</u>	EMAIL: <u>marius.keyser@dfw.ecap.gov.za</u>

Email:

Would you like to register as an interested and affected party? (please tick the appropriate box)

NOTE: You are required to register as an I&AP in order to receive further correspondence regarding the EIA process.

<input checked="" type="checkbox"/> YES
<input type="checkbox"/> NO

Please clearly state any interest you may have in the project and/or list your issues and comments or questions you may have (use additional pages if required)

Provincial Roads are affected.



Registration and comments form for Issues



SOUTH AFRICAN HERITAGE RESOURCES AGENCY
111 HARRINGTON STREET, CAPE TOWN, 8000
PO BOX 4637, CAPE TOWN, 8000
TEL: (021) 462 4502 FAX: (021) 462 4509

DATE: 20 June 2011
ENQUIRIES: Dr Mariagrazia Galimberti
Archaeology, Palaeontology and Meteorite Unit
E-mail: mgalimberti@sahra.org.za
Web site: www.sahra.org.za

OUR REF: 9/2/044/0001
DEA REF NO. 12/12/20/2289

Ms Sandy Wren
Public Process Consultants
PO Box 27688
Greenacres
6057

Dear Ms Wren,

**RE: BID - PROPOSED BANNA BA PIFHU WIND ENERGY PROJECT, FARMS
BROADLANDS AND SARAGOSSA, HUMANSDORP, KOUGA LOCAL
MUNICIPALITY**

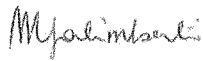
Thank you for your indication that development is to take place in this area.

In terms of the National Heritage Resources Act, no 25 of 1999, heritage resources, including archaeological or palaeontological sites over 100 years old, graves older than 60 years, structures older than 60 years are protected. They may not be disturbed without a permit from the relevant heritage resources authority. This means that before such sites are disturbed by development it is incumbent on the developer to ensure that a **Heritage Impact Assessment** is done. This must include the archaeological component (Phase 1) and any other applicable heritage components.

We hereby acknowledge that an Archaeological and a Palaeontological Impact Assessment will be included in the Environmental Impact Report.

Please note that besides archaeology and palaeontology other heritage resources to be assessed are built structures over 60 years old, sites of cultural significance associated with oral histories, burial grounds and graves, graves of victims of conflict, and cultural landscapes or views.

Yours sincerely



PP Mrs Nonofho Ndobochani
SAHRA: Archaeology, Palaeontology and Meteorite Unit
For: CHIEF EXECUTIVE OFFICER

Copy: PHRA Eastern Cape Office

CORRESPONDENCE FROM INTERESTED AND AFFECTED PARTIES FOLLOWING THE RELEASE OF THE DRAFT SCOPING REPORT

17-AUG-2011 08:51 ALBERT SCHULTZ 0415860132 P. 01

SCOPING PHASE
DRAFT SCOPING REPORT COMMENT FORM
SCOPING AND ENVIRONMENTAL IMPACT ASSESSMENT PROCESS
WKN Windcurrent SA (Pty) Ltd (the Applicant)

WKN-Windcurrent SA Pty Ltd are proposing a 50 MW wind energy facility on the Farms Broadlands and Saragossa, Humansdorp, Kouga Local Municipality, referred to as Banna Ba Pifhu
DEA Reference Number: 12/12/20/2289
Primary Listed Activity: 6N R545 Activity 1.

Return Completed Reply Form to:
Public Process Consultants, PO Box 27688, Greenacres 6057
Phone: 041 - 374 8426 or Fax 041-373 2002 or Email sandy@publicprocess.co.za

Complete all Relevant Sections Below and Return By: 17 August 2011

Please provide your full contact details:

FIRST NAME: ALBERT SURNAME: SCHULTZ
ORGANISATION: BIRDLIFE EASTERN CAPE DESIGNATION: VICE CHAIRMAN
POSTAL ADDRESS: PO. Box 540, PORT ELIZABETH
CODE: 6000
PHONE: 041-585 1245 FAX: 041-586 0152
CELL: 083 459 1541 EMAIL:
Email: ALBERT@AGNET.CO.ZA

Please clearly state any interest you may have in the project and/or list your issues and comments or questions you may have (use additional pages if required)

AVIAN COMPONENT EFFECTING WIND FARMS

03-07-2011 01:33

PAGE1

SCOPING PHASE

DRAFT SCOPING REPORT COMMENT FORM

SCOPING AND ENVIRONMENTAL IMPACT ASSESSMENT PROCESS

WKN Windcurrent SA (Pty) Ltd (the Applicant)

WKN-Windcurrent SA Pty Ltd are proposing a 50 MW wind energy facility on the Farms
Broadlands and Saragossa, Humansdorp, Kouga Local Municipality, referred to as Banna Ba Pifhu

DEA Reference Number: 12/12/20/2288

Primary Listed Activity: GN R545 Activity 1.

Return Completed Reply Form to:

Public Process Consultants, PO Box 27688, Greenacres 6057

Phone: 041 - 374 8426 or Fax 041-373 2002 or Email sandy@publicprocess.co.za

Complete all Relevant Sections Below and Return By: 17 August 2011

Please provide your full contact details:

FIRST NAME: CLARISSA	SURNAME: RUD
ORGANISATION: JEFFREYS BAY LIBRARY	DESIGNATION: LIBRARIAN
POSTAL ADDRESS: P.O. BOX 21, JEFFREYS BAY	
CODE: 6330	
PHONE: 042 2002174	FAX: 042 2931114
CELL:	EMAIL:
Email:	

Please clearly state any interest you may have in the project and/or list your issues and
comments or questions you may have (use additional pages if required)

Registration and comments form for issues

From:

To: 0413732002

12/07/2011 14:11

#167 P.001/084

SCOPING PHASE

DRAFT SCOPING REPORT COMMENT FORM

**SCOPING AND ENVIRONMENTAL IMPACT ASSESSMENT PROCESS
WKN Windcurrent SA (Pty) Ltd (the Applicant)**

WKN-Windcurrent SA Pty Ltd are proposing a 50 MW wind energy facility on the Farms Broadlands and Saragossa, Humansdorp, Kouga Local Municipality, referred to as Banna Ba Pifhu

DEA Reference Number: 12/12/20/2289

Primary Listed Activity: GN R545 Activity 1.

Return Completed Reply Form to:

Public Process Consultants, PO Box 27688, Greenacres 6057

Phone: 041 – 374 8426 or Fax 041-373 2002 or Email sandy@publicprocess.co.za

Complete all Relevant Sections Below and Return By: 17 August 2011

Please provide your full contact details:

FIRST NAME: REVIVAL	SURNAME: MNGUNI
ORGANISATION: DAFF	DESIGNATION: LAND USE ADVISOR
POSTAL ADDRESS: P/BAG X 120, PRETORIA	
CODE: 0002	
PHONE: 012 319 7439	FAX: 041 373 2002
CELL: 072 141 2273	EMAIL: REVIVALM@daff.gov.za

Email:

Please clearly state any interest you may have in the project and/or list your issues and comments or questions you may have (use additional pages if required)

From: FezekaZ [FezekaZ@nda.agric.za]
Sent: 13 July 2011 09:11 AM
To: sandy@publicprocess.co.za
Subject: broadlands and saragossa
Attachments: BROADLANDS.doc

Follow Up Flag: Follow up
Flag Status: Flagged

Dear Sir/Madam

Kindly find attached the notice of receipt for your attention.

Please use the reference given for any enquiries.

Kindest Regards

Ms Fezeka Zuma
Department of Agriculture, Forestry & Fisheries
Directorate; Land Use and Soil Management
Pretoria (South Africa)
Tel: (012) 319 7609
Fax: (012) 329 5938
e-mail: fezekaz@daff.gov.za



agriculture,
forestry & fisheries

Department:
Agriculture, forestry & fisheries
REPUBLIC OF SOUTH AFRICA

Directorate Land Use and Soil Management, Private Bag x120, Pretoria, 0001
Delpen Building, c/o Annie Botha & Union Streets, Riviera

From: Director: Land Use and Soil Management

Tel: (012) 319 7678 □ Fax: (012) 329 5938 □ e-mail: agriland@nda.agric.za

PUBLIC PROCESS CONSULTANTS
P O BOX 320
STELLENBOSCH
7599

2011/07/13

Dear Sir/Madam

This serves as a notice of receipt and confirms that your application has been captured in our electronic AgriLand tracking and management system. It is strongly recommended that you use the on-line AgriLand application facility in future.

Detail of your application as captured:

Type: EIA
Your reference number: 12/12/20/2289
Dated: 1 JULY 2011

Please use the following reference number in all enquiries:

AgriLand reference number: 2011_07_0154

Enquiries can be made to the above postal, fax or e-mail address.

Yours sincerely,

F.ZUMA
pp DIRECTOR: LAND USE AND SOIL MANAGEMENT

Online application available at: <http://www.agis.agric.za/agriland>

From: Maggie Langlands [<mailto:langlands@wirelessza.co.za>]
Sent: 23 June 2011 03:22 PM
To: Sandy Wren
Subject: Re: contact details

Hi Sandy,
Thank you for contacting me. My postal address is P.O. Box 293, St Francis Bay 6312 and my phone no's are 042-294-1075 and 082-458-8063.
Bridget has very kindly been forwarding everything from Public Process Consultants but it would certainly save her some time if you added me to the database for any project in the Kouga region. Can you confirm for me that Banna ba pifhu and the Broadlands solar project are proposed for the same pieces of property? Is the intention to mix the two types of technology?
Kind regards,
Maggie Langlands
Renewable Energy Portfolio
St Francis Kromme Trust
----- Original Message -----

From: Sandy Wren
To: langlands@wirelessza.co.za
Cc: 'Elton'
Sent: Thursday, June 23, 2011 2:34 PM
Subject: contact details

Hi Maggie

Bridget Elton has asked me to add you to the database for the Bhana ba Phifu Wind Energy project south of Humansdorp. Would you kindly forward me a postal address and contact number so that I can add you to the database as requested.

Many Thanks

Sandy Wren
Public Process Consultants
PO Box 27688, Greenacres, 6057
120 Diaz Road, Adcockvale, PE, 6001
Phone: 041 374 8426
Fax: 041 373 2002
Cell: 082 4909 828
www.publicprocess.co.za

From: Maggie Langlands [langlands@wirelessza.co.za]
Sent: 22 July 2011 03:27 PM
To: Sandy Wren
Subject: New submission
Attachments: Submission on monitoring data and decommissioning.doc

Hi Sandy,
Attached is a submission from the St Francis Kromme Trust for each of the following projects:

Banna ba Pifhu
Broadlands
Ubuntu

I can send separate submissions if you request it?

Kind regards,
Maggie Langlands

St Francis Kromme Trust

19 July 2011

The St Francis Kromme Trust raises two pressing concerns:

1. Bird and Bat Impacts

Bird and bat impacts are imperfectly known in South African conditions and specialist EIA studies are insufficient for assessing the probable impacts. It is important that monitoring be undertaken on all potential renewable energy facility sites, following the BAWESG (Birds and Wind Energy Specialist Group) protocols, for at least 1 year (all four seasons) before any construction is authorized. Any environmental authorization should include the conditions attached to the proposed Kouga Wind Farm Project, i.e.

"A bird monitoring programme must be implemented to document the effect of the operation of the wind energy facility on avifauna and bats. This should commence prior to construction, and continue during operation of the wind energy facility...Reports must be submitted to Birdlife South Africa, Endangered Wildlife Trust [EWT] and this Department [Environmental Affairs] on a quarterly basis... The baseline data collected and documented during the survey must be shared with the EWT and Birdlife South Africa..."

Only in this way will sufficient data be accumulated to assess accurately the level of impact associated with renewable energy facilities.

2. Decommissioning Sureties

Decommissioning could become necessary if the developer fails, as well as at the end of the life of a project. Decommissioning requires the removal of all structures and infrastructure, *including* concrete foundations. This is a costly exercise and a bankrupt business will not have the funds necessary for the job. The St Francis Kromme Trust urges that the Department of Environmental Affairs make it a requirement for financial sureties to be lodged at the outset of construction, sufficient to cover future decommissioning costs.

From: Maggie Langlands [langlands@wirelessza.co.za]
Sent: 28 June 2011 04:38 PM
To: Sandy Wren
Subject: Banna ba Pifhu Wind Energy Project
Attachments: Issues re Kouga wind farms.doc

Hi Sandy,
Herewith an overview of issues the St Francis Kromme Trust has with the Banna ba Pifhu project.
Kind regards,
Maggie Langlands
Renewable Energy Portfolio
St Francis Kromme Trust

St Francis Kromme Trust

The St Francis Kromme Trust supports the quest for renewable energy production for South Africa and particularly environmentally-friendly sources of renewable energy. The issues we have with wind power are its inefficiency, high cost, and major impact on the environment.

An Eskom spokesperson estimates that a wind farm is doing well if it's putting power into the grid 27% of the time¹. The actual amount of power produced is minimal, about a quarter of the capacity claimed². And it is extremely expensive: in Britain at least twice the price of electricity from conventional power stations. In South Africa, if the 2009 REFIT tariff applies, it will be two and a half times the price. But most of all, the impact on the environment is substantial. Hundreds of giant turbines, sunk into huge cubes of concrete, planted over hectare after hectare of rural landscape. There are at least ten wind farms³ planned in the area of the Kouga Municipality in the Eastern Cape. Eight of these facilities are within a 20km radius of one another, and four of them either border on one another or almost do (Tsitsikamma, Red Cap West, RES Oyster Bay, and Red Cap Central).

Four of these proposed developments have already received environmental authorisation. The Jeffreys Bay Wind Project, Red Cap's Western Cluster, Red Cap's Central Cluster, and Red Cap's Eastern Cluster will be spread over 12 000 hectares – almost 6% of the whole Kouga area. Construction of all these facilities would not only permanently alter the nature of this rural landscape, the effect on bird species would also be significant. This particular area is the country's stronghold for Denham's Bustard, a vulnerable species, and Blue Cranes, White-bellied Korhaan, White Stork. Greater and Lesser Flamingo and Secretarybird are also found here in high densities. The most severely threatened of South Africa's ten bustard species is the Denham's Bustard. Wind farms, like power lines, pose a serious threat to bustards (and to cranes). Internationally, bustards

¹ News 24, 'Eskom 'keen' on solar, wind power', www.news24.com

² John Etherington, 'The Wind Farm Scam: An Ecologist's Evaluation' (2009)

³ Ubuntu, Jeffrey's Bay, Happy Valley, Banna ba Pifhu, Deep River, Tsitsikamma, RES Oyster Bay, Red Cap West, Red Cap Central and Red Cap East.

are at the top of the mortality lists for wind turbines. The reason has recently been identified through research, which shows that bustard visual fields have large blind sectors projecting forwards. Unlike herons, which need comprehensive forward vision for close-range stealth-foraging, bustards need wide ranging vision to detect predators and food sources at considerable distances. Blind spots are the evolutionary price they pay, and without man-made obstacles in their flight paths the price would be negligible. (Information from Birdlife SA's *Bustard Beat*: research by Graham Martin and Jessica Shaw)

We submit that, for an inefficient power source, these environmental costs are too high.

From: Bloem Marisa [BloemM@dwa.gov.za]
Sent: 21 July 2011 02:34 PM
To: sandy@publicprocess.co.za
Cc: Fourie Lizna (ELS); Tshatshu Portrait; Jacobs Joseph (PLZ)
Subject: Banna Ba Pifhu Wind Energy Project

Good Day

Please see comments from our technical unit regarding this project

COMMENTS: DRAFT SCOPING REPORT FOR THE PROPOSED BANNA BA PIFHU WIND ENERGY PROJECT, HUMANSDORP, EASTERN CAPE. REFERENCE NUMBER: 12/12/20/2289

The Sub-Directorate: Resource Protection acknowledges receipt of the Draft Scoping Report for the above-mentioned proposed development from the Water Use Authorization and Licencing unit on 11 July 2011.

Water Use Entitlements

As indicated in the Draft Scoping Report (Google image page16) dated July 2011, the zoned area for the proposed project is located within the extent of the watercourse i.e. 1:100 year floodline or riparian habitat, whichever is the greatest.

Any proposed development which may take place within the extent of a watercourse as defined above constitutes a Section 21 water use in terms of Chapter 4 of the National Water Act, 1998 (Act No. 36 of 1998) (the Act) and requires a water use authorization obtained from this department.

Following are the list of activities that may require a water use authorization:

- Any form of structure constructed within an extent of a watercourse requires a water use authorization. Therefore, if the wind turbines as well as the hard standing areas will be located within the extent of a watercourse, an authorization will be required;
- The removal of riparian vegetation to accommodate the project activities will also require a water use authorization in terms of Section 21 (i) of the Act and
- If the new access roads will cross any watercourses, an authorization will be required in terms of Section 21 (c) & (i) of the Act for impeding or diverting flow of water and altering the bed, banks, course or characteristics of a watercourse.

Additional information requirements

1. A map indicating the 1:100 year floodline of the affected watercourse/s, the location of the substation and the position of the wind turbines.
2. Should the proposed activities affect any wetlands in the immediate vicinity, a wetland specialist would need to be appointed to determine the boundaries of the wetland/s. Therefore, wetlands, if any, must be delineated and a technical report reflecting such should be submitted to this department.
Please note that any activities that fall within 500 meter radius from the boundary of any wetland constitute a water use license in terms of Section 21 (c) & (i) of the Act.
3. The description of the affected watercourse/s as well as the assessment of potential impacts of the proposed project and mitigation measures thereof.

Kind Regards

Marisa Bloem
Department of Water Affairs: Port Elizabeth
Water Use Authorization Section
Private Bag X6041
6000

Tel: 041 586 4884 (Extension 2205)
Mobile: 083 232 9822
Fax2Email: 086 560 5042
bloemm@dwa.gov.za

From: Minnelise Levendal [MLevendal@csir.co.za]
Sent: 30 June 2011 02:35 PM
To: Sandy Wren
Subject: SANRAL for Banna Ba Pifhu database

Hi Sandy

I would like to add SANRAL to the database.

Regards, minnelise

Mr Iqbal Hoosen
SANRAL - Southern Region
No 70 Second Avenue
Newton Park
Southern Life Gardens
SANRAL House; Block C
Port Elizabeth, 6045
041 398 3200

--

This message is subject to the CSIR's copyright terms and conditions, e-mail legal notice, and implemented Open Document Format (ODF) standard.
The full disclaimer details can be found at <http://www.csir.co.za/disclaimer.html>.

This message has been scanned for viruses and dangerous content by **MailScanner**, and is believed to be clean.

From:

To:0218882693

30/09/2011 08:29

#825 P.001/002



agriculture,
forestry & fisheries

Department:
Agriculture, Forestry and Fisheries
REPUBLIC OF SOUTH AFRICA

DEPARTMENT: AGRICULTURE
REPUBLIC OF SOUTH AFRICA

Directorate LUSM Private Bag x 120, PRETORIA, 0001 • Tel: (012) 319 7678

FAX COVER SHEET

DATE: 2011-09-30

TO:	CSIR	
ORGANISATION:		
FAX:	021 888 2693	
FROM:	T Nyoka (ThembiN@daff.gov.za)	
TEL:	012- 319 7464	Ref No: 2011_07_0154
FAX:	012-329 5938	
NO. PAGES:	2 incl. cover sheet	

MESSAGE:

Please find the letter of the farm Broadlands and Sarragossa no. 688,689 and 868-
Humansdorp for PIFHU wind energy project, EC province.

From:

To: 0218882693

30/09/2011 08:29

#825 P.002/002



agriculture,
forestry & fisheries

Department:
Agriculture, Forestry and Fisheries
REPUBLIC OF SOUTH AFRICA

Private Bag X120, Pretoria (Tshwane), 0001
Delpen Building, C/o Annie Botha & Union Street, Riviera, 0084

From: Directorate Land Use and Soil Management
Tel: 012-319-7678 Fax: 012-329-5938 E-mail:
Enquiries: Help Desk Ref: 2011_07_0154

CSIR
P O Box 320
STELLENBOSH
021 888 2693

2011 -09- 30

Fax: 021 888 2693

Dear Sir/Madam

**ENVIRONMENTAL IMPACT ASSESSMENT FOR THE PROPOSED BANNA BA
PIFHU WIND ENERGY PROJECT: ON BROADLANDS AND SARRAGOSSA NO. 688,
689 AND 868-HUMANSDORP, EASTERN CAPE PROVINCE**

Your letter dated July 2011 refers.

In view of the above and specifically in relation to the agricultural production potential of the site and surrounding areas as well as the current land use, this Department does not support any change of land use, rezoning, sub-division as it will impact negatively on the agricultural nature and production potential of the site.

The proposed change in land use is on cultivated area and this department does not support.

Yours faithfully

DELEGATE OF THE MINISTER: LAND USE AND SOIL MANAGEMENT

**Notes from meetings held
during the review of the Draft
Scoping Report**

Appendix I:

**Environmental Impact Assessment for the
Proposed Banna Ba Pithu Wind Energy Project
near Humansdorp, Eastern Cape:
Final Scoping Report**

**NOTES FROM THE FOCUS GROUP MEETINGS HELD DURING THE
REVIEW OF THE DRAFT SCOPING REPORT**

**Focus Group Meeting, St Francis Kromme Trust
12 July 2011**

Bridget Elton

- What is the intention of the applicant with regards to the type of structure that will be installed, are they considering the new mega structures which are appearing internationally. These are much larger than what is currently mentioned in the Draft Scoping Report.
- The potential shadow and flicker effect from the wind turbines is a key concern of the Trust, particularly when you are driving from St Francis Bay towards Humansdorp. It is estimated that once Thyspunt starts construction the same road will be used by approximately 1000 trucks per day, thereby making this road even more hazardous. The vehicle traffic at the moment on this road is bad and will only become worse over time.
- Why is the project capped at 50MW?

Maggie Langlands

- We require a map which overlays the footprint for the wind energy facility as well as the Photovoltaic facility so that we can see the proposed total disturbance on the site that will result from both the projects.
- What is the total area in hectares that is being assessed as part of this EIA?
- Has National DEA released guidelines yet for Wind Energy?

Godfried Potgieter

- Which substation will the project feed into, where is it located and what is the name of the substation?

**COSATU Humansdorp
12 July 2011**

Arnold Koester, COSATU Humansdorp

- We welcome and appreciate the development in this area as it will ultimately promote investments.
- We encourage that job opportunities are created during construction and post construction.

Monde Ralo, COSATU Humansdorp

- We recommend that the use of safety measures is monitored during and post construction.
- We support the training of local people for job opportunities that would be created by the development.
- In order to ensure the smooth running of the project consultation and communication should take place with local leaders during construction and operation.
- The development should give priority to using local businesses.
- We support this use of this type of electricity as it will be cheaper than using Eskom.

ANC Humansdorp
01 July 2011

Vuyani Zama, ANC Humansdorp

- We support the development and appreciate the environmental studies which are undertaken to minimize the impact on the environment.
- The project will attract investors and create job opportunities for locals.
- Local SMME's should be involved with opportunities that are created during the construction phase of the project.
- Electricity is becoming expensive, will this type of electricity be cheaper for domestic use.

REGISTRATION FORMS FROM MEETINGS HELD DURING THE REVIEW OF THE DRAFT SCOPING REPORT

MEETING: ANC Humansdorp
DATE: 12 July 2011

PROJECT: WKN Windcurrent

KINDLY PRINT YOUR NAME IN FULL AND WRITE CLEARLY.

FIRST NAME	SURNAME	ORGANISATION	FULL POSTAL ADDRESS	CODE	PHONE	FAX	EMAIL
Luypers	ZAMA	ANC FOMBA Sub-Region	Hankley 13 Gankoko Soul Center town location Hankley	6350	07185975 601		12k@21.08.10.21

MEETING: COBATU Humansdorp
DATE: 12 July 2011

PROJECT: WKN Windcurrent

KINDLY PRINT YOUR NAME IN FULL AND WRITE CLEARLY.

FIRST NAME	SURNAME	ORGANISATION	FULL POSTAL ADDRESS	CODE	PHONE	FAX	EMAIL
M	UITHALER	COBATU	Box 184 HDP	6300	011691828	0428970 388	
MINDS	RALO	COBATU	24 BA Gama Kwankwankwe Uitenhage	6242		042 291024	marise_rde @imf.co.za gov.za
ARNOLD	KOESTER	COBATU	De Aalbeek 57700 Waterblom street 9 Waterblom street	6500	0833657615		AKoester@windland bany.co.za

MEETING: Broadlands PD +
Banna Ba Pifhu Wind Energy
DATE: 12 July 2011

PROJECT: St Francis Kromme Trust
KINDLY PRINT YOUR NAME IN FULL AND WRITE CLEARLY.

FIRST NAME	SURNAME	ORGANISATION	FULL POSTAL ADDRESS	CODE	PHONE	FAX	EMAIL
Bridget	ELTON	St Francis Kromme Trust	Private Bags X3 Suite 140 St Francis Bay	6312	042 2940416		elton@ telkomsa.net
Godfried	POTGIETER	St Francis Kromme Trust	PO Box 374 St Francis Bay	6311	042 2941301		potgietergq@ Telkomsa.net
Haggie	Langlands	St Francis Kromme Trust	PO Box 293 St Francis Bay 6312		042 2941075		Langlands@ Windland.co.za