ENVIRONMENTAL IMPACT ASSESSMENT PROCESS
FINAL BASIC ASSESSMENT REPORT

PROPOSED NOBLESFONTEIN WIND FARM 132 kV POWER LINE & SUBSTATION ON THE FARM NOBLESFONTEIN, NEAR VICTORIA WEST, NORTHERN CAPE

DEA REF: 14/12/16/3/3/1/744
NEAS REFERENCE: 14/12/16/3/3/1/744

FINAL BASIC ASSESSMENT REPORT FOR SUBMISSION TO DEA
APRIL 2013

Prepared for:

Coria (PKF) Investments 28 (Pty) Ltd
ICR House Floor 1, Alphen Park,
Constatia Main Road,
7806

Prepared by:

Savannah Environmental Pty Ltd

FIRST FLOOR, BLOCK 2,
5 WOODLANDS DRIVE OFFICE PARK
CNR WOODLANDS DRIVE &
WESTERN SERVICE ROAD,
WOODMEAD, GAUTENG
P.O. BOX 148, SUNNINGHILL, 2157
TELEPHONE : +27 (0)11 656 3237
FACSIMILE : +27 (0)86 684 0547
EMAIL : INFO@SAVANNAHSA.COM
WWW.SAVANNAHSA.COM

Savannah
ENVIRONMENTAL (PTY) LTD

environmental affairs

Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

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File Reference Number:	
Application Number:	
Date Received:	

Basic assessment report in terms of the Environmental Impact Assessment Regulations, 2010, promulgated in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended.

Kindly note that:

1. This **basic assessment report** is a standard report that may be required by a competent authority in terms of the EIA Regulations, 2010 and is meant to streamline applications. Please make sure that it is the report used by the particular competent authority for the activity that is being applied for.
2. This report format is current as of **1 September 2012**. It is the responsibility of the applicant to ascertain whether subsequent versions of the form have been published or produced by the competent authority
3. The report must be typed within the spaces provided in the form. The size of the spaces provided is not necessarily indicative of the amount of information to be provided. The report is in the form of a table that can extend itself as each space is filled with typing.
4. Where applicable **tick** the boxes that are applicable in the report.
5. An incomplete report may be returned to the applicant for revision.
6. The use of "not applicable" in the report must be done with circumspection because if it is used in respect of material information that is required by the competent authority for assessing the application, it may result in the rejection of the application as provided for in the regulations.
7. This report must be handed in at offices of the relevant competent authority as determined by each authority.
8. No faxed or e-mailed reports will be accepted.
9. The signature of the EAP on the report must be an original signature.
10. The report must be compiled by an independent environmental assessment practitioner.
11. Unless protected by law, all information in the report will become public information on receipt by the competent authority. Any interested and affected party should be provided with the information contained in this report on request, during any stage of the application process.

12. A competent authority may require that for specified types of activities in defined situations only parts of this report need to be completed.
13. Should a specialist report or report on a specialised process be submitted at any stage for any part of this application, the terms of reference for such report must also be submitted.
14. Two (2) colour hard copies and one (1) electronic copy of the report must be submitted to the competent authority.
15. Shape files (.shp) for maps must be included on the electronic copy of the report submitted to the competent authority.

PROJECT DETAILS

DEA Reference No.	**:**	14/12/16/3/3/1/744
Title	**:**	Environmental Assessment Process for the Proposed Noblesfontein Wind Farm 132kv Power Line and Substation on the farm Noblesfontein, near Victoria West, Northern Cape
Authors	**:**	Savannah Environmental Lusani Rathanya Steven Ingle Karen Jodas
Client	**:**	Coria (PKF) Investments 28 (Pty) Ltd
Report Status	**:**	Final Basic Assessment Report for Submission to DEA
Review Period	**:**	April 2013

When used as a reference this report should be cited as: Savannah Environmental (2013) Final Basic Assessment Report for the Process for the Proposed Noblesfontein Wind Farm 132kv Power Line and Substation on the farm Noblesfontein, near Victoria West, Northern Cape

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INVITATION TO COMMENT ON THE DRAFT BASIC ASSESSMENT REPORT

The **Draft Basic Assessment Report** was made available for public review at the following place situated in the vicinity of the proposed project area from **08 March – 11 April 2013:**

- Victoria West Public Library
- The report was also made available for download on: www.savannahsa.com

SUMMARY AND OVERVIEW OF THE PROPOSED PROJECT

Coria (PKF) Investments 28 (Pty) Ltd is proposing the establishment of a 132 kV Substation and power line to connect the Noblesfontein Wind Farm (refer to Figure 1) to an existing Eskom power line (Biesiespoort/ Kromrivier 1 132kV power line).The proposed facility will be established with a development corridor located within the authorised Noblesfontein Wind Energy Facility, approximately 34 km south of Victoria West, in Northern Cape Province (refer to Figure 2).

The project was formerly known to as the Karoo Renewable Energy Facility (DEA Ref: 12/12/20/1993). The authorisation was amended to split the authorised project development area into three project development phases, and an amended authorisation for each phase was issued on 22 February 2012 (refer to Figure 3). The details of the projects are provided below.

Project Names	**DEA REF NO.**
Noblesfontein Wind Energy Facility (132 MW)	12/12/20/1993/1
Noblesfontein Solar Energy Facility (50 MW)	12/12/20/1993/2
Modderfontein Wind Energy Facility (198 MW)	12/12/20/1993/3

The first phase of the project is now known as the Noblesfontein Wind Farm, and was awarded preferred bidder status by the Department of Energy in 2011. The Noblesfontein Wind Farm is currently being developed by Coria (PKF) Investments 28 (Pty) Ltd (formerly owned by South African Renewable Green Energy (SARGE)).

The authorisation for the wind energy facility included the construction of a substation and a power line (refer to Figure 3). However, through the final micrositing of the facility, it was raised that the authorised location of the substation and power line was too far relative to the location of the bulk of the turbines. This would mean that additional lengths of power cable would be required to connect the turbines to the wind farm grid (i.e. to the on-site substation). This relocation of the substation to a more central location is preferred from a technical perspective. This move in infrastructure location would reduce the distance of connection between the turbines and the substation.

This Basic Assessment process is considering the new position of the substation and power line, and will replace the originally authorised infrastructure if authorised. There will only be one substation and one power line constructed for the Noblesfontein Wind Farm project.

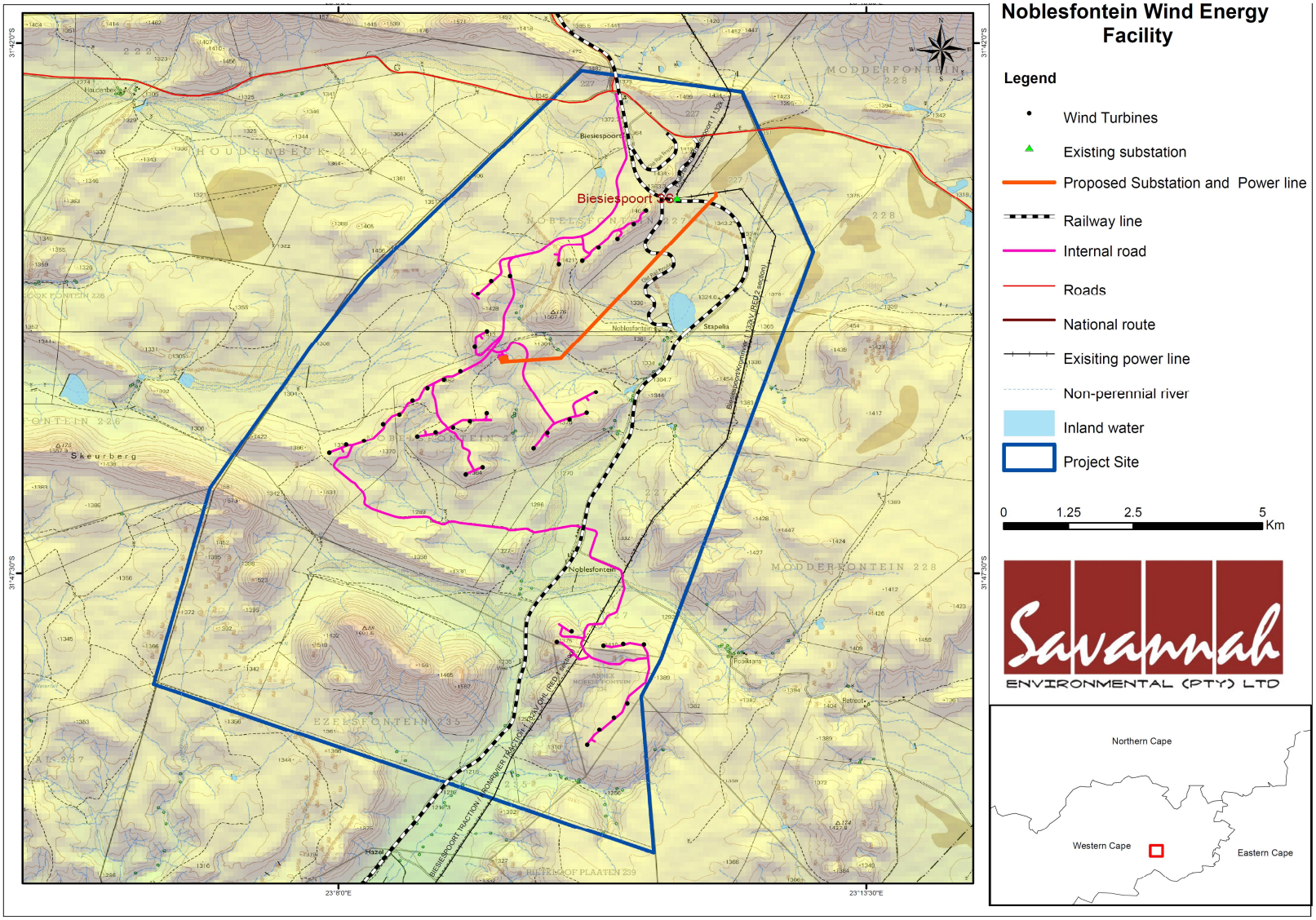

Figure 1: Locality map showing the authorised Noblesfontein Wind Farm (currently under development) and proposed Substation and Power Line

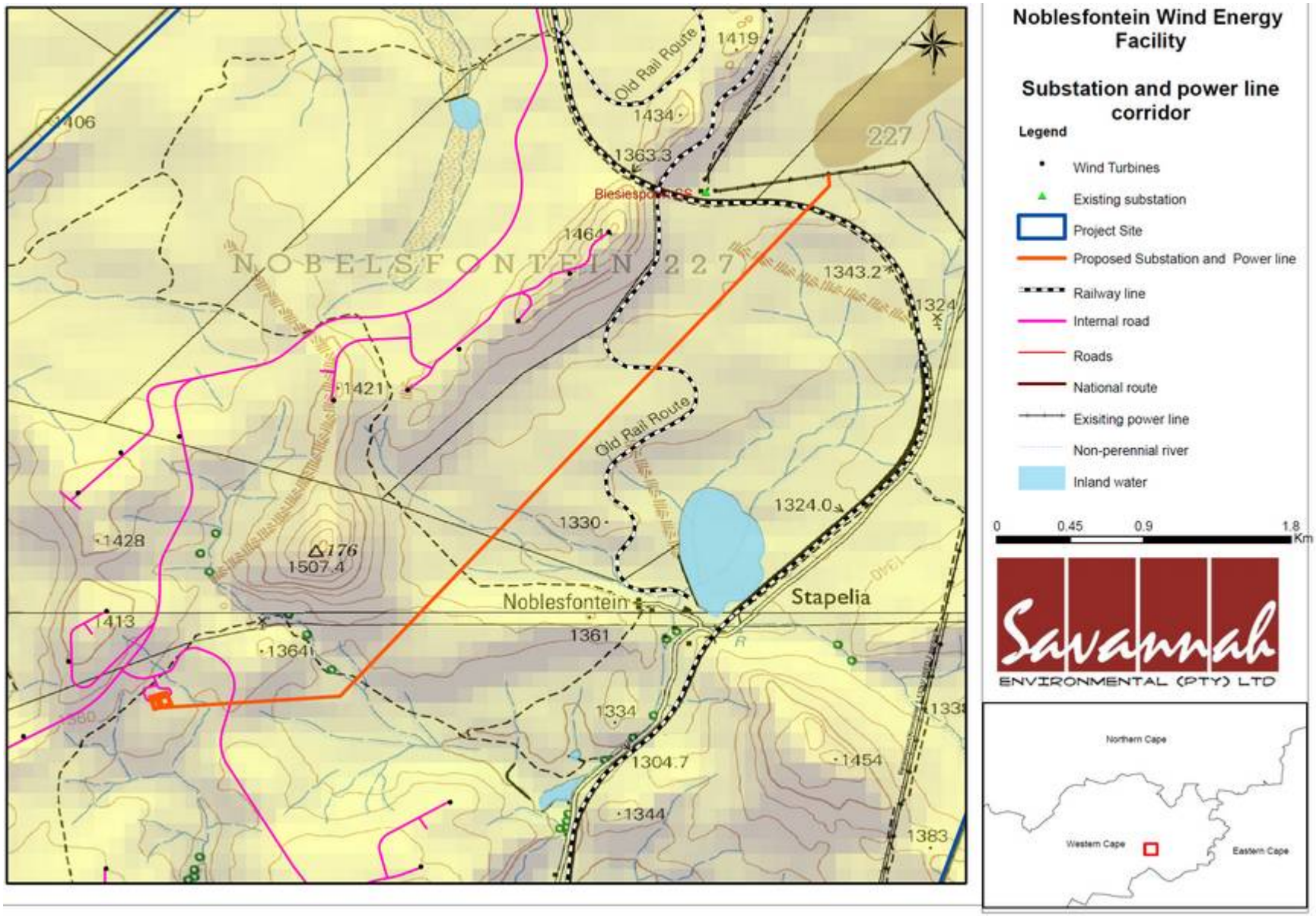

Figure 2: Facility Layout Plan indicating Substation and Power Line

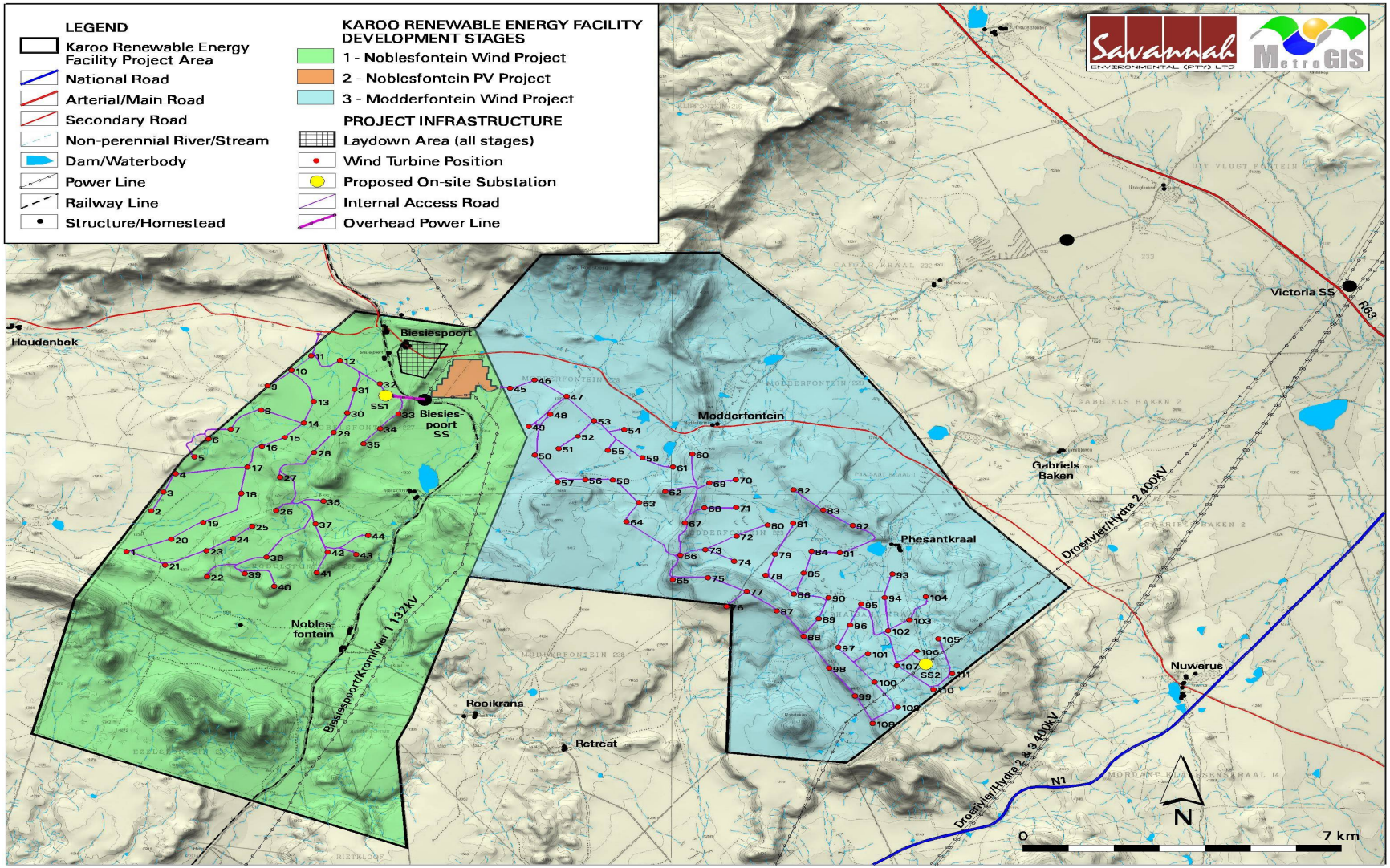

Figure 3: Locality map showing the three phases of the project. The Noblesfontein Wind Farm is the green section on the western side of the site (refer Savannah, January 2012)

1.1. Summary of the Proposed Development

Due to the exploitation of and large scale reliance on non-renewable resources and the potential subsequent impacts on climate, there is increasing pressure globally to increase the share of renewable energy generation. South Africa currently depends on fossil fuels for the supply of approximately 90% of its primary energy needs. With economic development over the next several decades resulting in an ever increasing demand for energy, there is some uncertainty as to the availability of economically extractable coal reserves for future use. Furthermore, several of South Africa's power stations are nearing the end of their economic life which is coupled with the expense of the re-commissioning of older power stations (i.e. Camden, Komati, and Grootvlei which is expected to cost in the region of R20 billion to return on line).

The current electricity imbalances in South Africa highlight the significant role that renewable energy can play in terms of power supplementation. Given that renewables can generally be deployed in a decentralised manner close to consumers, they offer the opportunity for improving grid strength and supply quality, while reducing expensive transmission and distribution losses. At present, South Africa is some way off from exploiting the diverse gains from renewable energy and from achieving a considerable market share in the industry. In order to meet the long-term goal of a sustainable renewable energy industry, a target of 17.8 GW of renewables by 2030 has been set by the Department of Energy (DoE) within the Integrated Resource Plan (IRP) 2010 and incorporated in the IPP Procurement Programme. The proposed project is to contribute towards achieving this goal for renewable energy, as the infrastructure will connect an authorised wind farm in the Northern Cape which is currently under construction to the Eskom grid (i.e. enable efficient evacuation of power).

Coria (PKF) Investments 28 (Pty) Ltd is proposing the establishment of a new 132 kV substation and power line on the Farm Noblesfontein 227 located approximately 34 km south of Victoria West in the Northern Cape Province of South Africa (refer to Figures 1, 2 and 3). Coria (PKF) Investments 28 (Pty) Ltd is planning to construct the proposed substation and power line in order to connect the Noblesfontein Wind farm (which is currently under construction) to the Eskom grid.

The Noblesfontein substation facility will be approximately 250m X 250m (or 6.25ha) in extent and will house the following infrastructure:

» Transformer and Auxiliary transformer;
» Isolators (disconnecting switch) and earth switch;
» Feeder bays for incoming lines;
» Circuit/equipment protection;
» Substation yard boundary fence;
» Small oil spill sump;

» Lighting and surge arrestors; and
» Conductors (cables).

The power line will connect to the on - site Noblesfontein substation to the Eskom grid via a turn-in and – out configuration with the existing Biesiespoort/Kromrivier 1 132kV power line. The power line corridor assessed is approximately 5 km in length, and 300m wide. The 132kV power line would be strung as a double circuit line (i.e. to accommodate the turn in and out configuration), and would be constructed within a servitude of approximately 36m in width (i.e. considerable less than the assessed corridor width).

A preliminary layout for the facility was received from Coria (PKF) Investments 28 (Pty) Ltd, and was considered in this assessment (**Figure 2**).

The construction of the substation and power line will include site clearance and construction of access roads to site (where required, and where existing access roads or new roads associated with the wind farm do not already exist).

1.2 Requirements for a Basic Assessment Process

In terms of the Environmental Impact Assessment (EIA) Regulations published in terms of Section 24(5) of the National Environmental Management Act (NEMA, Act No. 107 of 1998), Coria (PKF) Investments 28 (Pty) Ltd requires an authorisation for the construction and operation of the proposed substation and power line. In terms of sections 24 and 24D of the National Environmental Management Act (No 107 of 1998), as read with the EIA Regulations of GN R544 – R546 a Basic Assessment process is triggered by the proposed activities.

The nature and extent of all components of the proposed project are explored in more detail in this Basic Assessment Report. This report has been compiled in accordance with the requirements of the EIA Regulations and includes details of the activity description; the site, area and property description; the public participation process; the impact assessment; and the recommendations of the Environmental Assessment Practitioner.

The following listed activities are applicable:

Table 1.1: Listed activities relevant to the proposed Noblesfontein Substation and Power Line (DEA reference number: 14/12/16/3/3/1/744)

Indicate the number and date of the relevant notice:	**Activity No (s) (in terms of the relevant notice) :**	**Describe each listed activity as per project description:**
GN 544, 18 June 2010	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 ***The project will entail construction of a 132kV Substation and Power Line of approximately 4,935 meters in length (outside an urban area)***
GN 544, 18 June 2010	11	The construction of: (xi).infrastructure or structures covering 50 square metres or more where such construction occurs within a watercourse or within 32 metres of a watercourse, excluding where such construction will occur behind the development setback line. ***The power line will be required to span a watercourse and infrastructure will be constructed within 32m of a watercourse*.**
GN 544, 18 June 2010	13	The construction of facilities or infrastructure for the storage, or for the storage and handling, of a dangerous good, where such storage occurs in containers with a combined capacity of 80 but not exceeding 500 cubic metres; ***During construction & operations fuel could be stored on site; as well as oils from the substation transformers.***
GN 544, 18 June 2010	18	The infilling or deposition of any material of more than 5 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 5 cubic metres from: (i)a watercourse ***There are drainage lines on the development site which could be affected by the proposed development, including access roads.***

GN 544, 18 June 2010	23	The transformation of undeveloped, vacant or derelict land to: 1. Residential, retail, commercial, recreational, industrial or institutional use, inside an urban area, and where the total area to be transformed is 5 hectares or more, but less than 20 hectares, or 2. Residential, retail, commercial, recreational, industrial or institutional use, outside of an urban area and where the total area to be transformed is bigger than one hectare but less than 20 hectares. **Land transformation for the construction of the substation will be of dimensions 250m X 250m (or 6.25ha).**
GN 546, 18 June 2010	12	The clearance of an area of 300 square metres or more of vegetation where 75% or more of the vegetative cover constitutes indigenous vegetation **Vegetation will be cleared for the construction a substation and power line**
GN 546, 18 June 2010	19	The widening of a road by more than 4 metres, or the lengthening of a road by more than 1 kilometre. **The existing road may be widened or lengthened.**

1.3 Details of Environmental Assessment Practitioner and Expertise to conduct the Basic Assessment

Savannah Environmental has been appointed as the independent environmental consultant, to undertake the Environmental Basic Assessment to identify and assess the potential environmental impacts associated with the proposed facility. Neither Savannah Environmental nor any of its specialist sub-consultants on this project are subsidiaries of or are affiliated to Coria (PKF) Investments 28 (Pty) Ltd. In addition, Savannah Environmental does not have any interest in secondary developments that may arise out of the authorisation of the proposed project.

Savannah Environmental is a specialist environmental consulting company providing holistic environmental management services, including environmental impact assessment and planning to ensure compliance and evaluate the risk of development and the development and implementation of environmental management tools. Savannah Environmental benefits from the pooled resources, diverse skills and experience in the environmental field held by its team that has been actively involved in undertaking environmental studies for a wide variety of projects throughout South Africa

and neighbouring countries. Strong competencies have been developed in project management of environmental processes, as well as strategic environmental assessment and compliance advice, and the assessment of environmental impacts, the identification of environmental management solutions and mitigation/risk minimising measures.

The Savannah Environmental team has considerable experience in environmental impact assessments and environmental management, and have been actively involved in undertaking environmental studies, for a wide variety of projects throughout South Africa, including those associated with electricity generation.

The EAP's from Savannah Environmental who are responsible for this project are:

- *Karen Jodas* is a registered Professional Natural Scientist and holds a Master of Science degree. She has 14 years of experience consulting in the environmental field. Her key focus is on strategic environmental assessment and advice; management and co-ordination of environmental projects, which includes integration of environmental studies and environmental processes into larger engineering-based projects and ensuring compliance to legislation and guidelines; compliance reporting; the identification of environmental management solutions and mitigation/risk minimising measures; and strategy and guideline development. She is currently responsible for the project management of EIAs for several renewable energy projects across the country.
- *Lusani Rathanya* - the principal author of this report holds an Honours degree in Environmental Management and Analysis. Her key focus is on environmental impact assessments, waste management and water-use processes, environmental management plans and programmes. She is currently the responsible EAP for several renewable energy projects EIAs across the country.
- *Steven Ingle* - Steven Ingle is currently employed as a senior environmental consultant and holds a degree in Environmental Management with over 7 years of experience in the environmental field. His competencies lie in environmental impact assessments for large scale infrastructure, property and mining projects, environmental due diligence and risk assessment, environmental compliance monitoring, waste management licensing and strategic environmental assessment.

Savannah Environmental has gained extensive knowledge and experience on potential environmental impacts associated with electricity generation projects through their involvement in related EIA processes. Savannah Environmental has completed the EIA process and received environmental authorisations for numerous renewable projects.

Curricula vitae for the Savannah Environmental project team consultants are included in **Appendix H**.

SECTION A: ACTIVITY INFORMATION

Has a specialist been consulted to assist with the completion of this section?	NO ✓

If YES, please complete the form entitled "Details of specialist and declaration of interest" for the specialist appointed and attach in Appendix I.

1. PROJECT DESCRIPTION

a) Describe the project associated with the listed activities applied for

The Noblesfontein substation facility will be approximately 250m X 250m (or 6.25ha) in extent housing the following infrastructure:

» Transformer and Auxiliary transformer;
» Isolators (disconnecting switch) and earth switch;
» Feeder bays for incoming lines;
» Circuit/equipment protection;
» Substation yard boundary fence;
» Small oil spill sump;
» Lighting and surge arrestors; and
» Conductors (cables).

The power line will connect the on-site Noblesfontein substation to the Eskom grid via a turn-in and –out configuration with the existing Biesiespoort/Kromrivier 132kV power line. The power line corridor assessed is approximately 5 km in length, and 300m wide. The 132kV power line (refer to Figure 4) would be strung as a double circuit line (i.e. to accommodate the turn in and out configuration), and would be constructed within a servitude of approximately 36m in width (i.e. considerable less than the assessed corridor width).

Figure 4: Illustration of a 132kV Distribution Substation

1.2 Construction of a Distribution Substation and Power Line:

The Noblesfontein substation facility will be approximately 250m X 250m (or 6.25ha). Foundations will be installed to accommodate infrastructure, (such as transformers, towers, bus-bars, transformer oil spill sumps).

Substations and Power lines are constructed in the following simplified sequence:

Step 1: Survey the area
Step 2: Final design and placement of the infrastructure
Step 3: Issuing of tenders, and award of contract to construction companies
Step 4: Vegetation clearance and construction of access roads (where required)
Step 5: Construction of foundations
Step 6: Assembly and erection of infrastructure on site
Step 7: Stringing of conductors
Step 8: Rehabilitation of disturbed area and protection of erosion sensitive areas
Step 9: Testing and commissioning
Step 10: Continued maintenance

1.3 Operation Phase

The proposed Substation and power line will require routine maintenance work

throughout this period. The site will be accessed using the access roads established during the construction phase.

1.4 Decommissioning Phase

The substation and power line is expected to have a lifespan of more than 40 years (with maintenance) and the infrastructure would only be decommissioned once it has reached the end of its economic life. If economically feasible/desirable the decommissioning activities would comprise the disassembly and replacement of the individual components with more appropriate technology/ infrastructure available at that time. However, if not deemed so, then the substation would be completely decommissioned which would include the following decommissioning activities.

a) Site Preparation

Site preparation activities will include confirming the integrity of the access to the site to accommodate the required equipment and the mobilisation of decommissioning equipment.

b) Disassemble Components

The components would be disassembled, and reused and recycled (where possible), or disposed of in accordance with regulatory requirements.

c) Rehabilitation

Disturbed areas (where infrastructure has been removed) will be rehabilitated, if required, depending on the future land-use of the facility.

b) Provide a detailed description of the listed activities associated with the project as applied for

Listed activity as described in GN R.544, 545 and 546	**Description of project activity**
GN 544, 18 June 2010, activity 10 (i): *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*	The project will entail construction of a 132kV Substation and Power Line (outside an urban area)
GN 544, 18 June 2010, activity 11 *The construction of:* *(xi)infrastructure or structures covering 50 square metres or more* *Where such construction occurs within a*	The power line will be required to span a watercourse, and the construction of infrastructure within 32m of a watercourse.

Listed activity as described in GN R.544, 545 and 546	**Description of project activity**
watercourse or within 32 metres of a watercourse, excluding where such construction will occur behind the development setback line.	
GN 544, 18 June 2010, activity 13 *The construction of facilities or infrastructure for the storage, or for the storage and handling, of a dangerous good, where such storage occurs in containers with a combined capacity of 80 but not exceeding 500 cubic metres;*	During construction & operations fuel could be stored on site; as well as oils from the substation transformers.
GN 544, 18 June 2010, activity 23 *The transformation of undeveloped, vacant or derelict land to:* *1. Residential, retail, commercial, recreational, industrial or institutional use, inside an urban area, and where the total area to be transformed is 5 hectares or more, but less than 20 hectares, or* *2. Residential, retail, commercial, recreational, industrial or institutional use, outside of an urban area and where the total area to be transformed is bigger than one hectare but less than 20 hectares.*	Land transformation for the construction of the substation will be of approximate dimensions 250m X 250m (or 6.25ha).
GN 546, 18 June 2010, activity 12 *The clearance of an area of 300 square metres or more of vegetation where 75% or more of the vegetative cover constitutes indigenous vegetation*	Vegetation will be cleared for the construction a substation and power line.
GN 546, 18 June 2010, activity 19 *The widening of a road by more than 4 metres, or the lengthening of a road by more than 1 kilometre.*	The existing road may be widened or lengthened.

2. FEASIBLE AND REASONABLE ALTERNATIVES

"alternatives", in relation to a proposed activity, means different means of meeting the general purpose and requirements of the activity, which may include alternatives to—

(a) the property on which or location where it is proposed to undertake the activity;
(b) the type of activity to be undertaken;
(c) the design or layout of the activity;
(d) the technology to be used in the activity;
(e) the operational aspects of the activity; and
(f) the option of not implementing the activity.

Describe alternatives that are considered in this application as required by Regulation 22(2) (h) of GN R.543. Alternatives should include a consideration of all possible means by which the purpose and need of the proposed activity (NOT PROJECT) could be accomplished in the specific instance taking account of the interest of the applicant in the activity. The no-go alternative must in all cases be included in the assessment phase as the baseline against which the impacts of the other alternatives are assessed.

The determination of whether site or activity (including different processes, etc.) or both is appropriate needs to be informed by the specific circumstances of the activity and its environment. After receipt of this report the, competent authority may also request the applicant to assess additional alternatives that could possibly accomplish the purpose and need of the proposed activity if it is clear that realistic alternatives have not been considered to a reasonable extent.

The identification of alternatives should be in line with the Integrated Environmental Assessment Guideline Series 11, published by the DEA in 2004. Should the alternatives include different locations and lay-outs, the co-ordinates of the different alternatives must be provided. The co-ordinates should be in degrees, minutes and seconds. The projection that must be used in all cases is the WGS84 spheroid in a national or local projection.

a) Site alternatives

The proposed Noblesfontein Substation and Power Line are located within the footprint of the authorised Noblesfontein Wind Farm which is currently under construction (DOE Round 1 preferred bidder). The infrastructure has been sited in accordance with the technical considerations associated with the wind energy facility. No feasible alternative sites have been identified for the proposed substation and power line infrastructure, as the proposed location provides the most viable location for a centrally located substation, and the power line connects to a point on Eskom's power line as approved through the Eskom cost estimate letter issued to the wind farm developer.

Alternative 1 (preferred alternative)		
Description	Lat (DDMMSS)	Long (DDMMSS)
This site for the placement of the substation has been	31.754623	23.162422

selected based on the following preferences: » This site has been strategically placed in the centre point in order to connect each of the proposed wind energy facilities into the Eskom grid; » The site is located in close proximity to an existing power line which can be connected to the substation to facilitate the distribution of the electricity from the wind energy facility into the Eskom grid; » Site access (i.e. the site is easily accessible from the N1 and N12, and then via a secondary gravel road);Site slope and topography (i.e. the site proposed for the placement of the substation is flat with little hills/mountains in the immediate vicinity and which will facilitate foundation works).		
Alternative 2		
Description	Lat (DDMMSS)	Long (DDMMSS)
Alternative 3		
Description	Lat (DDMMSS)	Long (DDMMSS)

In the case of linear activities:

There are no alternatives proposed for the power line routes since:

» The proposed Noblesfontein Power Line is located within the footprint of the authorised Noblesfontein Wind Farm which is currently under construction (DOE Round 1 preferred bidder). The infrastructure has been sited in accordance with the technical considerations associated with the wind energy facility. No feasible alternative sites have been identified for the proposed substation and power line infrastructure, as the proposed location provides the most viable location for a centrally located substation, and the power line connects to a point on Eskom's power line as approved through the Eskom cost estimate letter issued to the wind farm developer.

Alternative: Power line	**Latitude (S):**	**Longitude (E):**
Alternative S1 (preferred):		
• Starting point of the activity	31°45'17.614"	31°45'17.614"
• Middle/Additional point of the activity	23°9'44.081"	23°9'44.081"
• End point of the activity	31°44'43.848"	31°44'43.848"
Alternative S2 (preferred):		
• Starting point of the activity		

• Middle/Additional point of the activity		
• End point of the activity		

Alternative S3 (preferred):

• Starting point of the activity		
• Middle/Additional point of the activity		
• End point of the activity		

For route alternatives that are longer than 500m, please provide an addendum with co-ordinates taken every 250 meters along the route for each alternative alignment.

Power line coordinates have been attached in **Appendix J1.**

In the case of an area being under application, please provide the co-ordinates of the corners of the site as indicated on the lay-out map provided in Appendix A.

b) Layout alternatives

Alternative 1 (preferred alternative)		
Description	Lat (DDMMSS)	Long (DDMMSS)
The design of the substation is required to conform to Eskom's technical standards as it forms part of the national electricity supply network and must fit in with the existing network systems, technology and infrastructure. Therefore, no feasible and reasonable alternatives were identified for assessment within the development footprint determined for the substation site.	31.754623	23.162422
Alternative 2		
Description	Lat (DDMMSS)	Long (DDMMSS)
Alternative 3		
Description	Lat (DDMMSS)	Long (DDMMSS)

c) Technology alternatives

No feasible alternative technologies exist to connect the wind energy facility to the electricity grid.

Alternative 1 (preferred alternative)
Alternative technologies have not been considered as the technology to be used is dictated by Eskom's technical requirements.
Alternative 2
Alternative 3

d) Other alternatives (e.g. scheduling, demand, input, scale and design alternatives)

The substation and power line is required for a dedicated project. The choice of structure to be used for the substation and power lines will be determined in consultation with Eskom and does not significantly affect the environmental impact of the proposed development. The power line tower structures are required to be constructed and strung as a double circuit line. Where feasible on straight sections of the line, monopole structures should be utilised, which reduce visual impacts and perching opportunities for birds. These towers are also preferable over the self-supporting tower structures which are used on the existing Eskom power lines in the vicinity of the site. The line must be constructed according to the authorised standards for a power line approved by Eskom.

Alternative 1 (preferred alternative)
.
Alternative 2
Alternative 3

e) No-go alternative

This is the option of not constructing the Noblesfontein substation and power line. This option is assessed as the "no go alternative" in this Basic Assessment Report. Refer to Section D.

Paragraphs 3 – 13 below should be completed for each alternative.

3. PHYSICAL SIZE OF THE ACTIVITY

a) Indicate the physical size of the preferred activity/technology as well as alternative activities/technologies (footprints):

Alternative	**Size of the activity:**
Alternative A1[1] (preferred activity alternative):	Substation facility: approximately 250m X 250m (or 6.25ha)
Alternative A2 (if any)	m^2
Alternative A3 (if any)	m^2

or, for linear activities:

Alternative:	**Length of the activity:**
Alternative A1 (preferred activity alternative): power line	Power line: 4990m
Alternative A2 (preferred activity alternative):	m
Alternative A3 (preferred activity alternative)):	m

b) Indicate the size of the alternative sites or servitudes (within which the above footprints will occur)

The proposed 132 kV power line and substation is an alternative to what was initially authorised during the EIA Process undertaken for the Noblesfontein Wind Energy Facility.

Alternative:	Size of servitude:
Alternative A1 (preferred activity alternative)	A corridor of 300m has been assessed through the BA process. A servitude of 36m will be required along the length of the power line during construction and operation.
Alternative A1 (preferred activity alternative)	m^2

[1] "Alternative A." refer to activity, process, technology or other alternatives.

Alternative A3 (if any)	m^2

4. SITE ACCESS

Does ready access to the site exist?	**YES ✓**
If NO, what is the distance over which a new access road will be built	m

Describe the type of access road planned:

Existing or previously authorised roads in the area will be utilised to access the substation and the power line servitudes as far as possible within the assessed corridor. This includes the National road (N1 and N12), gravel district and farm roads. The access roads for the wind energy facility provide access across the extent of the farm. Where new access roads are required to access the power line route, these will be short distances of gravel road of approximately 4 meters in width. The road would be required as a service road during operation.

Include the position of the access road on the site plan and required map, as well as an indication of the road in relation to the site.

5. LOCALITY MAP

An A3 locality map must be attached to the back of this document, as Appendix A. The scale of the locality map must be relevant to the size of the development (at least 1:50 000. For linear activities of more than 25 km, a smaller scale e.g. 1:250 000 can be used. The scale must be indicated on the map.). The map must indicate the following:

- an accurate indication of the project site position as well as the positions of the alternative sites, if any;
- indication of all the alternatives identified;
- closest town(s;)
- road access from all major roads in the area;
- road names or numbers of all major roads as well as the roads that provide access to the site(s);
- all roads within a 1km radius of the site or alternative sites; and
- a north arrow;
- a legend; and
- locality GPS co-ordinates (Indicate the position of the activity using the latitude and longitude of the centre point of the site for each alternative site. The co-ordinates should be in degrees and decimal minutes. The minutes should have at least three

decimals to ensure adequate accuracy. The projection that must be used in all cases is the WGS84 spheroid in a national or local projection).

A locality map has been included as part of this report as **Appendix A.**

6. LAYOUT/ROUTE PLAN

A detailed site or route plan(s) must be prepared for each alternative site or alternative activity. It must be attached as Appendix A to this document.

The site or route plans must indicate the following:

- the property boundaries and numbers of all the properties within 50 metres of the site;
- the current land use as well as the land use zoning of the site;
- the current land use as well as the land use zoning each of the properties adjoining the site or sites;
- the exact position of each listed activity applied for (including alternatives);
- servitude(s) indicating the purpose of the servitude;
- a legend; and
- a north arrow.

A route plan has been included as part of this report as **Appendix A.**

7. SENSITIVITY MAP

The layout/route plan as indicated above must be overlain with a sensitivity map that indicates all the sensitive areas associated with the site, including, but not limited to:

- watercourses;
- the 1:100 year flood line (where available or where it is required by DWA);
- ridges;
- cultural and historical features;
- areas with indigenous vegetation (even if it is degraded or infested with alien species); and
- critical biodiversity areas.

The sensitivity map must also cover areas within 100m of the site and must be attached in Appendix A.

A sensitivity map has been included as part of this report in **Appendix A.**

8. SITE PHOTOGRAPHS

Colour photographs from the centre of the site must be taken in at least the eight major compass directions with a description of each photograph. Photographs must be attached under Appendix B to this report**.** It must be supplemented with additional photographs of relevant features on the site, if applicable.

Site photographs have been included as part of this report as **Appendix B.**

9. FACILITY ILLUSTRATION

A detailed illustration of the activity must be provided at a scale of at least 1:200 as Appendix C for activities that include structures. The illustrations must be to scale and must represent a realistic image of the planned activity. The illustration must give a representative view of the activity.

A facility illustration has been included as part of this report as **Appendix C.**

10. ACTIVITY MOTIVATION

Motivate and explain the need and desirability of the activity (including demand for the activity):

1. Is the activity permitted in terms of the property's existing land use rights?	**YES** ✓		Please explain
The site where development will be taking place has been authorised **(DEA REF NO: 12/12/20/1993/1).** The process of rezoning the property for the use as a wind farm has been completed. No rights will be affected by the registration of servitude (right of way) for the power line.			
2. Will the activity be in line with the following?			
(a) Provincial Spatial Development Framework (PSDF)	**YES** ✓		Please explain
The Northern Cape Province Spatial Development Framework (NCPSDF) makes reference to the need to ensure the availability of inexpensive energy. The section notes that in order to promote economic growth in the Northern Cape, the availability of electricity to key industrial users at critical localities at rates that enhance the competitiveness of their industries must be ensured. At the same time, the development of new sources of energy through the promotion of the adoption of energy applications that display a synergy with the Province's natural resource endowments must be encouraged. In this regard the NCPSDF notes "the development of energy sources such as wind energy, the natural gas fields, bio-fuels, etc., could be some of the means by which new economic opportunity and activity is generated in the Northern Cape". The NCPSDF also highlights the importance of close co-operation between the public and private sectors in order for the economic development potential of the Northern Cape to be realised.			
(b) Urban edge / Edge of Built environment for the area		**NO** ✓	Please explain
The site is located approximately 34 km south of the urban edge related to the town of			

Victoria West. The site is proposed to be located outside of an urban area. The property has, however, been through a process to rezone to special use (i.e. wind farm). The wind farm is considered an industrial land use.			
(c) Integrated Development Plan (IDP) and Spatial Development Framework (SDF) of the Local Municipality (e.g. would the approval of this application compromise the integrity of the existing approved and credible municipal IDP and SDF?).	**YES ✓**		Please explain
The main IDP and SDP objective of the Pixley ka Seme District Municipality is to provide access to electricity to all households in the district by 2014. To achieve this, the district aims at fast-tracking the delivery of free basic electricity and co-ordinate the maintenance and upgrading of existing electricity infrastructure. The construction of the proposed wind turbines will be meeting the objective.			
(d) Approved Structure Plan of the Municipality	**YES ✓**		Please explain
The municipality aims at ensuring that all citizens have access to basic services such as electricity, and this project will be addressing such issues in the local municipality.			
(e) An Environmental Management Framework (EMF) adopted by the Department (e.g. Would the approval of this application compromise the integrity of the existing environmental management priorities for the area and if so, can it be justified in terms of sustainability considerations?)		**NO ✓**	Please explain
The Municipality does not have an EMF, however an Integrated Environmental Management Programme was compiled by the District Municipality to ensure that land use decision making must be taken with adequate environmental resource information is available in other to ensure sustainable and appropriate environmental management to the benefit of its residents. One of the set goals for the Plan is ensuring that all environmental issues are appropriately addressed. The substation and power line will be supporting the renewable energy project and will contribute to clean energy generation as a sustainable resource and holds huge benefits for the local region and the country as a whole. Renewable resources generally operate from an unlimited resource base and, as such, can increasingly contribute towards a long-term sustainable energy future, the project aims on achieving the set goals for the Plan through addressing all possible environmental issues associated with the development and address measure to mitigate environmental issues.			
(f) Any other Plans (e.g. Guide Plan)		**NO ✓**	Please explain
3. Is the land use (associated with the activity being applied for) considered within the timeframe intended by the existing approved SDF agreed to by the relevant environmental authority (i.e. is the proposed development in line with the projects and programmes identified as priorities within the credible IDP)?	**YES ✓**		Please explain
The main IDP and SDP objective of the Pixley ka Seme District Municipality is to provide access to electricity to all households in the district by 2014. To achieve this, the District aims at fast-tracking the delivery of free basic electricity and co-ordinate the maintenance and upgrading of existing electricity infrastructure. The construction of the proposed wind energy facility – and this			

associated infrastructure will assist in meeting the objective.			
4. Does the community/area need the activity and the associated land use concerned (is it a societal priority)? (This refers to the strategic as well as local level (e.g. development is a national priority, but within a specific local context it could be inappropriate.)	**YES ✓**		Please explain
The evacuation of additional power into the Eskom grid will serve to improve the stability of the grid for the immediate area, assist the government in achieving the goal of 17 GW renewable energy as part of the electricity generation technology mix by 2030, and assist in the reduction in the need to mine non-renewable resources such as coal for conventional power generation. The proposed activity is not a necessarily a societal priority for the community; however the wind farm development will benefit the local community through job creation, skills development opportunities and training, which will in turn reduce poverty level that the area is currently facing; strengthen electricity supply for the area.			
5. Are the necessary services with adequate capacity currently available (at the time of application), or must additional capacity be created to cater for the development? (Confirmation by the relevant Municipality in this regard must be attached to the final Basic Assessment Report as Appendix I.)		**NO ✓**	Please explain
The Eskom grid infrastructure in the immediate vicinity has the spare capacity to take the power from this wind energy facility. The on-site substation and power line will be the infrastructure which would support the connection of the new wind farm to the Eskom grid. The construction of the substation and power line infrastructure will not place additional pressure on the local area or Municipality during construction or operation.			
6. Is this development provided for in the infrastructure planning of the municipality, and if not what will the implication be on the infrastructure planning of the municipality (priority and placement of services and opportunity costs)? (Comment by the relevant Municipality in this regard must be attached to the final Basic Assessment Report as Appendix I.)	**YES ✓**		Please explain
The proposed project is to be developed by a private developer. . The construction of the substation and power line infrastructure will not place additional pressure on the Municipality's infrastructure during construction or operation. The project will not have any implications for the municipality but assist them in their infrastructural planning priorities through the increased electricity capacity.			
7. Is this project part of a national programme to address an issue of national concern or importance?	**YES ✓**		Please explain
The current electricity imbalances in South Africa highlight the significant role that renewable energy can play in terms of power supplementation. Given that renewables can generally be deployed in a decentralised manner close to consumers, they offer the opportunity for improving grid strength and supply quality, while reducing expensive transmission and distribution losses. At present, South Africa is some way off from exploiting the diverse gains from renewable energy and from achieving a considerable market share in the industry. In order to meet the long-term goal of a sustainable renewable energy industry, a target of 17.8 GW of renewables by			

2030 has been set by the Department of Energy (DoE) within the Integrated Resource Plan (IRP) 2010 and incorporated in the IPP Procurement Programme. This energy will be produced from various renewable energy technologies including wind energy facilities. The proposed project will facilitate the connection of up to 132MW of wind energy facility to the electricity grid.

8. Do location factors favour this land use (associated with the activity applied for) at this place? (This relates to the contextualisation of the proposed land use on this site within its broader context.)	**YES** ✓		Please explain

Site access

The site can be accessed easily via existing access roads from N12 road.

Gradient

The proposed site is level and this reduces the need for extensive earthworks associated with the levelling of a site, thereby minimising environmental impacts. The proposed area for the proposed infrastructures is generally on a flat location with slopes less than 5 degrees.

Grid Connection

The proposed facility is in a close proximity to the proposed Noblesfontein Wind Energy Facility as well as Eskom's grid.

9. Is the development the best practicable environmental option for this land/site?	**YES** ✓		Please explain

The Substation and power line will be supporting the Noblesfontein Wind Energy Facility (renewable energy project), which is the best practicable environmental option for the type of land since the proposed development can allow the current land-use to continue on the rest of the farm portion (i.e. the rest of the land which is not utilised for the facility).

10. Will the benefits of the proposed land use/development outweigh the negative impacts of it?	**YES** ✓		Please explain

» No environmental fatal flaws have been identified to be associated with the project at this stage in the project. The negative impacts for the project include:
  - Clearing of natural vegetation for the proposed footprint area, increasing the potential for soil erosion, deterioration of the biotic, abiotic and economic properties of soil, and the long-term loss of natural vegetation;

» Most of these impacts can be managed and mitigated as outlined in the Impact Assessment and Environmental Management Programme.

» Positive impacts of the proposed project include:
  - Connection of renewable energy facilities to the national grid, thereby facilitating the diversification of power generation technologies which comprise the country's power generation mix.
  - Stimulation of the local economy through the supply of a reliable electricity supply, which will assist in the generation of provision of services.

It is considered reasonable that the benefits of the proposed land use/development will outweigh the negative impacts.

11. Will the proposed land use/development set a precedent for similar activities in the area (local municipality)?	**YES** ✓		Please explain

The proposed Substation and Power Line are supporting infrastructures to the Noblesfontein Wind Energy Facility. There are similar developments being proposed in the Ubuntu Local Municipality (Modderfontein wind energy facility and Noblesfontein solar facility) which have

received environmental authorisations; however none have been developed yet in the area. It is considered that the precedent for the development of renewable energy projects in this area and within this Municipality has already been set, and local support has been shown by landowners, and the Municipality.			
12. Will any person's rights be negatively affected by the proposed activity/ies?		**NO** ✓	Please explain
The proposed project will be taking place in a privately owned land and will not in any way infringe on any person's rights.			
13. Will the proposed activity/ies compromise the "urban edge" as defined by the local municipality?		**NO** ✓	Please explain
The site is located approximately 45 km north-west of the urban edge related to the town of Victoria West. The site is proposed outside an urban area **and zoned for special use (Wind Farm)**.			
14. Will the proposed activity/ies contribute to any of the 17 Strategic Integrated Projects (SIPS)?	**YES** ✓		Please explain
SIP 8 looks at green energy in support of South African economy; SIP 9 describes Electricity Generation to support socio-economic development; and SIP 10 looks at the expansion of electricity Transmission and Distribution to support economic development. Therefore the proposed activity will contribute to the SIPS. The proposed project will facilitate the connection of a wind energy facility to the electricity grid.			
15. What will the benefits be to society in general and to the local communities?			Please explain
The main purpose of the substation and power lines is to connect the authorised Noblesfontein Wind Energy Facility to the electricity grid. As the wind energy facility will need to be built and operated this will create employment opportunities for members of local communities. The increased economic benefit to the local community will improve the sustainability of the area and reduce the unemployment rate. In addition, a community trust will be established during the operational phase of the wind energy facility. This will benefit the local community.			
16. Any other need and desirability considerations related to the proposed activity?			Please explain
The area is in need of infrastructure which will benefit the municipal economy.			
17. How does the project fit into the National Development Plan for 2030?			Please explain
One of the National Development Plan for 2030 is the transition to low carbon energy through speeding up and expanding renewable energy. This project will fit into this vision since it aims on increasing electricity supply through carbon-free methods. The proposed project will facilitate the connection of wind energy facility to the electricity grid.			
18. Please describe how the general objectives of Integrated Environmental Management as set out in section 23 of NEMA have been taken into account.			
The general objectives of Integrated Environmental Management have been taken into account for this Basic Assessment report by means of identifying, predicting and evaluating the actual and potential impacts on the environment, socio-economic conditions and cultural heritage component. The risks, consequences, alternatives as well as options for mitigation of activities have also been considered with a view to minimise negative impacts, maximise benefits, and promote compliance with the principles of environmental management.			
19. Please describe how the principles of environmental management as set out in section 2 of NEMA have been taken into account.			

The principles of NEMA have been considered in this assessment through compliance with the requirements of the relevant legislation in undertaking the assessment of potential impacts, as well as through the implementation of the principle of sustainable development where appropriate mitigation measures have been recommended for impacts which cannot be avoided. In addition, the successful implementation and appropriate management of this proposed project will aid in achieving the principle of minimisation of pollution and environmental degradation.

This process has been undertaken in a transparent manner and all effort has been made to involve interested and affected parties, stakeholders and relevant Organs of State such that an informed decision regarding the project can be made by the Regulating Authority.

11. APPLICABLE LEGISLATION, POLICIES AND/OR GUIDELINES

List all legislation, policies and/or guidelines of any sphere of government that are applicable to the application as contemplated in the EIA regulations, if applicable. Refer to **Table 1.4** below.

Table 1.4: Applicable Legislation, Policies and/or Guidelines

Legislation	Applicable Requirements	Relevant Authority	Compliance Requirements
National Legislation			
National Environmental Management Act (Act No 107 of 1998)	The Basic Assessment Regulations have been promulgated in terms of Chapter 5 of the Act. Listed activities which may not commence without an environmental authorisation are identified within these Regulations. In terms of S24(1) of NEMA, the potential impact on the environment associated with these listed activities must be assessed and reported on to the competent authority charged by NEMA with granting of the relevant environmental authorisation. In terms of GN R543, R544 and R546 of 18 June 2010, a Basic Assessment Process is required to be undertaken for the proposed project.	Department of Environmental Affairs – competent authority Department of Environmental and Nature Conservation (DENC)- commenting authority	The listed activities triggered by the proposed substation have been identified and assessed in the Basic Assessment Process being undertaken. This Basic Assessment Report will be submitted to the competent and commenting authority in support of the application for authorisation.
National Environmental Management Act (Act No 107 of 1998)	In terms of the Duty of Care Provision in S28(1) the project proponent must ensure that reasonable measures are taken throughout the life cycle of this project to ensure that any pollution or degradation of	Department of Environmental Affairs	While no permitting or licensing requirements arise directly by virtue of the proposed project, this

Legislation	Applicable Requirements	Relevant Authority	Compliance Requirements
	the environment associated with this project is avoided, stopped or minimised. In terms of NEMA, it has become the legal duty of a project proponent to consider a project holistically, and to consider the cumulative effect of a variety of impacts.		section has found application during the Basic Assessment Process through the consideration of potential impacts (cumulative, direct, and indirect). It will continue to apply throughout the life cycle of the project.
Environment Conservation Act (Act No 73 of 1989)	National Noise Control Regulations (GN R154 dated 10 January 1992)	Department of Environmental Affairs Department of Environmental and Nature Conservation (DENC)- Local Authorities	Noise impacts are expected to be associated with the construction phase of the project and are not likely to present a significant intrusion to the local community. Therefore is no requirement for a noise permit in terms of the legislation. On-site activities should be limited to 6:00am - 6:00pm, Monday – Saturday (excluding public holidays). Should activities need to be undertaken outside of

Legislation	Applicable Requirements	Relevant Authority	Compliance Requirements
			these times, the surrounding communities will need to be notified and appropriate approval will be obtained from DEA and the Local Municipality.
National Water Act (Act No 36 of 1998)	Water uses under S21 of the Act must be licensed, unless such water use falls into one of the categories listed in S22 of the Act or falls under the general authorisation (and then registration of the water use is required). Consumptive water uses may include the taking of water from a water resource - Sections 21a and b. Non-consumptive water uses may include impeding or diverting of flow in a water course - Section 21c; and altering of bed, banks or characteristics of a watercourse - Section 21i.	Department of Water Affairs Provincial Department of Water Affairs	A water use license (WUL) is required to be obtained if wetlands or drainage lines are impacted on, or if infrastructure lies within 500m of such features. Pans occur on the project site, but outside of the development footprint.
Minerals and Petroleum Resources Development Act (Act No 28 of 2002)	A mining permit or mining right may be required where a mineral in question is to be mined (e.g. materials from a borrow pit) in accordance with the provisions of the Act. Requirements for Environmental Management Programmes and Environmental Management Plans are set out in S39 of the Act. S53 Department of Mineral Resources: Approval from the Department of Mineral Resources (DMR) may be required to use land surface contrary to the objects of	Department of Mineral Resources	As no borrow pits are expected to be required for the construction of the facility, no mining permit or right is required to be obtained.

Legislation	Applicable Requirements	Relevant Authority	Compliance Requirements
	the Act in terms of section 53 of the Mineral and Petroleum Resources Development Act, (Act No 28 of 2002): In terms of the Act approval from the Minister of Mineral Resources is required to ensure that proposed activities do not sterilise a mineral resources that might occur on site.		
National Environmental Management: Air Quality Act (Act No 39 of 2004)	Measures in respect of dust control (S32) – no regulations promulgated yet. Measures to control noise (S34) - no regulations promulgated yet.	Department of Environmental Affairs	No permitting or licensing requirements arise from this legislation. The Act provides that an air quality officer may require any person to submit an atmospheric impact report if there is reasonable suspicion that the person has failed to comply with the Act.
National Heritage Resources Act (Act No 25 of 1999)	» Stipulates assessment criteria and categories of heritage resources according to their significance (S7). » Provides for the protection of all archaeological and palaeontological sites, and meteorites (S35). » Provides for the conservation and care of cemeteries and graves by SAHRA where this is not the responsibility of any other authority (S36). » Lists activities which require developers any person who intends to undertake to notify the responsible	South African Heritage Resources Agency	An HIA and PIA has been undertaken as part of the Basic Assessment Process to identify heritage sites (See Appendix D2)

Legislation	Applicable Requirements	Relevant Authority	Compliance Requirements
	heritage resources authority and furnish it with details regarding the location, nature, and extent of the proposed development (S38). » Requires the compilation of a Conservation Management Plan as well as a permit from SAHRA for the presentation of archaeological sites as part of tourism attraction (S44).		
National Environmental Management: Biodiversity Act (Act No 10 of 2004)	» Provides for the MEC/Minister to identify any process or activity in such a listed ecosystem as a threatening process (S53) » A list of threatened and protected species has been published in terms of S 56(1) - Government Gazette 29657. » Three government notices have been published, i.e. GN R 150 (Commencement of Threatened and Protected Species Regulations, 2007), GN R 151 (Lists of critically endangered, vulnerable and protected species) and GN R 152 (Threatened or Protected Species Regulations). » Provides for listing threatened or protected ecosystems, in one of four categories: critically endangered (CR), endangered (EN), vulnerable (VU) or protected. The first national list of threatened terrestrial ecosystems has been gazetted, together with supporting information on the listing process including the purpose and rationale for listing ecosystems, the criteria used to identify listed ecosystems, the implications of listing ecosystems,	Department of Environmental Affairs	As the applicant will not carry out any restricted activity, as is defined in S1 of the Act, no permit is required to be obtained in this regard. Specialist flora and fauna studies have been undertaken as part of the Basic Assessment Process. As such the potentially occurrence of critically endangered, endangered, vulnerable, and protected species and the potential for them to be affected has been considered.

Legislation	Applicable Requirements	Relevant Authority	Compliance Requirements
	and summary statistics and national maps of listed ecosystems (National Environmental Management: Biodiversity Act: National list of ecosystems that are threatened and in need of protection, (G 34809, GN 1002), 9 December 2011). » This Act also regulates alien and invader species. » Under this Act, a permit would be required for any activity which is of a nature that may negatively impact on the survival of a listed protected species.		
Conservation of Agricultural Resources Act (Act No 43 of 1983)	» Prohibition of the spreading of weeds (S5) » Classification of categories of weeds & invader plants (Regulation 15 of GN R1048) & restrictions in terms of where these species may occur. » Requirement & methods to implement control measures for alien and invasive plant species (Regulation 15E of GN R1048).	Department of Agriculture	This Act will find application throughout the life cycle of the project. In this regard, soil erosion prevention and soil conservation strategies must be developed and implemented. In addition, a weed control and management plan must be implemented. The permission of agricultural authorities will be required if the Project requires the draining of vleis, marshes or water sponges on land outside urban areas.

Legislation	Applicable Requirements	Relevant Authority	Compliance Requirements
National Forests Act (Act No. 84 of 1998)	According to this act, the Minister has declared a tree, group of trees, woodland or a species of trees as protected. The prohibitions provide that 'no person may cut, damage, disturb, destroy or remove any protected tree, or collect, remove, transport, export, purchase, sell, donate or in any other manner acquire or dispose of any protected tree, except under a licence granted by the Minister'.	National Department of Forestry	There are no protected trees in the study area.
National Veld and Forest Fire Act (Act 101 of 1998)	In terms of S12 the applicant must ensure that the firebreak is wide and long enough to have a reasonable chance of preventing the fire from spreading, not causing erosion, and is reasonably free of inflammable material. In terms of S17, the applicant must have such equipment, protective clothing, and trained personnel for extinguishing fires.	Department of Agriculture, Forestry and Fisheries (DAFF)	While no permitting or licensing requirements arise from this legislation, this act will find application during the construction and operational phase of the project.
Hazardous Substances Act (Act No 15 of 1973)	This Act regulates the control of substances that may cause injury, or ill health, or death due to their toxic, corrosive, irritant, strongly sensitising or inflammable nature or the generation of pressure thereby in certain instances and for the control of certain electronic products. To provide for the rating of such substances or products in relation to the degree of danger; to provide for the prohibition and control of the importation, manufacture, sale, use, operation, modification, disposal or dumping of such substances and products.	Department of Health	It is necessary to identify and list all the Group I, II, III, and IV hazardous substances that may be on the site and in what operational context they are used, stored or handled. If applicable, a license is required to be obtained from the Department of Health.

Legislation	Applicable Requirements	Relevant Authority	Compliance Requirements
	Group I and II: Any substance or mixture of a substance that might by reason of its toxic, corrosive etc, nature or because it generates pressure through decomposition, heat or other means, cause extreme risk of injury etc., can be declared as Group I or Group II substance Group IV: any electronic product; and Group V: any radioactive material. The use, conveyance, or storage of any hazardous substance (such as distillate fuel) is prohibited without an appropriate license being in force.		
Development Facilitation Act (Act No 67 of 1995)	Provides for the overall framework and administrative structures for planning throughout the Republic. S (2 - 4) provides general principles for land development and conflict resolution.	Local Municipality	The applicant must submit a land development application in the prescribed manner and form as provided for in the Act. A land development applicant who wishes to establish a land development area must comply with procedures set out in the Act.
Subdivision of Agricultural Land Act (Act No 70 of 1970)	Details land subdivision requirements and procedures. Applies for subdivision of all agricultural land in the province	Department of Agriculture	Subdivision will have to be in place prior to any subdivision approval in terms of S24 and S17 of the Act.
National Environmental Management:	The Minister may by notice in the *Gazette* publish a list	National Department	As no waste disposal site is

Legislation	Applicable Requirements	Relevant Authority	Compliance Requirements
Waste Act, 2008 (Act No. 59 of 2008)	of waste management activities that have, or are likely to have, a detrimental effect on the environment. The Minister may amend the list by – » Adding other waste management activities to the list. » Removing waste management activities from the list. » Making other changes to the particulars on the list. In terms of the Regulations published in terms of this Act (GN 718), A Basic Assessment or Environmental Impact Assessment is required to be undertaken for identified listed activities. Any person who stores waste must at least take steps, unless otherwise provided by this Act, to ensure that: » The containers in which any waste is stored, are intact and not corroded or in » any other way rendered unlit for the safe storage of waste. » Adequate measures are taken to prevent accidental spillage or leaking. » The waste cannot be blown away. » Nuisances such as odour, visual impacts and breeding of vectors do not arise; and	of Water and Environmental Affairs Provincial Department of Environmental Affairs (general waste)	to be associated with the proposed project, no permit is required in this regard. Waste handling, storage and disposal during construction and operation is required to be undertaken in accordance with the requirements of the Act, as detailed in the EMP (refer to Appendix G). The volumes of waste to be generated and stored on the site during construction and operation of the facility will not require a waste license (provided these remain below the prescribed thresholds).

Legislation	Applicable Requirements	Relevant Authority	Compliance Requirements
	» Pollution of the environment and harm to health are prevented.		
National Road Traffic Act (Act No 93 of 1996)	» The technical recommendations for highways (TRH 11): "Draft Guidelines for Granting of Exemption Permits for the Conveyance of Abnormal Loads and for other Events on Public Roads" outline the rules and conditions which apply to the transport of abnormal loads and vehicles on public roads and the detailed procedures to be followed in applying for exemption permits are described and discussed. » Legal axle load limits and the restrictions imposed on abnormally heavy loads are discussed in relation to the damaging effect on road pavements, bridges, and culverts. » The general conditions, limitations, and escort requirements for abnormally dimensioned loads and vehicles are also discussed and reference is made to speed restrictions, power/mass ratio, mass distribution, and general operating conditions for abnormal loads and vehicles. Provision is also made for the granting of permits for all other exemptions from the requirements of the National Road Traffic Act and the relevant Regulations.	» South African National Roads Agency Limited (national roads) » Provincial Department of Transport	An abnormal load/vehicle permit may be required to transport the various components to site for construction. These include route clearances and permits will be required for vehicles carrying abnormally heavy or abnormally dimensioned loads. Depending on the trailer configuration and height when loaded, some of the substation components may not meet specified dimensional limitations (size and weight).
Promotion of Access to Information Act (Act No 2 of 2000)	All requests for access to information held by state or private body are provided for in the Act under S11.	Department of Environmental Affairs	No permitting or licensing requirements.
Promotion of Administrative Justice Act (Act No 3 of 2000)	In terms of S3 the government is required to act lawfully and take procedurally fair, reasonable, and rational decisions.	Department of Environmental Affairs	No permitting or licensing requirements.

Legislation	Applicable Requirements	Relevant Authority	Compliance Requirements
	Interested and affected parties have a right to be heard.		
Provincial Legislation			
Northern Cape Nature Conservation Act, Act No. 9 of 2009	This Act provides for the sustainable utilisation of wild animals, aquatic biota and plants; provides for the implementation of the Convention on International Trade in Endangered Species of Wild Fauna and Flora; provides for offences and penalties for contravention of the Act; provides for the appointment of nature conservators to implement the provisions of the Act; and provides for the issuing of permits and other authorisations. Amongst other regulations, the following may apply to the current project: » Boundary fences may not be altered in such a way as to prevent wild animals from freely moving onto or off of a property; » Aquatic habitats may not be destroyed or damaged; » The owner of land upon which an invasive species is found (plant or animal) must take the necessary steps to eradicate or destroy such species. » The Act provides lists of protected species for the Province.	Provincial Department of Environmental Affairs	Permitting or licensing requirements arise from this legislation for the proposed activities to be undertaken for the proposed project as there are a succulent plants species on the proposed development site. A permit is required to remove the plants.

12.WASTE, EFFLUENT, EMISSION AND NOISE MANAGEMENT

a) Solid waste management (substation & power line)

Will the activity produce solid construction waste during the construction/initiation phase?	**YES** ✓	
If YES, what estimated quantity will be produced per month?	Unknown at this stage	

How will the construction solid waste be disposed of (describe)?

It is anticipated that construction waste will be comprised mainly of spoil material from cleaning activities as well as metal and cabling off-cuts, as well as spoil material from foundation excavation. Non-recyclable waste will be trucked to the nearest registered waste disposal facility for appropriate disposal in Victoria West or surrounding areas. .

Where will the construction solid waste be disposed of (describe)?

In order to comply with legal requirements should there be excess solid construction waste after recycling options have been exhausted, the waste will be transported to the nearest registered waste disposal facility for appropriate disposal in Victoria West or surrounding areas.

Will the activity produce solid waste during its operational phase?		**NO** ✓
If YES, what estimated quantity will be produced per month?		

How will the solid waste be disposed of (describe)?

If the solid waste will be disposed of into a municipal waste stream, indicate which registered landfill site will be used.

Where will the solid waste be disposed of if it does not feed into a municipal waste stream (describe)?

If the solid waste (construction or operational phases) will not be disposed of in a registered landfill site or be taken up in a municipal waste stream, then the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

Can any part of the solid waste be classified as hazardous in terms of the NEM:WA?	YES	NO

If YES, inform the competent authority and request a change to an application for scoping and EIA. An application for a waste permit in terms of the NEM:WA must also be submitted with this application.

Is the activity that is being applied for a solid waste handling or treatment facility?	YES	NO

If YES, then the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA. An application for a waste permit in terms of the NEM:WA must also be submitted with this application.

b) Liquid effluent (substation & power line)

Will the activity produce effluent, other than normal sewage, that will be disposed of in a municipal sewage system?		**NO ✓**
If YES, what estimated quantity will be produced per month?	m^3	
Will the activity produce any effluent that will be treated and/or disposed of on site?		**NO ✓**

If YES, the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

Will the activity produce effluent that will be treated and/or disposed of at another facility?		**NO ✓**

If YES, provide the particulars of the facility:

Facility name:			
Contact person:			
Postal address:			
Postal code:			
Telephone:		**Cell:**	
E-mail:		**Fax:**	

Describe the measures that will be taken to ensure the optimal reuse or recycling of waste water, if any:

c) Emissions into the atmosphere (substation & power line)

Will the activity release emissions into the atmosphere other that exhaust emissions and dust associated with construction phase activities?	**NO ✓**
If YES, is it controlled by any legislation of any sphere of government?	

If YES, the applicant must consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

If NO, describe the emissions in terms of type and concentration:

During the construction phase, it is expected that there will be short term dust generation and emissions from vehicles and machinery. However the dust and emissions will have medium - short term duration and have limited impact in terms of extent and severity the project will be running concurrently within the wind energy facility footprint. Appropriate dust suppression measures will be implemented to reduce the impacts. It is recommended that construction vehicles be serviced and kept in good mechanical condition to minimise possible exhaust emission.

d) Waste permit

Will any aspect of the activity produce waste that will require a waste permit in terms of the NEM:WA?	**NO ✓**

If YES, please submit evidence that an application for a waste permit has been submitted to the competent authority

e) Generation of noise

Will the activity generate noise?	**NO ✓**
If YES, is it controlled by any legislation of any sphere of government?	

If YES, the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

If NO, describe the noise in terms of type and level:

Short term noise impacts are anticipated during the construction phase of the substation and power line. However construction of the proposed facility will take place concurrently with the wind energy project, resulting in minimal noise as opposed to the noise resulting from the construction of the wind facility. . In order to minimise the impacts of noise during the construction phase, construction activities should be restricted to between 06H00 and 18H00 Monday to Friday, and 08h00-13h00 on Saturdays. This is required to avoid noise disturbances outside normal working hours. All construction equipment must be maintained and kept in good working order to minimise associated noise impacts. Should construction work be required to be undertaken outside of these times, surrounding sensitive receptors should be timeously informed. The applicant must adhere to the relevant noise control legislation as well as SANS 10103.

13.WATER USE

Please indicate the source(s) of water that will be used for the activity by ticking the appropriate box(es):

Municipal ✓	Water board	Groundwater	River, stream, dam or lake	Other	The activity will not use water

If water is to be extracted from groundwater, river, stream, dam, lake or any other natural feature, please indicate the volume that will be extracted per month:		
Does the activity require a water use authorisation (general authorisation or water use license) from the Department of Water Affairs?		**NO** ✓
If YES, please provide proof that the application has been submitted to the Department of Water Affairs.		

14. ENERGY EFFICIENCY

Describe the design measures, if any, that have been taken to ensure that the activity is energy efficient:

N/A

Describe how alternative energy sources have been taken into account or been built into the design of the activity, if any:

N/A

SECTION B: SITE/AREA/PROPERTY DESCRIPTION

Important notes:

1. For linear activities (pipelines, etc.) as well as activities that cover very large sites, it may be necessary to complete this section for each part of the site that has a significantly different environment. In such cases please complete copies of Section B and indicate the area, which is covered by each copy No. on the Site Plan.

Section B Copy No. (e.g. A): [ ]

2. Paragraphs 1 - 6 below must be completed for each alternative.

3. Has a specialist been consulted to assist with the completion of this section? [ ] **NO ✓**

If YES, please complete the form entitled "Details of specialist and declaration of interest" for each specialist thus appointed and attach it in Appendix I. All specialist reports must be contained in Appendix D.

Property description/physical address:

Province	Northern Cape Province
District Municipality	Pixley ka Seme District Municipality
Local Municipality	Ubuntu Local Municipality
Ward Number(s)	Ward 3
Farm name and number	Noblesfontein 227
Portion number	0
SG Code	C08000000000022700000

Where a large number of properties are involved (e.g. linear activities), please attach a full list to this application including the same information as indicated above.

Current land-use zoning as per local municipality IDP/records:

Special use (Wind Farm)

In instances where there is more than one current land-use zoning, please attach a list of current land use zonings that also indicate which portions each use pertains to, to this application.

Is a change of land-use or a consent use application required? **NO ✓**

1. GRADIENT OF THE SITE

Indicate the general gradient of the site **(Substation).**

Alternative S1:

Flat	1:50 – 1:20	**1:20 – 1:15 ✓**	1:15 – 1:10	1:10 – 1:7,5	1:7,5 – 1:5	Steeper than 1:5

Alternative S2 (if any):

Flat	1:50 – 1:20	1:20 – 1:15	1:15 – 1:10	1:10 – 1:7,5	1:7,5 – 1:5	Steeper than 1:5

Alternative S3 (if any):

Flat	1:50 – 1:20	1:20 – 1:15	1:15 – 1:10	1:10 – 1:7,5	1:7,5 – 1:5	Steeper than 1:5

1. GRADIENT OF THE SITE

Indicate the general gradient of the site **(Power Line).**

Alternative S1:

Flat ✓	1:50 – 1:20	1:20 – 1:15	1:15 – 1:10	1:10 – 1:7,5	1:7,5 – 1:5	Steeper than 1:5

Alternative S2 (if any):

Flat	1:50 – 1:20	1:20 – 1:15	1:15 – 1:10	1:10 – 1:7,5	1:7,5 – 1:5	Steeper than 1:5

Alternative S3 (if any):

Flat	1:50 – 1:20	1:20 – 1:15	1:15 – 1:10	1:10 – 1:7,5	1:7,5 – 1:5	Steeper than 1:5

2. LOCATION IN LANDSCAPE

Indicate the landform(s) that best describes the site**:**

Substation and Power Line

2.1 Ridgeline		2.4 Closed valley		**2.7 Undulating plain / low hills**	✓
2.2 Plateau	✓	2.5 Open valley		2.8 Dune	
2.3 Side slope of hill/mountain		**2.6 Plain**	✓	2.9 Seafront	

3. GROUNDWATER, SOIL AND GEOLOGICAL STABILITY OF THE SITE

Is the site(s) located on any of the following:

Substation

	Alternative S1:		Alternative S2 (if any):		Alternative S3 (if any):	
Shallow water table (less than 1.5m deep)		**NO** ✓	YES	NO	YES	NO
Dolomite, sinkhole or doline areas		**NO** ✓	YES	NO	YES	NO
Seasonally wet soils (often close to water bodies)		**NO** ✓	YES	NO	YES	NO
Unstable rocky slopes or steep slopes with loose soil		**NO** ✓	YES	NO	YES	NO
Dispersive soils (soils that dissolve in water)		**NO** ✓	YES	NO	YES	NO
Soils with high clay content (clay fraction more than 40%)		**NO** ✓	YES	NO	YES	NO
Any other unstable soil or geological feature		**NO** ✓	YES	NO	YES	NO
An area sensitive to erosion	**YES** ✓		YES	NO	YES	NO

If you are unsure about any of the above or if you are concerned that any of the above aspects may be an issue of concern in the application, an appropriate specialist should be appointed to assist in the completion of this section. Information in respect of the above will often be available as part of the project information or at the planning sections of local authorities. Where it exists, the 1:50 000 scale Regional Geotechnical Maps prepared by the Council for Geo Science may also be consulted.

3. GROUNDWATER, SOIL AND GEOLOGICAL STABILITY OF THE SITE

Is the site(s) located on any of the following?

Power Line

	Alternative S1:		Alternative S2 (if any):		Alternative S3 (if any):	
Shallow water table (less than 1.5m deep)		**NO** ✓	YES	NO	YES	NO
Dolomite, sinkhole or doline areas		**NO** ✓	YES	NO	YES	NO

Seasonally wet soils (often close to water bodies)		**NO** ✓	YES	NO	YES	NO
Unstable rocky slopes or steep slopes with loose soil		**NO** ✓	YES	NO	YES	NO
Dispersive soils (soils that dissolve in water)		**NO** ✓	YES	NO	YES	NO
Soils with high clay content (clay fraction more than 40%)		**NO** ✓	YES	NO	YES	NO
Any other unstable soil or geological feature		**NO** ✓	YES	NO	YES	NO
An area sensitive to erosion	**YES** ✓		YES	NO	YES	NO

If you are unsure about any of the above or if you are concerned that any of the above aspects may be an issue of concern in the application, an appropriate specialist should be appointed to assist in the completion of this section. Information in respect of the above will often be available as part of the project information or at the planning sections of local authorities. Where it exists, the 1:50 000 scale Regional Geotechnical Maps prepared by the Council for Geo Science may also be consulted.

4. GROUNDCOVER

Substation

Indicate the types of groundcover present on the site. The location of all identified rare or endangered species or other elements should be accurately indicated on the site plan(s).

Natural veld - good condition[E] ✓	**Natural veld with scattered aliens[E]** ✓	Natural veld with heavy alien infestation[E]	Veld dominated by alien species[E]	Gardens
Sport field	Cultivated land	Paved surface	Building or other structure	Bare soil

If any of the boxes marked with an "[E] "is ticked, please consult an appropriate specialist to assist in the completion of this section if the environmental assessment practitioner doesn't have the necessary expertise.

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Power Line

Indicate the types of groundcover present on the site. The location of all identified rare or endangered species or other elements should be accurately indicated on the site plan(s).

Natural veld - good condition[E] ✓	**Natural veld with scattered aliens[E] ✓**	Natural veld with heavy alien infestation[E]	Veld dominated by alien species[E]	Gardens
Sport field	Cultivated land	Paved surface	Building or other structure	Bare soil

If any of the boxes marked with an "[E] "is ticked, please consult an appropriate specialist to assist in the completion of this section if the environmental assessment practitioner doesn't have the necessary expertise.

5. SURFACE WATER

Substation

Indicate the surface water present on and or adjacent to the site and alternative sites?

Perennial River		**NO ✓**	
Non-Perennial River		**NO ✓**	
Permanent Wetland		**NO ✓**	
Seasonal Wetland		**NO ✓**	
Artificial Wetland		**NO ✓**	
Estuarine / Lagoonal wetland		**NO ✓**	

If any of the boxes marked YES or UNSURE is ticked, please provide a description of the relevant watercourse.

Non-perennial river: the site has drainage lines but proposed infrastructures has been aligned not to affect those drained lines

5. SURFACE WATER

Power Line

Indicate the surface water present on and or adjacent to the site and alternative sites?

Perennial River		**NO ✓**	

Non-Perennial River	**YES** ✓		
Permanent Wetland		**NO** ✓	
Seasonal Wetland		**NO** ✓	
Artificial Wetland		**NO** ✓	
Estuarine / Lagoonal wetland		**NO** ✓	

If any of the boxes marked YES or UNSURE is ticked, please provide a description of the relevant watercourse.

Non-perennial drainage lines are intercepted at approximately 5 intervals along the route. Mitigation measures will be put in place to ensure that proposed infrastructure will not have a direct impact upon drainage lines.

6. LAND USE CHARACTER OF SURROUNDING AREA

Substation and power line

Indicate land uses and/or prominent features that currently occur within a 500m radius of the site and give description of how this influences the application or may be impacted upon by the application:

Natural area ✓	Dam or reservoir	Polo fields
Low density residential	Hospital/medical centre	Filling station [H]
Medium density residential	School	Landfill or waste treatment site
High density residential	Tertiary education facility	Plantation
Informal residential[A]	Church	**Agriculture** ✓
Retail commercial & warehousing	Old age home	River, stream or wetland
Light industrial	Sewage treatment plant[A]	Nature conservation area
Medium industrial [AN]	Train station or shunting yard [N]	**Mountain, koppie or ridge**
Heavy industrial [AN]	**Railway line** [N]	Museum
Power station	Major road (4 lanes or more) [N]	Historical building
Office/consulting room	Airport [N]	Protected Area
Military or police base/station/compound	Harbour	Graveyard
Spoil heap or slimes dam[A]	Sport facilities	Archaeological site
Quarry, sand or borrow pit	Golf course	Other:

If any of the boxes marked with an "N "are ticked, how will this impact / be impacted upon by the proposed activity?

N/A

If any of the boxes marked with an "An" are ticked, how will this impact / be impacted upon by the proposed activity? Specify and explain:

There is currently construction of the wind energy farm facility and the proposed development will have minimal impact compared to the construction under way.

If any of the boxes marked with an "H" are ticked, how will this impact / be impacted upon by the proposed activity? Specify and explain:

N/A

Does the proposed site (including any alternative sites) fall within any of the following:

Critical Biodiversity Area (as per provincial conservation plan)		**NO** ✓
Core area of a protected area?		**NO** ✓
Buffer area of a protected area?		**NO** ✓
Planned expansion area of an existing protected area?		**NO** ✓
Existing offset area associated with a previous Environmental Authorisation?		**NO** ✓
Buffer area of the SKA?		**NO** ✓

If the answer to any of these questions was YES, a map indicating the affected area must be included in Appendix A.

7. CULTURAL/HISTORICAL FEATURES

Substation and power line

Are there any signs of culturally or historically significant elements, as defined in section 2 of the National Heritage Resources Act, 1999, (Act No. 25 of 1999), including Archaeological or paleontological sites, on or close (within 20m) to the site? If YES, explain:		**NO** ✓

If uncertain, conduct a specialist investigation by a recognised specialist in the field (archaeology or palaeontology) to establish whether there is such a feature(s) present on or close to the site. Briefly explain the findings of the specialist:

No archaeological heritage remains, sites or features were documented within the area proposed for the substation and associated overhead power line (refer to Appendix D1).

Historical artefacts including ceramics, glass fragments including bottles and glasses, and metal and tin pieces including cans and nails, were distributed for approximately 700 m at the base of the stretch of *koppies* between 100 m and 400 m west of the proposed north-south area for the proposed overhead power line corridor that will connect to the grid near the existing substation. In addition, mainly Middle Stone Age stone artefacts and worked glass artefacts as well as built environment structures were documented along this area. Two ostrich eggshell fragments were observed in isolated on a ridge within the proposed power line corridor. The appropriate action must be taken to protect the stonewalling features located next to the power line from negative impact during development.

Will any building or structure older than 60 years be affected in any way?		**NO ✓**
Is it necessary to apply for a permit in terms of the National Heritage Resources Act, 1999 (Act 25 of 1999)?		**NO ✓**

If YES, please provide proof that this permit application has been submitted to SAHRA or the relevant provincial authority.

8. SOCIO-ECONOMIC CHARACTER

a) Local Municipality

Please provide details on the socio-economic character of the local municipality in which the proposed site(s) are situated.

Level of unemployment:

According to the Statistics South Africa's 2001 survey, the labour force in the Ubuntu Local Municipality include 6 189 individuals. This includes the employed (66%) and unemployed (34%), but not those that are not economically active but who would normally form part of the labour market (Ubuntu LM IDP, 2009). The labour market actually constitutes 62% of the total population. Should those be taken into consideration, the unemployment rate of 34% could therefore be somewhat misleading due to the fact that people not seeking work, who can be classified as unemployed people, are not included. Of the employed labour force, 69% earn less than R800 per month. This gives an indication of the poverty that exists among the majority of residents within the Ubuntu Local Municipality.

Economic profile of local municipality:

The local economy of Victoria West and surrounds are based on the agricultural activities taking place on privately owned farms. This is mainly focused on livestock farming. Although it is not always that lucrative, it supports a number of people in the area. The undiversified local economy is thus quite vulnerable to economic fluctuations.

An industry with potential for growth is the tourism sector due to the area's location with regards to the N12 and the N1. The municipality therefore developed a tourism strategy to be implemented over the next ten years to promote this economic sector. This would focus on

- Leisure tourism;
- Retail tourism;
- Meetings, incentives, conferences, and exhibitions (MICE); and
- General business.

Level of education:

The educational levels among the population of Ubuntu are relatively low which impact on the employment potential of the population and therefore also on the local economic development and job creation initiatives (Ubuntu LM IDP, 2010).

b) Socio-economic value of the activity

What is the expected capital value of the activity on completion?	R1.3 billion will be spent for both the wind farm, substation and power line
What is the expected yearly income that will be generated by or as a result of the activity?	R390 million will be spent for both the wind farm, substation and power line
Will the activity contribute to service infrastructure?	Yes

Is the activity a public amenity?	The facility will be generating electricity which will be fed into the national electricity grid but it is privately owned and therefore not a public amenity
How many new employment opportunities will be created in the development and construction phase of the activity/ies?	360 jobs
What is the expected value of the employment opportunities during the development and construction phase?	Not available at this time
What percentage of this will accrue to previously disadvantaged individuals?	84%
How many permanent new employment opportunities will be created during the operational phase of the activity?	50 jobs
What is the expected current value of the employment opportunities during the first 10 years?	Not available at this time
What percentage of this will accrue to previously disadvantaged individuals?	84%

9 BIODIVERSITY

Please note: The Department may request specialist input/studies depending on the nature of the biodiversity occurring on the site and potential impact(s) of the proposed activity/ies. To assist with the identification of the biodiversity occurring on site and the ecosystem status consult http://bgis.sanbi.org or BGIShelp@sanbi.org. Information is also available on compact disc (cd) from the Biodiversity-GIS Unit, Ph (021) 799 8698. This information may be updated from time to time and it is the applicant/ EAP's responsibility to ensure that the latest version is used. A map of the relevant biodiversity information (including an indication of the habitat conditions as per (b) below) and must be provided as an overlay map to the property/site plan as Appendix D to this report.

a) **Indicate the applicable biodiversity planning categories of all areas on site and indicate the reason(s) provided in the biodiversity plan for the selection of the specific area as part of the specific category)**

Systematic Biodiversity Planning Category				**If CBA or ESA, indicate the reason(s) for its selection in biodiversity plan**
Critical Biodiversity Area (CBA)	Ecological Support Area (ESA)	**Other Natural Area (ONA)** ✓	No Natural Area Remaining (NNR)	

b) Indicate and describe the habitat condition on site

Substation & power line

Habitat Condition	**Percentage of habitat condition class (adding up to 100%)**	**Description and additional Comments and Observations (including additional insight into condition, e.g. poor land management practises, presence of quarries, grazing, harvesting regimes etc).**
Natural	**99%**	Relatively good condition
Near Natural (includes areas with low to moderate level of alien invasive plants)	0%	
Degraded (includes areas heavily invaded by alien plants)	0%	
Transformed (includes cultivation, dams, urban, plantation, roads, etc)	**1%**	The area has been transformed by livestock farming

c) Complete the table to indicate:

(i) the type of vegetation, including its ecosystem status, present on the site; and

(ii) whether an aquatic ecosystem is present on site.

Terrestrial Ecosystems		**Aquatic Ecosystems**						
Ecosystem threat status as per the National Environmental Management: Biodiversity Act (Act No. 10 of 2004)	Critical	**Wetland (including rivers, depressions, channelled and unchanneled wetlands, flats, seeps pans, and artificial wetlands)**			Estuary		Coastline	
	Endangered							
	Vulnerable							
	Least Threatened ✓	**YES** ✓				**NO** ✓		**NO** ✓

d) Please provide a description of the vegetation type and/or aquatic ecosystem present on site, including any important biodiversity features/information identified on site (e.g. threatened species and special habitats)

Substation: The vegetation is a low open shrubland, classified by Mucina & Rutherford (2006) as Eastern Upper Karoo. This vegetation type is classified as Least Threatened and less than 2% has been transformed. At nearly 50 000 km^2 it s also the most extensive vegetation type in South Africa. In term of the actual composition of the vegetation at the site, the dominant plant species were shrubs such as *Penzia incana*, *Chrysocoma ciliata*, *Pteronia mucronata*, *Eriocephalus ericoides*, *Ruschia divaricata*, *Asparagus capensis*, *Asparagus mucronatus*, *Plinthus karooicus*, *Lycium cinereum* and *Euryops lateriflorus* and grasses such as *Eragrostis lehmanniana*, *Eragrostis obtusa*, *Aristida diffusa* and *Aristida adscensionis*. No listed species were recorded in the vicinity and there were no other notable ecological features within the development footprint.

Power Line: The vegetation is also homogenous and is comprised largely of widespread karoo species such as *Pentzia incana*, *Eriocephalus ericoides*, *Chrysocoma ciliata*, *Aristida adscensionis* and *Eragrostis lehmanniana*. Although, there are not likely to be significant impacts on terrestrial fauna and flora from this section of the power line, the length of the line and location in an area without other power lines, suggests that the potential impacts on avifauna are high. A number of vulnerable avifauna were observed at the site such as Blue Crane and Ludwigs' Bustard and the power line should be fitted with bird flight diverters to avoid negative impacts to vulnerable species.

SECTION C: PUBLIC PARTICIPATION

1. ADVERTISEMENT AND NOTICE

Publication name	Volksblad	
Date published	05 November 2012	
Site notice position	**Latitude**	**Longitude**
	3142'33".1	2312'21".0
Date placed	02 November 2012	

Include proof of the placement of the relevant advertisements and notices.

2. DETERMINATION OF APPROPRIATE MEASURES

Provide details of the measures taken to include all potential I&APs as required by Regulation 54(2)(e) and 54(7) of GN R.543.

The public consultation process has included the publishing of notices regarding the proposed project as well as the distribution of notification letters to identified I&APs. Affected and neighbouring landowners will be consulted via mail.

Key stakeholders (other than organs of state) identified in terms of Regulation 54(2) (b) of GN R.543:

Title, Name and Surname	**Affiliation/ key stakeholder status**	**Contact details (tel number or e-mail address)**
Francois Roux	Landowner	
Henk Marais	Adjacent Land Owner	
Johan Hamman	Adjacent Land Owner	
Robert Jackson	Adjacent Land Owner	
Hendrik Schoeman	Adjacent Land Owner	
Jake Niehaus	Adjacent Land Owner	

Include proof that the key stakeholder received written notification of the proposed activities as **Appendix E2**. This proof may include any of the following:

- e-mail delivery reports;
- registered mail receipts;
- courier waybills;
- signed acknowledgements of receipt; and/or
- or any other proof as agreed upon by the competent authority.

3. ISSUES RAISED BY INTERESTED AND AFFECTED PARTIES

Summary of main issues raised by I&APs	Summary of response from EAP
Department of Agriculture and Forestry & Fisheries Department of Agriculture and Forestry & Fisheries acknowledge receipt of the report and recommended that on-line application facility should be utilised in future.	The recommendation was noted.
South African National Roads Agency Limited If access will be obtained from a national road, either from the N1 or N12, SANRAL will require detailed plans for approval of the upgrading measures at the intersection with the national road. The plans must be produced by an ECSA registered consulting engineer. All costs associated with any alteration or upgrading measures will be for the applicant's account.	Noted. Access to the Farm Noblesfontein is not required from a national road. Access to the site will be provided from the existing road to the Biesiespoort station which intercepts with the N12.
SANRAL requires plans of any power line crossing of the national road. A wayleave application must be submitted in this instance.	Noted. The proposed power line will not cross a national road.

4. COMMENTS AND RESPONSE REPORT

The practitioner must record all comments received from I&APs and respond to each comment before the Draft BAR is submitted. The comments and responses must be captured in a comments and response report as prescribed in the EIA regulations and be attached to the Final BAR as Appendix E3.

5. AUTHORITY PARTICIPATION

Authorities and organs of state identified as key stakeholders:

Authority/Organ of State	Title	Contact person (Name and Surname)	Tel No	Fax No	e-mail	Postal address
Department of Energy		The Director: Northern Cape				
Department of Energy		DDG: Programmes and Projects				
Department of Environmental Affairs	Ms.	Nyiko Nkosi				
Department of Mineral Resources	Dr.	Thibedi Ramontja				
Department of Rural Development and Land Reform	Ms.	Debbie Khan				
Department of Water Affairs	Mr.	A Abrahams				
Department of Water Affairs	Ms.	Tocky Ngobeni				
Department: Agriculture, Forestry & Fisheries	Ms.	Jacoline Mans				
Department: Agriculture, Forestry & Fisheries	Ms.	Thoko Buthelezi				
Eskom	Ms.	Andrea van Gensen				
Eskom	Mr.	John Geeringh				
National Department of Agriculture, Forestry and Fisheries	Ms.	Serah Masala Muobeleni				
National Department of Energy		The Director				
Northern Cape Department of Agriculture, Land Reform & Rural Development	Mr.	Ali Diteme				
Northern Cape Department of Environment and Nature Conservation		E Botes				

Northern Cape Department of Environment and Nature Conservation	Mr.	J Mutyorauta				
Northern Cape Department of Environment and Nature Conservation	Mr.	Denver van Heerden				
Northern Cape Department of Environment and Nature Conservation	Ms.	Christene Pienaar				
Northern Cape Department of Roads and Public Works	Mr.	Kenneth Markman				
Northern Cape Department of Roads and Public Works	Mr.	Kholikile Nogwili				
Northern Cape Provincial Heritage Resources Agency	Mr.	Andrew Timothy				
Northern Cape Rock Art Trust (NCRA) McGregor Museum	Mr.	David Morris				
Pixely Ka Seme District Municipality	Mr.	Maccollan Jack				
Pixely Ka Seme District Municipality		Sandisile Madayo				
Pixely Ka Seme District Municipality	Mr.	Simphiwe Naude				
South African Heritage Resources Agency (SAHRA)	Ms.	Kathryn Smuts				
South African National Roads Agency Limited (SANRAL) - Eastern Region	Ms.	Logashri Sewnarain				
South African National Roads Agency Limited (SANRAL) - Eastern Region	Mr.	JC Landman				
South African National Roads Agency Limited (SANRAL) - Eastern Region		Ms B Mlambo				
Square Kilometre Array (SKA): South Africa	Mr.	Adrian Tiplady				
Transnet	Mr.	Krishna Reddy				

Include proof that the Authorities and Organs of State received written notification of the proposed activities.

In the case of renewable energy projects, Eskom and the SKA Project Office must be included in the list of Organs of State.

6. CONSULTATION WITH OTHER STAKEHOLDERS

Note that, for any activities (linear or other) where deviation from the public participation requirements may be appropriate, the person conducting the public participation process may deviate from the requirements of that sub-regulation to the extent and in the manner as may be agreed to by the competent authority.

Proof of any such agreement must be provided, where applicable. Application for any deviation from the regulations relating to the public participation process must be submitted prior to the commencement of the public participation process.

Refer to Appendix E5

A list of registered I&APs included as appendix E5.

Copies of any correspondence and minutes of any meetings held must be included in Appendix E6.

SECTION D: IMPACT ASSESSMENT

The assessment of impacts must adhere to the minimum requirements in the EIA Regulations, 2010, and should take applicable official guidelines into account. The issues raised by interested and affected parties should also be addressed in the assessment of impacts.

1. IMPACTS THAT MAY RESULT FROM THE PLANNING AND DESIGN, CONSTRUCTION, OPERATIONAL, DECOMMISSIONING AND CLOSURE PHASES AS WELL AS PROPOSED MANAGEMENT OF IDENTIFIED IMPACTS AND PROPOSED MITIGATION MEASURES: For

The assessment of impacts considers all components of the proposed project, i.e.:

» Construction of the proposed Noblesfontein Substation;
» Construction of the 132kV Power line; and
» Associated infrastructures such as access roads, a temporary lay down area, etc.

The extent of the infrastructure required is as follows:

» 132 kV Substation building and high voltage yard of approximate dimensions 250m X 250m (or 6.25ha).
» 132kv Power Line (36m wide servitude and up to 6 km in length);
» Temporary Lay-down area;
» Access road (up to 4m wide).

The sections which follow provide a summary and anticipated significance of the potential direct, indirect and cumulative impacts that are likely to occur as a result of the planning and design phase, construction phase, operational phase, decommissioning and closure phase, including impacts relating to the choice of site/activity/technology alternatives as well as the mitigation measures that may eliminate or reduce the potential impacts listed. This impact assessment is applied to all the identified alternatives to the activities identified in Section A (2) of this report.

Provide a summary and anticipated significance of the potential direct, indirect and cumulative impacts that are likely to occur as a result of the planning and design phase, construction phase, operational phase, decommissioning and closure phase, including impacts relating to the choice of site/activity/technology alternatives as well as the mitigation measures that may eliminate or reduce the potential impacts listed. This impact assessment must be applied to all the identified alternatives to the activities identified in Section A (2) of this report.

ASSESSMENT OF NOBELSFONTEIN SUBSTATION ALTERNATIVE

Activity	Impact summary	Significance	Proposed mitigation
Alternative 2			
Loss of vegetation due to the construction activities.	***Direct Impacts:*** The construction of the substation will result in loss of this vegetation type within the development footprint. No listed species were recorded in the vicinity and there were no other notable ecological features within the development footprint.	Low	» Vegetation clearing to be kept to a minimum. » The final development area should be surveyed for species suitable for search and rescue, which should be translocated prior to the commencement of construction. » No collection of plants or plant parts to be allowed by construction personnel. The ECO should provide environmental induction to all construction staff to ensure that they are aware of this and other environmental sensitivities at the site.
	Indirect impacts: None	-	-
	Cumulative impacts: There is other power generation and transmission infrastructure in the broader area (including power lines, substations and wind energy	Low	Minimise area of disturbance as far as possible.

Activity	Impact summary	Significance	Proposed mitigation
	developments) a number of additional power lines in the area which would cause similar impacts.		
Construction activities for the substation could result in mortality and loss of habitat for terrestrial fauna.	***Direct impacts:*** No listed species were recorded in the vicinity and there were no other notable ecological features within the development footprint.	Low	» Any fauna directly threatened by the construction activities should be removed to a safe location by the ECO or other suitably qualified person. » The collection, hunting or harvesting of any plants or animals at the site should be strictly forbidden. Personnel should not be allowed to wander off the construction site. » Fires should only be allowed within fire-safe demarcated areas. » No unauthorized persons should be allowed onto the site. » All construction vehicles should adhere to a low speed limit to avoid collisions with susceptible species such as snakes and tortoises. » Suitable precautions should be taken to limit erosion during and after construction
	Indirect impacts: None	-	-
	Cumulative impacts: The construction of the infrastructure would contribute to cumulative disturbance and habitat loss for fauna, but the contribution would be very small and is not considered significant	Low	None required.
Impact of construction and	***Direct*** Although the site	Low	» Suitable precautions must be taken to limit erosion during and after construction Control storm water and runoff from the substation into

Activity	Impact summary	Significance	Proposed mitigation
operation of the substation on drainage lines.	is near the edge of the plateau, there are no steep slopes, drainage lines or rocky outcrops within the site itself		drainage lines
	Indirect impacts	None	-
	Cumulative Impacts:	Low	-
The development footprint of approximately 5 hectares for the substation, access road, laydown areas etc., will be cleared . Excavations are required, which can result in bare areas which can trigger soil erosion	***Direct*** Soil erosion/ soil loss	Low	» Suitable precautions must be taken to limit erosion during and after construction » If it is not possible to retain a good plant cover during construction, erosion control measures should be implemented to keep the soil covered by other means, i.e. straw, mulch, erosion control mats, etc., until a healthy plant cover is again established. » Control and contain storm water run-off. » Re-vegetation of the site must be undertaken after decommissioning of the substation and after removal of temporary infrastructure such as lay-down areas and temporary construction compound. » Existing access roads to be utilised, as far as possible.
	Indirect impact: None	None	-
	Cumulative Impacts: Soil Loss	Low	Implement erosion control measures.
Use of potential sources of contaminants on the site (i.e. transformer oil, petrol, diesel and other substances used for the	***Direct*** Soil contamination	Medium	» Vehicles and equipment must be serviced regularly and maintained in a good running condition. » Storage of chemicals must be done under strict industry standards and as per the requirements of the Hazardous Substances Act » A procedure to clean up any spillage must be developed and kept onsite (at the substation site). » Spill kits must be kept at the substation site.

Activity	Impact summary	Significance	Proposed mitigation
substation, by the vehicles and equipment) during the operational phase of the substation.	***Indirect impact:*** None	-	-
	Cumulative Impacts: None	-	-
Construction (excavations) of the substation, access road and other infrastructure.	***Direct impact:*** The potential damage or loss of below and above ground archaeological/ heritage sites/ graves / fossils.	Low	No sensitive archaeological or historical heritage resources were documented within the proposed area for the substation No mitigation is proposed before construction starts because the archaeological remains (if any) are of low significance (excluding human remains). » If any human remains, fossils or any other concentrations of archaeological heritage material are exposed during construction, all work must cease and it must be reported immediately to the nearest museum/archaeologist or the Northern Cape Heritage Authority. » A systematic and professional investigation of any finds must be undertaken. Sufficient time should be allowed to investigate and to remove/collect such material.
	Indirect impact: None	-	-
	Cumulative impact: No sensitive archaeological or historical heritage resources were documented within the proposed area for the substation	Low	-

Activity	Impact summary	Significance	Proposed mitigation
Visibility of the substation and scarring of the landscape by temporary laydown areas/ construction camp.	***Direct impact:*** Potential visual impact of the substation on any visual receptors and sense of place.	Low	» Institute a planting regime around the boundaries of the chosen substation. » The steel components within the substation should not be painted but be galvanised and allowed to oxidise naturally over time. The grey colour produced in this process will help to reduce the visual impact. » Those parts of the substation that require the protection of paint should be painted in colours chosen from a palette that is matched to the natural colours found in the surrounding landscape. » New road construction must be kept to a minimum. Utilise existing roads and tracks to the extent possible.
	Indirect impact: The infrastructure associated with the power lines are of such a nature that the status quo could be regained to a large degree after decommissioning of the proposed activity. Providing that the site is rehabilitated to its current state, the visual impact will also be removed.	Low	As above
	Cumulative impacts: Due notice is taken of the intention and approval to develop the large scale wind energy farm on the remainder of the project site. The cumulative impact of the	Medium	As above

Activity	Impact summary	Significance	Proposed mitigation
	establishment of wind turbines and the power line will be of a medium significance.		
Staff required for construction and maintenacne of the substation	***Direct*** During construction temporary jobs (~13-30) will be created to construct the substation. The operational phase will also create a few jobs.	Low (Positive)	» Employ local staff, as far as possible. » Attempt to provide skills development/ training for local employees.
	Indirect -	-	-
	Cumulative The development of the wind energy facility on the site, adds to possible social benefits and spin-offs.	Medium (Positive)	» - Employ local staff, as far as possible. » Attempt to provide skills development/ training for local employees
Presence of construction workers on the site and temporary construction camp	***Direct*** ***2.*** Noise, dust, traffic, risk of damage to existing farm infrastructure associated with the construction of the substation.	Low (if the site is well managed)	» No open fires must be allowed on site and areas for smoking must be demarcated. » Members of the construction team should be easily identifiable (through the use of uniforms or name badges) and should behave fittingly at all times. » Fines should be given for not adhering to rules and regulations (with regards to conduct and safety). » Residents should be informed of the construction activities and schedules prior to the construction workforce entering the property. Privacy of residents and property owners should be respected. The substation construction site should be fenced off to avoid any

Activity	Impact summary	Significance	Proposed mitigation
			unauthorised individuals entering the site. » Good housekeeping and waste management. » Dust control on access roads. » Construction vehicles to keep to the speed limit on roads.
	Indirect Impacts: None	N/A	-
	Cumulative Impacts: The development of the wind energy facility on the site, adds to possible social risks to the local community/ landowners.	Low	» The EMP developed for the wind project together with that developed for the substation must be utilised to manage social impacts. » The developer to maintain communication with the local community during construction and operations.

ASSESSMENT OF NOBELSFONTEIN POWER LINE ALTERNATIVE

Activity	Impact summary	Significance	Proposed mitigation
Alternative 1 (Technically preferred alternative)			
Clearing of vegetation for power line servitude.	***Direct Impacts:*** Loss of vegetation due to the construction of the power line.	Medium	» Conduct a thorough search and rescue operation of all footprint areas prior to construction to remove and relocate species of conservation concern that can be re-planted. » Ensure that due care is given to mitigating the impact of sensitive features located within the first 1.5km of the power line from the substation. In this regard the descent from the plateau to the plain below follows quite a steep path and measures should be taken to ensure that construction activities do not initiate erosion on the steep slope » Keep removal of vegetation and trampling to a minimum. » Educate staff to keep construction activities within the demarcated areas.

Activity	Impact summary	Significance	Proposed mitigation
			» Prevent spillage of construction material beyond area affected by servitude. » Control and regularly monitor the establishment of alien invasive species and remove as soon as detected.
	Indirect impacts: Reduction of Indigenous species.	Medium	As listed above.
	Cumulative impacts: There is other power generation and transmission infrastructure in the broader area (including power lines, substations and the proposed wind energy facility) a number of additional power lines in the area which would cause similar impacts	Low-Medium	Management of the individual pieces of infrastructure.
Construction of power line (vegetation clearing, stringing of the power line and excavations for pylons).	***Direct impacts:*** Temporary displacement and disturbance to animals, wildlife and avifauna.	Low	» Any animals directly threatened by the construction activities should be removed to a safe location by the ECO or other suitably qualified person. However if small animals are trapped they are to be caught and released in the general area. » The collection, hunting or harvesting of any plants or animals at the site should be strictly forbidden. Personnel should not be allowed to wander off the construction site. » Fires should only be allowed within fire-safe demarcated areas. » If the construction camp or lay down area must be lit at night for security purposes, this should be done with low-UV type lights (such as most LEDs), which do not attract insects. » All hazardous materials should be stored in the appropriate manner to

Activity	Impact summary	Significance	Proposed mitigation
			prevent contamination of the site. Any accidental chemical, fuel and oil spills that occur at the site should be cleaned up in the appropriate manner as related to the nature of the spill. » All construction vehicles should adhere to a low speed limit to avoid collisions with susceptible species such as snakes and tortoises.
	Indirect impacts: -	-	-
	Cumulative impacts: The further loss of habitat due to other power generation and transmission infrastructure being developed in the broader area (including power lines, substations and wind energy developments) may exacerbate the impact.	Low	-
Construction of power line (vegetation clearing, stringing of the power line and excavations for pylons) and access roads.	***Direct:*** Soil Erosion	Medium	» Ensure that due care is given to mitigating the impact of sensitive features located within the first 1.5km of the power line from the substation. In this regard the descent from the plateau to the plain below follows quite a steep path and measures should be taken to ensure that construction activities do not initiate erosion on the steep slope. » If it is not possible to retain a good plant cover during construction, erosion control measures should be employed to keep the soil covered by other means, i.e. straw, mulch, erosion control mats, etc., until a healthy plant cover is again established. » Care should also be taken to control and contain storm water run-off. » Re-vegetation of the site must be undertaken after decommissioning of the power line and after removal of temporary infrastructure such as

Activity	Impact summary	Significance	Proposed mitigation
			lay-down areas and temporary construction compound. » Pylon foundations and access roads to be regular inspected to determine is erosion control or soil stabilisation is required.
	Indirect:-	-	-
	Cumulative: Accelerated erosion, gully / sheet erosion and soil loss due to disturbance due to the wind energy facility and substation construction	Medium	» Good soil management of various sites/ project is required. » Implement appropriate erosion control measures at individual sites.
	Direct: Damage to drainage lines.	Low	» Place pylons as far as possible out of the drainage lines and their embankments » Do not use the drainage lines or their banks as access points for construction activities. » String power line across the drainage lines. » Monitor drainage lines and stabilise the soils, if required. » During heavy rainfall event, avoid construction across drainage lines.
	Indirect: Erosion, increased run-off, sedimentation downstream of the drainage lines and possible soil loss.	Low	As above
	Cumulative: -	-	-
Excavations for pylons	***Direct impact:*** The potential damage or loss of below and above ground pre-colonial archaeological /heritage sites/graves/ fossils.	Low	If it is inevitable that construction activities must take place within 100m of any documented stone-wall structures a perimeter fence must erected to protect the sensitive area from any possible negative impact. » If concentrations of archaeological materials are exposed then all work must stop for an archaeologist to investigate and record the site as may be required by the heritage authority.

Activity	Impact summary	Significance	Proposed mitigation
	Indirect impact:-	-	» If any human remains, fossils or any other concentrations of archaeological heritage material are exposed during construction, all work must cease and it must be reported immediately to the nearest museum/archaeologist or the Northern Cape Heritage Authority. » A systematic and professional investigation of any finds must be undertaken. Sufficient time should be allowed to investigate and to remove/collect such material.
	Cumulative impact: No heritage sites of importance were identified on the development footprints. Minimal archaeological traces mean that cumulative impacts would be negligible.	Low	
Power Line structures and operation	***Direct*** Collision and/ electrocution of bird species with the power line.	High	Build the proposed steel monopole with the standard Eskom Bird Perch on top of the pole to provide sufficient safe perching space for vultures above the dangerous hardware. » Utilise bird perches. » In addition to the Bird Perch, the structure must conform to Eskom's bulletin on bird friendly structures. » The entire power line should be marked with Bird Flight Diverters, to reduce the risk of collisions of sensitive species notably the Ludwig's Bustard and Blue Crane identified in the area. Bird collisions or electrocutions will be minimised through the installation of bird flappers.
	Indirect Impacts:	Medium	
	Cumulative: Higher bird mortalities are possible due to existence of other power lines in the area.	Medium	
Visibility of the Power line structures during its operational life	***Direct:*** Potential visual impact of the power line on any visual receptors and sense of place	Low	None is possible.
	Indirect:-	-	-
	Cumulative: Due to various electricity infrastructure in the area	-	-
Staff required for	***Direct***	Low (Positive)	» Employ local staff, as far as possible.

Activity	Impact summary	Significance	Proposed mitigation
construction and maintenance of the power line	During construction a few temporary jobs (~13-30) will be created to construct the power line. The operational phase will also create a few jobs.		» Attempt to provide skills development/ training for local employees.
	Indirect -	-	-
	Cumulative The development of the wind energy facility on the site, adds to possible social benefits and spin-offs.	Medium (Positive)	» Employ local staff, as far as possible. » Attempt to provide skills development/ training for local employees
Presence of construction workers on the site during construction.	***Direct*** ***3.*** Noise, dust, traffic, risk of damage to existing farm infrastructure associated with the construction of the power line.	Low (if the site is well managed)	» No open fires must be allowed on site and areas for smoking must be demarcated. » Members of the construction team should be easily identifiable (through the use of uniforms or name badges) and should behave fittingly at all times. » Fines should be given for not adhering to rules and regulations (with regards to conduct and safety). » Residents should be informed of the construction activities and schedules prior to the construction workforce entering the property. Privacy of residents and property owners should be respected. » Good housekeeping and waste management of servitude that is under construction. » Dust control on access roads. » Construction vehicles to obey the speed limit.
	Indirect Impacts: None	N/A	-

Activity	Impact summary	Significance	Proposed mitigation
	Cumulative Impacts: The development of the wind energy facility on the site, adds to possible social risks to the local community/ landowners.	Low	» The EMP developed for the wind project as well as that for the power line must be utilised to manage social impacts. » The developer to maintain communication with the local community during construction and operations.

A complete impact assessment in terms of Regulation 22(2)(i) of GN R.543 has been included as Appendix F.

2. ENVIRONMENTAL IMPACT STATEMENT

Taking the assessment of potential impacts into account, please provide an environmental impact statement that summarises the impact that the proposed activity and its alternatives may have on the environment after the management and mitigation of impacts have been taken into account, with specific reference to types of impact, duration of impacts, likelihood of potential impacts actually occurring and the significance of impacts.

Alternative A (preferred alternative)

In order to connect the Noblesfontein Wind Energy Facility to the national electricity grid, Coria (PKF) Investments 28 (Pty) Ltd is proposing the following:

» The proposed construction of a 132 kV Power Line and Substation on a site within the Noblesfontein Wind Energy Facility (DEA reference no: 12/12/20/1993/1)

In summary, the following conclusions were drawn from each of the specialist studies undertaken (Savannah Environmental,2011):

» The substation and power line are located within areas of relatively **low ecological sensitivity**. The only significant ecological features within the power line footprint exist within the first 1.5 km from the substation in the vicinity of steeper the slopes. Provided that suitable precautions are taken to limit erosion on these steeper slopes during and after construction at the substation site, neither the siting of the substation nor the power line will have a significant impact on the environment.

» The length of the line and location in an area without other power lines, suggests that the **potential impacts on avifauna are high**. A number of vulnerable avifauna was observed at the site such as Blue Crane and Ludwigs' Bustard. Power lines are to be fitted with bird flight diverters to avoid negative impacts to vulnerable species and reduce the impact to **medium significance**. Pre- and post-construction monitoring will be vital to improve understanding of the risk posed by the facility on local bustards, and how best to mitigate this risk.

» The findings of the **geology, soils and erosion potential** study have indicated that the proposed development will have an impact of **a low** significance on the geological environment and these impacts can be largely reduced to **very low** level with the implementation of appropriate mitigation (refer Savannah, January 2012).

» No **archaeological heritage** remains, sites or features were documented within the area proposed for the substation and associated overhead power line. The area

proposed for the substation and path of the power line corridors is considered has having a **low cultural significance.**

» The construction of the facility and its associated infrastructure will have a **visual impact** on the natural scenic resources and rural character of this region. Potential visual impacts are of **moderate significance** in terms of the potential visual impact on users of arterial and secondary roads in close proximity (**~5km radius**) of the proposed facility. The impact on sensitive visual receptors in the vicinity of the development will be of **moderate to low significance**. Within the greater region, the potential visual impact on sensitive visual receptors, and on the sense of place of tourist routes and destinations, will be of **moderate to low** significance. The various ancillary infrastructures is expected to result in visual impacts of **low** significance. This anticipated visual impact is not, however, considered to be a fatal flaw from a visual perspective, considering the relatively low incidence of visual receptors in the region and the contained area of potential high visual exposure (refer Savannah, January 2012).

» The findings of the **social impact** assessment undertaken indicate that the development will create limited employment and business opportunities for locals during both the construction and operational phase of the project. The proposed development also represents an investment in clean, renewable energy infrastructure, which, given the challenges created by climate change, represents a **positive social benefit** for society as a whole. However, the visual impacts associated with a facility of this nature will impact on the current sense of place and landscape character. This impact will be for the entire operational lifespan (approximately 25 years) of the facility. All of the potential negative impacts can be effectively mitigated through the recommended mitigation measures (refer Savannah, January 2012).

» The overall cumulative impacts of this project will be low to moderate due to the existence of other power lines in are vicinity (Biesiespoort/ Kromrivier 1 132kV power line) and also proposed power lines for the authorised projects i.e Noblesfontein Solar Energy facility (12/12/20/1993/2) and Modderfontein Wind Energy Facility (12/12/20/1993/3)

This Basic Assessment process has considered the new position of the substation and power line to replace the original infrastructure authorised by DEA. Construction of the wind farm component and associated infrastructure is currently underway within the larger Noblesfontein project area and thus the impact of the additional proposed activities (this application) are not seen to be significant.

Based on the above it is the conclusion of the Environmental Assessment Practitioner that the establishment of the substation and power line is considered acceptable from

an environmental perspective. Based on the nature and extent of the proposed project, the potential impacts associated with the proposed substation, new power line, re-aligned Eskom power lines and its relevant infrastructure can be mitigated to an acceptable standard.

Alternative B: N/A

Alternative C: N/A

No-go alternative (compulsory)

The 'do-nothing' alternative is the option of not constructing the proposed substation and power line on the identified site. This alternative would result in no environmental impacts on the site or surrounding area. However, failure to add the proposed electricity to the national grid would most likely result in additional consumption of fossil fuels to achieve the same level of electrical generation at other locations in the country. This is because the electricity demand in South Africa is placing increasing pressure on the country's existing power generation capacity. There is therefore a need for additional electricity generation options to be developed throughout the country.

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

The generation of electricity from renewable energy in South Africa offers a number of socio-economic and environmental benefits. These benefits are explored in further detail in the South Africa Renewable Energy Feed-in Tariff (REFIT) Regulatory Guideline published by NERSA (March 2009), and include:

» *Support for international agreements:* The effective deployment of renewable energy provides a tangible means for South Africa to demonstrate its commitment to its international agreements under the Kyoto Protocol, and for cementing its status as a leading player within the international community.

» *Exploitation of our significant renewable energy resource:* At present, valuable national resources including biomass by-products, solar radiation and solar power remain largely unexploited. The use of these energy flows will strengthen energy security through the development of a diverse energy portfolio.

» *Increased energy security:* The current electricity crisis in South Africa highlights the significant role that renewable energy can play in terms of power

supplementation. In addition, given that renewables can often be deployed in a decentralised manner close to consumers, they offer the opportunity for improving grid strength and supply quality, while reducing expensive transmission and distribution losses.

» *Pollution reduction:* The releases of by-products through the burning of fossil fuels for electricity generation have a particularly hazardous impact on human health and contribute to ecosystem degradation.

» *Climate friendly development:* The uptake of renewable energy offers the opportunity to address energy needs in an environmentally responsible manner and thereby allows South Africa to contribute towards mitigating climate change through the reduction of greenhouse gas (GHG) emissions. South Africa is estimated to be responsible for ~1% of global GHG emissions and is currently ranked 9th worldwide in terms of per capita CO_2 emissions.

» *Employment creation:* The sale, development, installation, maintenance, and management of renewable energy facilities have significant potential for job creation in South Africa.

» *Acceptability to society:* Renewable energy offers a number of tangible benefits to society including reduced pollution concerns, improved human and ecosystem health and climate friendly development.

» *Support to a new industry sector* - the development of renewable energy offers the opportunity to establish a new industry within the South African economy.

Within a policy framework, the development of renewable energy in South Africa is supported by the White Paper on Renewable Energy (November 2003), which has set a target of 10 000 GWh renewable energy contributions to final energy consumption by 2013. The target is to be achieved primarily through the development of solar, biomass, solar and small-scale hydro.

The 'do nothing' alternative will not assist the South African government in addressing climate change, in reaching the set targets for renewable energy, nor will it assist in supplying the increasing electricity demand within the country. In addition the Northern Cape power supply will be deprived of an opportunity to benefit from the additional generated power being evacuated directly into the Provinces' grids. **The 'do nothing alternative is, therefore, not a preferred alternative.**

SECTION E. RECOMMENDATION OF PRACTITIONER

Is the information contained in this report and the documentation attached hereto sufficient to make a decision in respect of the activity applied for (in the view of the environmental assessment practitioner)?	**YES** ✓	

If "NO", indicate the aspects that should be assessed further as part of a Scoping and EIA process before a decision can be made (list the aspects that require further assessment).

If "YES", please list any recommended conditions, including mitigation measures that should be considered for inclusion in any authorisation that may be granted by the competent authority in respect of the application.

There are no insurmountable environmental or social constraints that prevent the establishment of the proposed Substation and Power Line. Also construction of the wind farm component and associated infrastructure is currently underway within the larger Noblesfontein project area and thus the impact of the additional proposed activities (this application) are not seen to be significant.

The location for the proposed substation has been selected to avoid unnecessary increase in the ecological footprint. The construction of the proposed substation and power line should be implemented according to the EMPr to adequately mitigate and manage potential impacts associated with construction activities. The construction activities and relevant rehabilitation of disturbed areas should be monitored against the approved EMPr, the Environmental Authorisation and all other relevant environmental legislation. Relevant conditions to be adhered to include:

Design, Construction, and Decommissioning Phases:

» All relevant practical and reasonable mitigation measures detailed within this report must be implemented.
» The draft Environmental Management Programme Report (EMPr) as contained within **Appendix G** of this report should form part of the contract with the Contractors appointed to construct and maintain the proposed substation, and will be used to ensure compliance with environmental specifications and management measures. The implementation of this EMPr for all life cycle phases of the proposed project is considered to be key in achieving the appropriate environmental management standards as detailed for this project.
» During construction, unnecessary disturbance to habitats should be strictly controlled and the footprint of the impact should be kept to a minimum.
» Perennial grasses which occur naturally in the area should be used to stabilise the site after it has been cleared. A mix of fast growing annual and perennial grass

species could be used.

» Disturbed areas should be rehabilitated as soon as possible once construction is complete in an area.
» An on-going monitoring programme should be established to detect and quantify any alien species.
» Identify areas of high erosion risk (drainage lines, existing problem areas). Only special works to be undertaken in these areas to be authorised by ECO and Engineer's representative (ER).
» Access roads to be carefully planned and constructed to minimise the impacted area and prevent unnecessary degradation of soil.
» Erosion control measures; run-off control and attenuation on slopes (sand bags, logs), silt fences, stormwater channels and catch-pits, shade nets, soil binding, geo-fabrics, hydro-seeding or mulching over cleared areas must be implemented.
» An appropriate stormwater management plan must be developed and implemented.
» Contractors must be informed before construction starts on the possible types of heritage sites and cultural material they may encounter and the procedures to follow when they find sites. If concentrations of archaeological heritage material and human remains are uncovered, all work must cease immediately and be reported to SAHRA so that systematic and professional investigation/ excavation can be undertaken. It is also recommended that a palaeontologist should be appointed do a site visit to determine whether fossils are exposed in the area earmarked for development, prior to construction. This survey would of course be limited to a surface inspection only. In the event of fossils being uncovered during the construction phase, the ECO should photograph and record the position of fossiliferous material.
» An application for all other permits (e.g. those with respect to protected tree species or protected plant species and Section 21 (c) and (i) and other water uses under the National Water Act) must be obtained from the relevant authority prior to the commencement of construction activities.
» All declared aliens must be identified and managed in accordance with the Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983), the implementation of a monitoring programme in this regard is recommended.
» Before development can continue the regions need to be checked for the presence of bird nesting sites, particularly those of ground nesting species.
» The Conservation Authorities of the Northern Cape must be contacted regarding any permit regulations that need to be followed regarding the removal of the above species. It is preferable that whenever any of the species need to be removed, they be replanted whenever feasible (succulents and geophytes) to sites nearby in the same type of habitat, but remaining on the same land portion.
» Limit construction, maintenance, and inspection activities to dry periods.
» Develop emergency maintenance operational plan to deal with any event of contamination, pollution, or spillages.
» If large areas are cleared for the storage of equipment, these should be

rehabilitated using arid site rehabilitation techniques such as planting cover crops reseeding with local grasses and shrubs.

» Local community members should be provided an opportunity to be included in a list of possible local suppliers and service providers.
» Social benefits in terms of training, skills development and the use of local labour should thus be aspired to. These skills can be transferable to other employment sectors and would result in further sustainable benefits.
» The Local Municipality and community representatives and neighbouring property owners should be kept informed of the progress, decisions taken with regards to the development and construction schedules. The establishment of a community Management and Monitoring Committee consisting of key community representatives, and representatives of the Local Municipality could assist in this regard.
» Attention should be given to the extension and improvement of the existing HIV/Aids awareness programmes.

Operation Phase:

The mitigation and management measures previously listed in this Basic Assessment Report should be implemented in order to minimise potential environmental impacts. The following mitigation measures should also be implemented.

» Maintenance of erosion control measures (i.e. berms).
» Development and implementation of an appropriate storm water management plan.
» On-going maintenance of the facility to minimise the potential for visual impacts.
» On-going monitoring of the site to detect and restrict the spread of alien plant species.
» Install bird diverters on the power line.
» Development and implementation of a storm water management plan.
» On-going maintenance of the facility to minimise the potential for visual impacts.Training, skills development and the use of local labour.

In the opinion of the Environmental Practitioner, the proposed activity is not fatally flawed and all potential impacts can be mitigated to an acceptable level. As such, it is recommended that the proposed construction of the substation and power line be authorised subject to compliance with the recommendations and mitigation measures proposed in this report. Ensure bird-friendly tower designs are implemented to minimise the risk of electrocutions. Fit overhead power lines with appropriate flappers to increase the visibility thereof to avifauna. Notes of electrocution and collision events must be sent to a qualified Ornithologist for the recommendation of further mitigation measures if necessary.

Is an EMPr attached?	**YES** ✓	

The EMPr must be attached as Appendix G.

The details of the EAP who compiled the BAR and the expertise of the EAP to perform the Basic Assessment process must be included as Appendix H.

If any specialist reports were used during the compilation of this BAR, please attach the declaration of interest for each specialist in Appendix I.

Any other information relevant to this application and not previously included must be attached in Appendix J.

KAREN JODAS

_____

NAME OF EAP

_____ _____

SIGNATURE OF EAP DATE

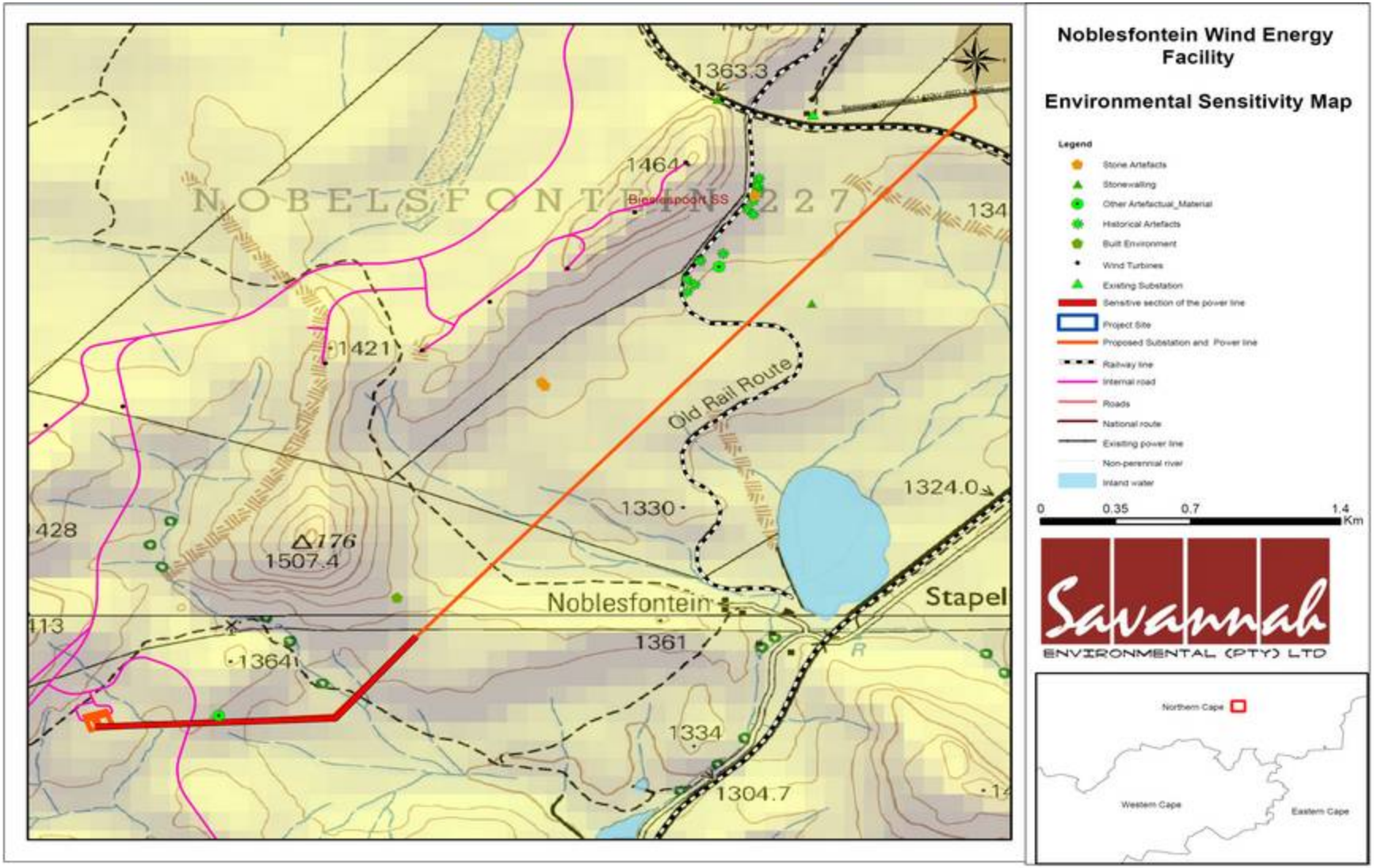

Figure 5: Sensitivity Map for the Proposed Noblesfontein 132 Power Line and Substation indicating area along power line sensitive to erosion

SECTION F: APPENDICES

The following appendixes must be attached:

Appendix A: Maps

Appendix B: Photographs

Appendix C: Facility illustration(s)

Appendix D: Specialist reports (including terms of reference)

Appendix E: Public Participation

Appendix F: Impact Assessment

Appendix G: Environmental Management Programme (EMPr)

Appendix H: Details of EAP and expertise

Appendix I: Specialist's declaration of interest

Appendix J: Additional Information