

JULY 2011

ENVIRONMENTAL IMPACT ASSESSMENT PROCESS

PROPOSED

ELLIOT WIND ENERGY FACILITY  
ON A SITE WEST OF ELLIOT

EASTERN CAPE PROVINCE

BACKGROUND INFORMATION DOCUMENT



DNA Wind Farm (Pty) Ltd is proposing to establish a commercial wind energy facility and associated infrastructure on a site located within Sakhisizwe Local Municipality in the Eastern Cape Province. The proposed wind energy facility is to be developed by DNA Wind Farm (Pty) Ltd, an infrastructure and wind farm developer. The proposed site is situated approximately 3 km west of Elliot. Based on an extensive pre-feasibility analysis and site identification processes undertaken by DNA Wind Farm, a favourable area has been identified for consideration and evaluation as per the requirements of an Environmental Impact Assessment (EIA). A cluster of up to 40 wind turbines, collectively referred to as a wind energy facility, is planned to be constructed over an area of approximately 16 km<sup>2</sup> in extent. The use of wind for power generation is considered as a non-consumptive use of a natural resource which produces zero greenhouse gas emissions. The nature and extent of this facility is explored in more detail in this Background Information Document (BID).

## AIM OF THIS BACKGROUND INFORMATION DOCUMENT

This BID aims to provide you, as an interested and/or affected party (I&AP), with:

- » An overview of the proposed Wind Energy Facility.
- » An overview of the Environmental Impact Assessment process and studies being undertaken to assess the potential impacts, both positive and negative of the proposed project.
- » Details of how you can become involved in the process, receive information, or raise issues, which may concern and/or interest you.

## OVERVIEW OF THE PROPOSED PROJECT

The site being considered for the proposed wind energy facility covers an area of approximately 16 km<sup>2</sup> which has primarily been used for agricultural activities. This site is proposed to accommodate up to 40 wind turbines with a generating capacity of up to 100 MW as well as the associated infrastructure which is required for such a facility (i.e. substation, access roads and distribution power line).

The Wind Energy Facility is proposed on the following farms: Remainder of Portion 1 of the farm Cloeta, Remainder of the farm Cloeta No. 100, Portion 8 of the farm Groentefontein and Remainder of Portion 1 of the farm Groentefontein.

Through a technical feasibility study which considered wind resource, access to the electricity grid, accessibility of the site and local site topography, a potential site for the development of a wind energy facility and associated infrastructure was identified by DNA Wind Farm. Thorough analysis of potential areas in four provinces of South Africa led DNA Wind Farm to select the site.

The proposed wind energy facility would comprise up to 40 wind turbines. Since the performance of the turbines is determined by disturbances to the wind resource, they must be appropriately spaced within the facility. The overall aim of the design and layout of the facility is to maximise electricity production through exposure to the wind resource, while minimising infrastructure, operation and maintenance costs, and social and environmental impacts.

Other infrastructure associated with the facility will include:

- » Foundations to support the turbine towers;
- » Underground cables between turbines;
- » A substation
- » Overhead power lines (i.e. 66 KV distribution lines) which will then link to the existing Eskom transmission line on-site; and
- » Internal access roads to each wind turbine.

The Elliot Wind Energy Facility is intended to be registered with the United Nation's Framework Convention for Climate Change as part of the Clean Development Mechanisms Programme.

## WIND TURBINES

Wind Energy Facilities consist of multiple wind turbines which are used to capture the kinetic energy of the wind. This kinetic energy is then used to drive a generator located within the wind turbine and the energy is subsequently converted into electrical energy. A typical wind turbine consists of four primary components:

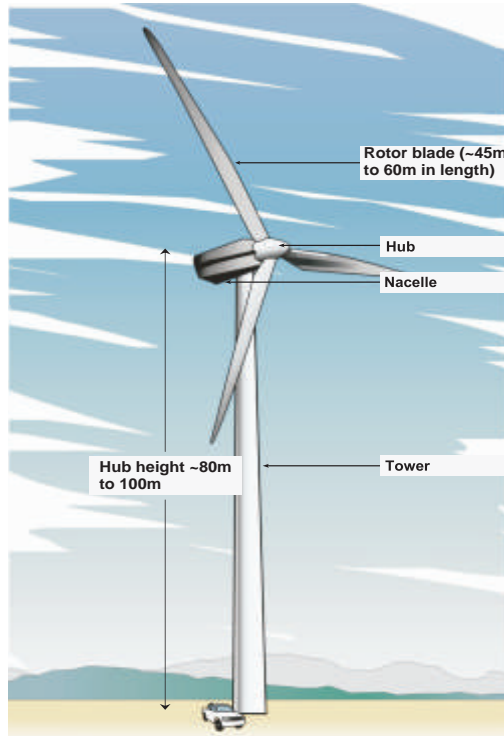
- » The foundation unit upon which the turbine is anchored to the ground;
- » The tower which reaches up to 100 m;
- » The nacelle (generator/turbine housing); and
- » The rotor which is comprised of the rotor blade and the rotor tip (with a diameter of up to 120 m).

The mechanical power generated by the rotation of the blades is transmitted to the generator within the nacelle via a gearbox and a drive train. The wind turns the blades, which in turn spin a shaft which connects to a generator and generates electrical power. The amount of energy a turbine can harness is dependent on the wind velocity and the length of the rotor blades. Wind turbines start generating power at wind speeds of between 10-15 km/hour, with speeds between 45-60 km/hour required for full power operation. In a situation where wind speeds are excessive, the turbine automatically shuts down to prevent damage.

DNA Wind Farm is considering various site layouts in order to maximise the generating capacity and minimise the potential environmental impacts of the site. Decisions regarding the final design of the facility will be made following further analyses.

A facility consisting of up to 40 turbines will take approximately one year to construct and commission, and requires the expertise of skilled staff. A wind turbine is designed to operate continuously, with low maintenance for more than 20 years.

Components of a wind turbine:



## ENVIRONMENTAL IMPACT ASSESSMENT PROCESS

In terms of the EIA Regulations published in terms of Section 24(5) of the National Environmental Management Act (NEMA, Act No. 107 of 1998), DNA Wind Farm (Pty) Ltd requires authorisation from the National Department of Environmental Affairs (DEA) in consultation with the Eastern Cape Department of Economic Development and Environmental Affairs (DEDEA) for the construction and operation of the proposed facility. In terms of sections 24 and 24D of NEMA, as read with the EIA Regulations of GN R543 (Regulations 26-35) and R545, a Scoping Phase and an EIA are required to be undertaken for this proposed project. In order to obtain authorisation, comprehensive, independent environmental studies must be undertaken in accordance with the EIA Regulations. This project has been registered with the National DEA under application reference number 12/12/20/2282.

An EIA is an effective planning and decision-making tool. It allows the potential environmental consequences resulting from a technical facility during its establishment and its operation to be identified and appropriately managed. It provides the opportunity for the developer to be fore-warned of potential environmental issues, and allows for resolution of the issue(s) reported on in the EIA report as well as dialogue with I&APs.

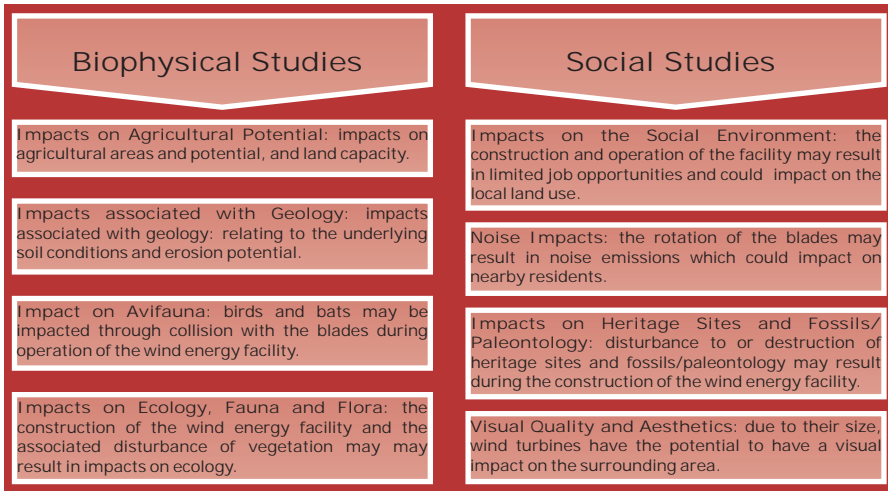
DNA Wind Farm has appointed Savannah Environmental, as the independent environmental consultants, to undertake the required Scoping Phase and Environmental Impact Assessment to identify and assess all the potential environmental impacts associated with the proposed project, and proposes appropriate mitigation and management measures in an Environmental Management Plan (EMP). As part of these environmental studies, I&APs will be actively involved through the public involvement process being undertaken by Sustainable Futures ZA.

The phases of an EIA are:



## WHAT ARE THE POTENTIAL ENVIRONMENTAL IMPACTS ASSOCIATED WITH THE PROPOSED PROJECT?

A number of potential environmental impacts, both positive and negative, associated with the proposed Wind Energy Facility have been identified. These potential impacts will be assessed through the following specialist studies:



These specialist studies will be undertaken in two phases:

1. The Scoping Phase/Study consists of a desktop study wherein potential issues associated with the proposed project are identified and evaluated, and those issues requiring further investigation through the EIA phase are highlighted.
2. The EIA phase involves the detailed assessment of potentially significant impacts identified in the Scoping Phase. Practical and achievable mitigation and management measures will be recommended within the draft Environmental Management Plan (EMP).

Specialist studies will be guided by existing information, field observations and input from the public participation process. As an I&AP, your input is considered an important part of this process, and we urge you to become involved.

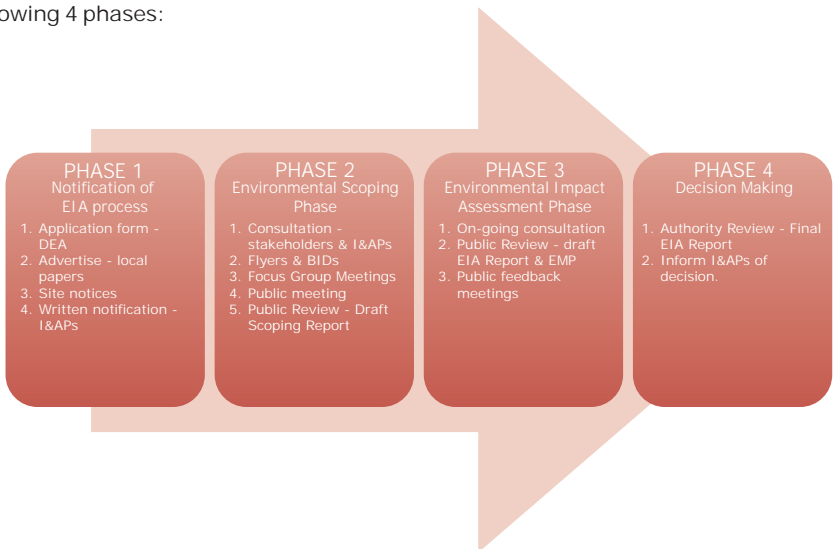
## PUBLIC INVOLVEMENT PROCESS

The sharing of information forms the basis of the public involvement process and offers you the opportunity to become actively involved in the EIA from the outset. Comments and inputs from I&APs during the EIA process are encouraged in order to ensure that potential impacts are considered within the ambit of the study.

The public involvement process aims to ensure that:

- » Information that contains all the relevant facts in respect of the application is made available to I&APs for review.
- » I&AP participation is facilitated in such a manner that they are provided with a reasonable opportunity to comment on the proposed project.
- » Adequate review periods are provided for I&APs to comment on the findings of the draft Scoping and EIA Reports.

In order to ensure effective participation, the public involvement process includes the following 4 phases:



## YOUR RESPONSIBILITIES AS AN I&AP

In terms of the EIA Regulations, your attention is drawn to your responsibilities as an I&AP:

- » In order to participate in this EIA process, you must register yourself on the project database.
- » You must ensure that any comments regarding the proposed project are submitted within the stipulated timeframes.

- » You are required to disclose any direct business, financial, personal or other interest which that you may have in the approval or refusal of the application for the proposed wind energy facility.

## HOW TO BECOME INVOLVED

1. By responding (by phone, fax or e-mail) to our invitation for your involvement which has been advertised in local and national newspapers.
2. By returning the attached Reply Form to the relevant contact person.
3. By attending the meetings to be held during the course of the project. As a registered I&AP you will automatically be invited to attend these meetings. Dates for public meetings will also be advertised in local and regional newspapers.
4. By contacting the consultants with queries or comments.
5. By reviewing and commenting on the draft Scoping and EIA Reports within the stipulated 30-day review periods.

If you consider yourself an I&AP for this proposed project, we urge you to make use of the opportunities created by the public involvement process to provide comment, or raise those issues and concerns which affect and/or interest you, and about which you would like more information. Your input into this process forms a key element of the EIA process.

By completing and submitting the accompanying reply form, you automatically register yourself as an I&AP for this project, and are ensured that your comments, concerns or queries raised regarding the project will be noted.

## COMMENTS AND QUERIES

Direct all comments, queries or responses to:

Shawn Johnston of Sustainable Futures ZA  
PO Box 749, Rondebosch, CAPE TOWN, 7701

Phone: 083 325 9965

Fax: 086 510 2537

E-mail: [swjohnston@mweb.co.za](mailto:swjohnston@mweb.co.za)

To view project documentation, visit

[www.savannahSA.com](http://www.savannahSA.com)

# Elliot Wind Energy Facility

Locality Map

## Legend

- Regional Road
- Secondary Road
- Railway Line
- Perennial River
- Non-perennial River
- Power Line
- Distribution Substation
- Farm Portions

