ENVIRONMENTAL IMPACT ASSESSMENT PROCESS
BASIC ASSESSMENT REPORT FOR PUBLIC REVIEW

PROPOSED CONSTRUCTION OF A 132KV OVERHEAD POWER LINE, FACILITY SUBSTATION COMPLEX AND METERING STATION, FOR THE AUTHORISED NXUBA WIND FARM NEAR COOKHOUSE, EASTERN CAPE

REPORT FOR PUBLIC REVIEW
August 2015

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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, 2014 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 **08 December 2014**. 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

Title	**:**	Environmental Assessment Process Basic Assessment Report for the Proposed construction of a 132kV overhead power line, facility substation complex and metering station, for the authorised Nxuba Wind Farm near Cookhouse, Eastern Cape
Authors	**:**	Savannah Environmental Tebogo Mapinga Jo-Anne Thomas
Specialists	**:**	Gabrielle Wood: Savannah Environmental Eastern Cape Heritage Consultants WildSkies Ecological Services EOH Coastal & Environmental Services
Applicant	**:**	Nxuba Wind Farm (RF) (Pty) Ltd
Report Status	**:**	Basic Assessment Report for Public Review
Review period	**:**	31 August- 30September 2015

When used as a reference this report should be cited as: Savannah Environmental (2015) Basic Assessment Report: Proposed construction of a 132kV overhead power line, facility substation complex and metering station, for the authorised Nxuba Wind Farm near Cookhouse, Eastern Cape.

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SUMMARY AND OVERVIEW OF THE PROPOSED PROJECT

ACED Bedford Wind Farm (Pty) Ltd obtained an Environmental Authorisation in February 2012 from the National Department of Environmental Affairs (DEA) for the construction of a Bedford Stage Wind Energy Facility and associated infrastructure (including grid connection) on a site near Cookhouse in the Eastern Cape Province (DEA Ref No. 12/12/20/1569/2). Great Fish River Wind Farm (Pty) Ltd also obtained an Environmental Authorisation in February 2012 from the National DEA for the construction of a wind energy facility and associated infrastructure (including grid connection) on a site near Cookhouse in the Eastern Cape Province (DEA Ref No. 12/12/20/2290).

Based on technical aspects and locations of the two above-mentioned projects, being located adjacent to each other, it was determined that the two projects will be more energy efficient when combined. Combining the two projects also resulted in optimisation, both from a commercial as well as an environmental point of view due to it being possible to share some infrastructure. Thus the holder of the Environmental Authorisation for the combined projects was amended to **Nxuba Wind Farm (RF) (Pty) Ltd** and the project name used in reference to the combined projects was amended to Nxuba Wind Farm. Nxuba Wind Farm RF (Pty) Ltd has been awarded Preferred Bidder status within the Renewable Energy Independent Power Producer Procurement Programme (REIPPPP) Bid Window Four.

Through detailed feasibility studies, detailed design of the wind energy facility and consultation with Eskom it has been determined that an alternative grid connection is technically and commercially optimal to connect the Nxuba Wind Farm to Eskom's Poseidon Substation. Therefore, Nxuba Wind Farm (RF) (Pty) Ltd proposes to construct a 132 kV facility substation complex and 132kV overhead power line to connect the authorised Nxuba Wind Farm to the existing Poseidon Substation, as well as a facility metering station at the point of connection, adjacent at the existing Poseidon Substation (refer to Map 1 of Appendix 6). The proposed project would be constructed under an Own-Build agreement[1].

[1] Under this agreement the proposed infrastructure is constructed and operated by the proponent, i.e. Nxuba Wind Farm (RF) (Pty) Ltd.

The proposed project will entail:

- » Construction of a 132kV facility substation complex (120 m x 120m) (as indicated on Map 1 of Appendix 6) – the substation complex will house transformer equipment, offices and a control room.
- » Construction of a metering station (40m x 30m). The metering station will be located adjacent to Poseidon substation at the point of connection, in order to quantify net electrical output produced by the windfarm.
- » Construction of a 132kV overhead power line, to connect the proposed Nxuba substation to the existing Poseidon Substation (as indicated on Map 1 of Appendix 6). The proposed power line is ~2km in length and would replace the authorised grid connection associated with the Bedford and Great Fish components of the Nxuba facility.

A 300m wide corridor was investigated for the siting of the proposed power line and associated infrastructure (refer to Map 1 of Appendix 6).

The following property will be affected by the construction of the proposed substation complex, metering station and power line:

- » Portion 0 of Farm 73 (Van Wyks Kraal).

SG 21 Digit Code is listed below:

- » CO10000000000073000000

1.1. NEED AND DESIRABILITY FOR THE PROPOSED INFRASTRUCTURE

The need and justification for the proposed grid connection infrastructure (power line, facility substation complex and metering station) is linked to the Environmental Authorisations that were issued for the Nxuba Wind Farm in February 2012. The authorised wind farm is a Round four (4) preferred bidder project. The proposed power line, facility substation complex and metering station constitute essential infrastructure to connect the wind farm to the National grid connection point at Poseidon substation as dictated by Eskom's requirements and the final optimised facility design. This power line, facility complex and metering station will replace the already authorised grid connection to the Poseidon Substation.

From an overall sensitivity and planning perspective, the proposed grid connection supports the broader strategic context of the municipality and is in line with broader societal needs and the public interest as it is linked to a renewable energy facility, for which there is a national policy and support. No exceedance of ecological, heritage or avifaunal limits will result from the construction of the proposed power line, facility

substation complex and metering station, and no significant disturbance of biological diversity is anticipated, as detailed in this Basic Assessment Report.

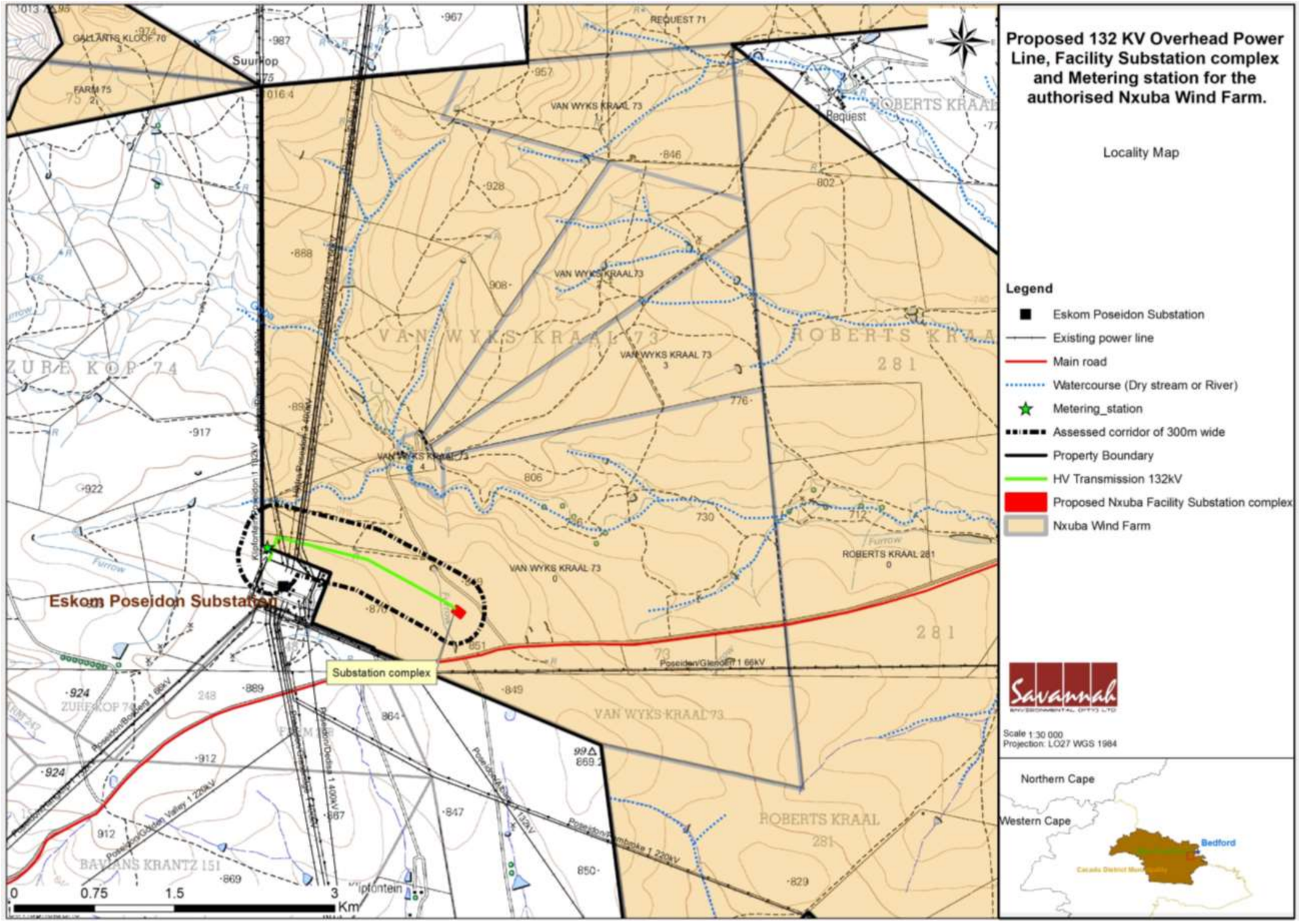

Figure 1: Locality Map indicating the proposed assessed power line corridor, the location of the proposed facility substation complex and a metering station. Refer to Appendix A for A3 map.

1.2. REQUIREMENTS FOR A BASIC ASSESSMENT PROCESS

In terms of the Environmental Impact Assessment (EIA) Regulations of December 2014, published in terms of Section 24(5) of the National Environmental Management Act (NEMA, Act No. 107 of 1998), Nxuba Wind Farm (RF) (Pty) Ltd requires authorisation for the construction of the power line and substation complex. The proposed metering station does not trigger any listed activity, but does form part of the project and has therefore been assessed. In terms of Sections 24 and 24D of NEMA (No 107 of 1998), as read with the EIA Regulations of GN R982 – R985, a Basic Assessment process is required to be undertaken in support of the application for authorisation for the proposed project.

In terms of Section 24(1) of NEMA, the potential impact on the environment associated with these activities must be considered, investigated, assessed and reported on to the competent authority that has been charged by NEMA with the responsibility of granting Environmental Authorisations. As the application is related to renewable energy and distribution of energy, the National Department of Environmental Affairs (DEA) is the competent authority[2] and the Eastern Cape Department of Economic Development and Environmental Affairs (EC DED&EA) will act as the commenting authority. This project will be registered with the DEA.

The nature and extent of the proposed power line, substation complex and metering station is explored in more detail in this Basic Assessment Report. This report has been compiled in accordance with the requirements of the EIA Regulations of December 2014 (as per Table A below), 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.

TABLE A: LEGAL REQUIREMENTS OF SECTION 19 OF THE EIA REGULATIONS

NEMA REGULATION GNR 982, SECTION 19 REQUIREMENTS FOR THE CONTENT OF BASIC ASSESSMENT REPORTS AS PER APPENDIX 1		CROSS REFERENCE IN THIS REPORT (refer to the following parts in the report)
(1)	A basic assessment report must contain the information that is necessary for the competent authority to consider and come to a decision on the application, and must include— (a) details of— (i) the EAP who prepared the report; and	Section 1.2
(ii)	the expertise of the EAP, including a curriculum vitae;	Section 1.2 Appendix H
(b) (i)	the location of the activity, including: the 21 digit Surveyor General code of each cadastral land parcel;	Section A
(ii)	where available, the physical address and farm name;	Section B
(iii)	where the required information in items (i) and (ii) is not available, the coordinates of the boundary of the property or properties;	Section A (2) (a)

[2] In terms of the Energy Response Plan, the DEA is the competent authority for all energy related applications.

NEMA REGULATION GNR 982, SECTION 19 REQUIREMENTS FOR THE CONTENT OF BASIC ASSESSMENT REPORTS AS PER APPENDIX 1	CROSS REFERENCE IN THIS REPORT (refer to the following parts in the report)
(c) a plan which locates the proposed activity or activities applied for as well as associated structures and infrastructure at an appropriate scale;	Appendix A1 and A2 Appendix C
or, if it is— (i) a linear activity, a description and coordinates of the corridor in which the proposed activity or activities is to be undertaken; or on land where the property has not been defined, the coordinates within which the activity is to be undertaken;	Appendix J1
(d) a description of the scope of the proposed activity, including— (i) all listed and specified activities triggered and being applied for; and (ii) a description of the activities to be undertaken including associated structures and infrastructure ;	Section A (1) a, b
(e) a description of the policy and legislative context within which the development is proposed including— (i) an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks, and instruments that are applicable to this activity and have been considered in the preparation of the report; and	Section 11
(ii) how the proposed activity complies with and responds to the legislation and policy context, plans, guidelines, tools frameworks, and instruments;	Section 11
(f) a motivation for the need and desirability for the proposed development including the need and desirability of the activity in the context of the preferred location;	Section 1.1
(g) a motivation for the preferred site, activity and technology alternative;	Section 1.1 Section 2
(h) a full description of the process followed to reach the proposed preferred alternative within the site, including: (i) details of all the alternatives considered; (ii) details of the public participation process undertaken in terms of regulation 41 of the Regulations, including copies of the supporting documents and inputs; (iii) a summary of the issues raised by interested and affected parties, and an indication of the manner in which the issues were incorporated, or the reasons for not including them;	Section 2 Section C Appendix E
(iv) the environmental attributes associated with the alternatives focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects;	Section B Section D
(v) the impacts and risks identified for each alternative, including the nature, significance, consequence, extent, duration and probability of the impacts, including the degree to which these impacts— (aa) can be reversed; (bb) may cause irreplaceable loss of resources; and (cc) can be avoided, managed or mitigated;	Section D Appendix F
(vi) the methodology used in determining and ranking the nature, significance, consequences, extent, duration and probability of potential environmental impacts and risks associated with the alternatives;	Appendix F

NEMA REGULATION GNR 982, SECTION 19 REQUIREMENTS FOR THE CONTENT OF BASIC ASSESSMENT REPORTS AS PER APPENDIX 1		CROSS REFERENCE IN THIS REPORT (refer to the following parts in the report)
(vii)	positive and negative impacts that the proposed activity and alternatives will have on the environment and on the community that may be affected focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects;	Appendix F Section D
(viii)	the possible mitigation measures that could be applied and level of residual risk;	Appendix F Section D
(ix)	the outcome of the site selection matrix;	N/A. *The proposed power line, facility substation complex and metering station constitute essential infrastructure to connect the wind farm to the National grid connection point at Poseidon substation as dictated by Eskom's requirements and the final optimised facility design.*
(x)	if no alternatives, including alternative locations for the activity were investigated, the motivation for not considering such; and	Section 2
(xi)	a concluding statement indicating the preferred alternatives, including preferred location of the activity;	Section D2
(i)	a full description of the process undertaken to identify, assess and rank the impacts the activity will impose on the preferred location through the life of the activity, including— (i) a description of all environmental issues and risks that were identified during the environmental impact assessment process; and	Appendix F Appendix D
(ii)	an assessment of the significance of each issue and risk and an indication of the extent to which the issue and risk could be avoided or addressed by the adoption of mitigation measures;	Appendix F Appendix D
(j)	an assessment of each identified potentially significant impact and risk, including— (i) cumulative impacts; (ii) the nature, significance and consequences of the impact and risk; (iii) the extent and duration of the impact and risk; (iv) the probability of the impact and risk occurring; (v) the degree to which the impact and risk can be reversed; (vi) the degree to which the impact and risk may cause irreplaceable loss of resources; and (vii) the degree to which the impact and risk can be avoided, managed or mitigated;	Appendix F Appendix D
(k)	where applicable, a summary of the findings and impact management measures identified in any specialist report complying with Appendix 6 to these Regulations and an indication as to how these findings and recommendations have been included in the final report;	Section D2
(l) (i) (ii)	an environmental impact statement which contains— a summary of the key findings of the environmental impact assessment; a map at an appropriate scale which superimposes the proposed activity and its associated structures and infrastructure on the	Section D2 Appendix A3

NEMA REGULATION GNR 982, SECTION 19 REQUIREMENTS FOR THE CONTENT OF BASIC ASSESSMENT REPORTS AS PER APPENDIX 1		CROSS REFERENCE IN THIS REPORT (refer to the following parts in the report)
	environmental sensitivities of the preferred site indicating any areas that should be avoided, including buffers; and	
(iii)	a summary of the positive and negative impacts and risks of the proposed activity and identified alternatives;	
(m)	based on the assessment, and where applicable, impact management measures from specialist reports, the recording of the proposed impact management objectives, and the impact management outcomes for the development for inclusion in the EMPr;	Section D2
(n)	any aspects which were conditional to the findings of the assessment either by the EAP or specialist which are to be included as conditions of authorisation;	Section E
(o)	a description of any assumptions, uncertainties, and gaps in knowledge which relate to the assessment and mitigation measures proposed;	Section 1.4
(p)	a reasoned opinion as to whether the proposed activity should or should not be authorised, and if the opinion is that it should be authorised, any conditions that should be made in respect of that authorisation;	Section D
(q)	where the proposed activity does not include operational aspects, the period for which the environmental authorisation is required, the date on which the activity will be concluded, and the post construction monitoring requirements finalised;	N/A. *"The project includes operational aspects".*
(r)	an undertaking under oath or affirmation by the EAP in relation to: (i) the correctness of the information provided in the reports; (ii) the inclusion of comments and inputs from stakeholders and I&APs; (iii) the inclusion of inputs and recommendations from the specialist reports where relevant; and (iv) any information provided by the EAP to interested and affected parties and any responses by the EAP to comments or inputs made by interested and affected parties; and	Appendix H
(s)	where applicable, details of any financial provisions for the rehabilitation, closure, and ongoing post decommissioning management of negative environmental impacts;	N/A. *"Rehabilitation will be required in terms of the Environmental Management Plan, which will be legally binding to the Contractor. The Contractor would therefore need to make financial provision for rehabilitation when quoting for construction of the project".*
(t)	any specific information that may be required by the competent authority; and	N/A
(u)	any other matters required in terms of section 24(4)(a) and (b) of the Act.	N/A

1.3. DETAILS OF ENVIRONMENTAL ASSESSMENT PRACTITIONER AND EXPERTISE TO CONDUCT THE BASIC ASSESSMENT

Nxuba Wind Farm (RF) (Pty) Ltd has appointed Savannah Environmental as the independent environmental consultant to undertake the required Basic Assessment process and to identify and assess all the potential environmental impacts associated with the proposed project and propose appropriate mitigation and management measures in an Environmental Management Programme (EMPr). As part of these environmental studies, Interested & Affected Parties (I&APs) have been actively involved through the public involvement process. Neither Savannah Environmental nor any of the specialist sub-consultants on this project are subsidiaries of or are affiliated to Nxuba Wind Farm (RF) (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 and transmission.

The Environmental Assessment Practitioners (EAPs) and Public Participation consultants from Savannah Environmental who are responsible for this project are:

» *Tebogo Mapinga* - is a Senior Environmental Consultant, holds a BSc degree with 8 years of experience in the environmental field in both public and private sectors. Her competencies lie in environmental impact assessments, compliance monitoring and public participation for small and large scale projects. She is currently in the process of completing her honours degree in Environmental Management
» *Gabriele Wood* - holds a Honours Degree in Anthropology, obtained from the University of Johannesburg. She has 6 years consulting experience in public participation and social research. Her experience includes the design and implementation of public participation programmes and stakeholder management strategies for numerous integrated development planning and infrastructure projects. Her work focuses on

managing the public participation component of Environmental Impact Assessments and Basic Assessments undertaken by Savannah Environmental.

» *Jo-Anne Thomas* - a registered Professional Natural Scientist and holds a Master of Science degree. She has 17 years' 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 involved in undertaking siting processes as well as EIAs for several renewable energy projects across the country.

Savannah Environmental has gained extensive knowledge and experience on potential environmental impacts associated with electricity generation and transmission/ distribution projects through their involvement in related EIA processes over the past 10 years. Savannah Environmental has completed the EIA process and received environmental authorisations for numerous renewable energy projects and their associated infrastructure; including the EIAs for the authorised Nxuba Wind Farm. In order to adequately identify and assess potential environmental impacts associated with the proposed project, Savannah Environmental has appointed the following specialists to conduct specialist impact assessments:

» Ecology – Ms Ayanda Zide, Graig Sholto-Douglas, Ms Tarryn Martin (EOH Coastal and Environmental Services);
» Heritage - Dr Johan Binneman and Mr Kobus Reichert (Eastern Cape Heritage Consultants); and
» Avifauna – Jon Smallie (WildSkies Ecological Services).

Curricula Vitae for the Savannah Environmental project team and specialist consultants are included in **Appendix H**.

1.4. ASSUMPTIONS AND LIMITATIONS

The following assumptions and limitations are applicable to the studies undertaken within this Basic Assessment Process:

» All information provided by the proponent to the environmental team was correct and valid at the time it was provided.
» It is assumed that the development site and power line corridor identified by the proponent represents a technically suitable site for the establishment of the proposed project.
» It is assumed correct that the proposed connection to the National Grid is appropriate in terms of viability and need.

- » Studies assume that any potential impacts on the environment associated with the proposed development will be avoided, mitigated, or offset.
- » This report and its investigations are project-specific, and consequently the environmental team did not evaluate any other power generation alternatives.

Refer to the specialist studies in **Appendices D1 – D3** for specific limitations.

DRAFT BASIC ASSESSMENT REPORT FOR PUBLIC REVIEW

This Draft Basic Assessment Report has been prepared by Savannah Environmental in order to assess the potential environmental impacts associated with proposed power line, facility substation complex and metering station, and associated infrastructure for the authorised Nxuba Wind Farm near Cookhouse in the Eastern Cape Province. This process is being undertaken in support of an application for environmental authorisation to the National DEA. The 30-day period for review is from **28 August 2015 - 28 September 2015**. The report is available for public review at the following locations:

- **Cookhouse Public Library**
- **Bedford Public Library**
- **www.savannahsa.com**

To obtain further information, register on the project database, or submit written comment please contact:

Savannah Environmental:
Gabriele Wood
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Post: P O Box 148 Sunninghill 2157

SECTION A: ACTIVITY INFORMATION

Has a specialist been consulted to assist with the completion of this section?	**YES**	**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

ACED Bedford Wind Farm (Pty) Ltd obtained an Environmental Authorisation on the 2nd February 2012 from the National Department of Environmental Affairs (DEA) for the construction of a Bedford Stage Wind Energy Facility and associated infrastructure (including grid connection) on a site near Cookhouse in the Eastern Cape Province (DEA Ref No. 12/12/20/1569/2). Great Fish River Wind Farm (Pty) Ltd also obtained an Environmental Authorisation on the 2nd February 2012 from the National DEA for the construction of a wind energy facility and associated infrastructure (including grid connection) on a site near Cookhouse in the Eastern Cape Province (DEA Ref No. 12/12/20/2290).

Based on technical aspects and location of the two above-mentioned projects, being located adjacent to each other, it was determined that the two projects will be more energy efficient when combined. Combining the two projects also resulted in optimisation, both from a commercial as well as an environmental point of view due it being possible to share some infrastructure. Thus the holder of the Environmental Authorisation for the combined projects was amended to Nxuba Wind Farm (RF) (Pty) Ltd and the project name used in reference to the combined projects was amended to Nxuba Wind Farm. Nxuba Wind Farm RF (Pty) Ltd has been awarded Preferred Bidder status within the Renewable Energy Independent Power Producer Procurement Programme (REIPPPP) Bid Window Four.

Through detailed feasibility studies, detailed design of the wind energy facility, and consultation with Eskom it has been determined that an alternative grid connection is technically and commercially optimal to connect the Nxuba Wind Farm to Eskom's Poseidon Substation. Therefore, Nxuba Wind Farm (RF) (Pty) Ltd proposes to construct a 132 kV facility substation complex and 132kV overhead power line to connect the authorised Nxuba Wind Farm to the existing Poseidon Substation, as well as a facility metering station at the point of connection adjacent the existing Poseidon Substation

(refer to Map 1 of Appendix 6). The proposed project would be constructed under an Own-Build agreement[3].

The proposed project will entail:

- » Construction of a 132kV facility substation complex (120 m x 120m) – the substation complex will house transformer equipment, offices and a control room;
- » Construction of a metering station (40m x 30m), the metering station will be located adjacent to Poseidon substation at the point of connection, in order to quantify net electrical output produced by the windfarm before it is transferred to the national grid; and
- » Construction of a 132kV overhead power line, to connect the proposed Nxuba substation to the existing Poseidon Substation. The proposed power line is ~2km in length and would replace the authorised grid connection associated with the Bedford and Great Fish components of the Nxuba facility.

A 300m wide corridor was investigated for the siting of the proposed power line and associated infrastructure (refer to Map 1 of Appendix 6). The power line will have associated access tracks (approximately 4m in width) where these are required. This infrastructure will fall within this assessed corridor, the final placement of which will depend on local geotechnical and topographical conditions.

The following property will be affected by the construction of the proposed substation and power line:

- » Portion 0 of Farm 73 (Van Wyks Kraal)

SG 21 Digit Code is listed below:

- » CO1000000000073000000

The proposed site is located ~12 km east of Cookhouse in the Blue Crane Local Municipality, which falls within the jurisdiction of the Sarah Baartman District Municipality, Eastern Cape.

Construction of the 132kV Overhead Power Line:

The Nxuba 132kV overhead power line considered within this Basic Assessment Report (BAR) will be approximately 2km in length and would be located within the 300m wide corridor. Overhead power lines are constructed in the following simplified sequence:

[3] Under this agreement the proposed infrastructure is constructed and operated by the proponent, i.e. Nxuba Wind Farm (RF) (Pty) Ltd.

Step 1: Surveying of the development area and negotiation with affected landowners;
Step 2: Final design and micro-siting of the infrastructure based on geotechnical and topographical conditions;
Step 3: Vegetation clearance and construction of access roads (where required);
Step 4: Construction of foundations;
Step 5: Assembly and erection of infrastructure on site;
Step 6: Stringing of conductors;
Step 7: Rehabilitation of disturbed areas and protection of erosion sensitive areas; and
Step 8: Continued maintenance.

Construction of the proposed power line will take approximately 3 to 6 months to complete. The duration of the construction period will however depend on the season and climatic conditions on site, e.g. strong winds might affect stringing of conductors which could result in delays.

Power line towers (or pylons) are an average distance of 200m apart but can exceed 500m depending on the topography and terrain to be spanned. Construction of minor access roads to the tower positions and construction of tower foundations will be the most significant construction phase activity resulting in environmental impact requiring mitigation. The footprint of each tower foundation will be a maximum of 10mx10m (100m²) depending on the final structure to be used. The actual size and type of foundation will be determined by the underlying geotechnical conditions and the type of structure to be used for the towers/pylons. The tower types are most likely to be steel monopoles generally in vertically staggered configuration except on line crossings under the existing 400kV lines where horizontal configuration would be used in order to maintain safety clearances. The aforementioned will need to be confirmed during detailed design as it will be informed by the local geotechnical and topographical conditions.

The minimum vertical clearance to buildings, poles and structures not forming part of the power line must be 3,8m, while the minimum vertical clearance between the conductors and the ground is 6,3m. The minimum distance between trees or shrubs and any bare phase conductor of a 132 kV power line must be 3,8m, allowing for the possible sideways movement and swing of both the power line conductor and the tree or shrub. The minimum clearance to other overhead line conductors will be 2m. The final definition of the centre line for the power line and co-ordinates of each bend in the line (if applicable) will be determined on receipt of an environmental approval of the assessed corridor by the environmental Authorities and after negotiations with landowners and final environmental and technical surveys. Optimal tower sizes and positions will be identified and verified using a ground survey (in terms of the Environmental Management Programme (EMPr)) requirements.

Construction of the Nxuba facility substation complex and metering station:

A facility substation complex will be required to evacuate the power into the Eskom grid. Substations are constructed in the following simplified sequence:

Step 1: Conduct geotechnical investigations to determine founding conditions;
Step 2: Conduct site survey;
Step 3: Vegetation clearance and construction of access road;
Step 4: Site grading and levelling;
Step 5: Construction of foundations;
Step 6: Import of substation components;
Step 7: Construction of on-site substation and control buildings;
Step 8: Rehabilitation of disturbed area and protection of erosion sensitive areas; and
Step 9: Testing and commissioning

The construction of the metering station will follow a similar sequence as that of the facility substation described above. As mentioned above, the proposed metering station area will be fenced off, with the dimensions of approximately 30m x 40m as a maximum. The purpose of the metering station is to measure net electricity production by the Nxuba Wind Farm before feeding into the national grid.

Operation and Maintenance Phase

The proposed power line, facility substation and metering station will require routine maintenance work throughout the operation period, which would be the same as that of the Power Purchase Agreement (PPA) of the Nxuba Wind Farm, i.e. at least 20 years. During operation, the facility substation, metering station and the power line will be accessed via an existing District gravel road (~12km) off the N10, other existing gravel roads in the area and any access roads established during the construction phase. During this operation phase vegetation within the power line servitude, and around the facility substation and the metering station will require management only if it impacts on the safety and operational objectives of the facility substation, the metering station and the power line. The maintenance of the grid connection infrastructure will be the responsibility of Nxuba Wind Farm (RF) (Pty) Ltd.

Decommissioning Phase

The power line, facility substation complex and metering station are expected to have a lifespan of more than 25 years (with maintenance) and the infrastructure would only be decommissioned once it has reached the end of its economic life or is no longer required. The PPA of the Nxuba Wind Farm, in terms of the REIPPPP is 20 years, and therefore the proposed power line, facility substation complex and metering station

might not be needed after 20 years if the Nxuba Wind Farm is decommissioned. If the Nxuba Wind Farm is decommissioned and the proposed power line, facility substation complex and metering station are no longer needed, the decommissioning activities would comprise of; the disassembly of the individual components and removal from site. This phase would then include the following 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 at the time of decommissioning.

c) Rehabilitation

Disturbed areas (where infrastructure has been removed) will be rehabilitated, if required, depending on the future land-use of the site and the relevant legislation applicable at the time of decommissioning.

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

Listed activity as described in GN R.983 and 985	Description of project activity
GN R.983, Activity 11 (i) The development 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	A 132 kV power line would be constructed (~2km in length) outside an urban area to connect the authorised Nxuba Wind Farm facility to the Poseidon Substation. In addition, a 132kV onsite substation complex and facility metering station would be constructed on site to facilitate the grid connection.
GN R983, Activity 24 (ii) The development of A road with a reserve wider than 13.5 metres, or where no reserve exists where the road is wider than 8 metres.	The project will require the development of a road wider than 13.5 m, or where no reserve exists were the road is wider than 8 metres.
GN R983, Activity 28 (ii) Residential, mixed, retail, commercial, industrial or institutional developments where such land was used for agriculture on or after 01 April 1998 and where such development: (ii) will occur outside an urban area, where the total land to be developed is bigger than 1 hectare.	The combined footprint of the proposed power line, substation and ancillary infrastructure will be equal to or exceed 1 hectare and is proposed on land used for agriculture.

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.982. 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

Facility Substation: While a number of alternatives were assessed during the evolving development of the wind farm, no site alternatives are applicable for the proposed Nxuba facility substation complex which is considered key infrastructure for the authorised Nxuba Wind Farm. The substation site is related directly to the optimised layout of the Nxuba Wind Farm which has been subjected to in-depth environmental and technical investigations. The site of the proposed substation will be within the authorised Nxuba Wind Farm footprint, and the siting thereof is based on the following:

» Grid connection optimisation - The proposed substation is located ~2km to the east of the existing Poseidon Substation;
» The location is based on discussions with various stakeholders including the landowner and Eskom – last mentioned required the proposed power line to feed into the western part of Poseidon to accommodate existing infrastructure;
» The location was optimised to avoid any environmental sensitivity buffers, e.g. waterbodies, identified in previous studies relevant to the Nxuba Wind Farm (refer to figure 1.3);
» The proposed substation site does not interfere with the optimised wind energy facility layout.
» The proposed substation location is technically suitable for construction (topography, access and ground conditions).
» The location marks the centroid of the reticulation of the wind farm, limiting cable routings/trenches as well as electrical losses.
» The alignment is on a flat area which requires less cut and fill compared to other alternatives.

Alternative 1: technically preferred alternative		
Description	**Lat (DDMMSS)**	**Long (DDMMSS)**
The proposed facility substation site is proposed within the authorised Nxuba Wind Farm development	32° 44'41.19"S	25°56'29.34"E

boundary, which is situated east of the existing Poseidon Substation. This location within the authorised wind facility project site presents optimal grid connection.		
Alternative 2		
Description	Lat (DDMMSS)	Long (DDMMSS)
Alternative 3		
Description	Lat (DDMMSS)	Long (DDMMSS)

In the case of linear activities:

As indicated in the project description above, the authorised Bedford Stage Wind Energy Facility and associated infrastructure (DEA Ref No. 12/12/20/1569/2) and Great Fish River wind energy facility and associated infrastructure (DEA Ref No. 12/12/20/2290) were combined to form the Nxuba Wind Farm. This was based on technical aspects and location of the two projects, being situated adjacent to each other. The resultant Nxuba Wind Farm has been selected as a Preferred Bidder project in Bid Window Four of the REIPPP.

As part of the EIA processes undertaken, technically feasible power line corridors were considered/assessed and recommended for authorisation provided that recommended mitigation measures are implemented. The following two (2) separate power line corridors were subsequently authorised with the Great Fish River Wind Energy Facility and the Bedford Stage Wind Energy Facility:

- A 132kV Power line from the authorised Great Fish River Wind Energy Facility to the Poseidon Substation. The authorised power line is approximately 4002.5m in length (refer to Figure 1.2).
- A 132kV Power line from the authorised Bedford Stage Wind Energy Facility to the Poseidon Substation. The authorised power line is approximately 900.8M in length (refer to Figure 1. 2).

The authorised power lines from the Great Fish Wind Energy Facility and Bedford Stage Wind Energy Facility were considered within the EIA process undertaken for the two facilities and are detailed within the Bedford Stage Wind Energy Facility Final EIA Report (dated November 2011) and the Great Fish Wind Energy Facility Basic Assessment Report (dated December 2011).

Based on the combination of the two projects, Nxuba Wind Farm (RF) (Pty) Ltd has optimised the layout of the Nxuba Wind Facility. The optimised layout has taken the environmental sensitivities identified during the EIA processes into consideration. Only a single power line is required to connect the Nxuba Wind Energy Facility to the grid. Neither of the above-mentioned authorised power lines are considered feasible in this regard based on technical and environmental considerations in finalising the optimised layout for

the facility. Therefore the power line route was revised, based on detailed design, to fit the optimised Wind Energy Facility layout which resulted in the new application for an alternative power line connection. As a result of the limited distance between the proposed substation site and the grid connection point at Poseidon (~2km), and technical considerations regarding the optimised wind farm layout, no feasible alternative power line corridors have been identified.

Alternative:	**Latitude (S):**	**Longitude (E):**
Alternative Power line corridor 1: (preferred)		
• Starting point of the activity	32° 44'39.47"	25° 56'27.80"
• Middle/Additional point of the activity	32° 44'25.31"	25° 55'56.06"
• End point of the activity	32° 44'25.82"	25° 55'20.73"
Alternative:		
• Starting point of the activity		
• Middle/Additional point of the activity		
• End point of the activity		
Alternative A3 (if any)		
• Starting point of the activity		
• Middle/Additional point of the activity		
• End point of the activity		

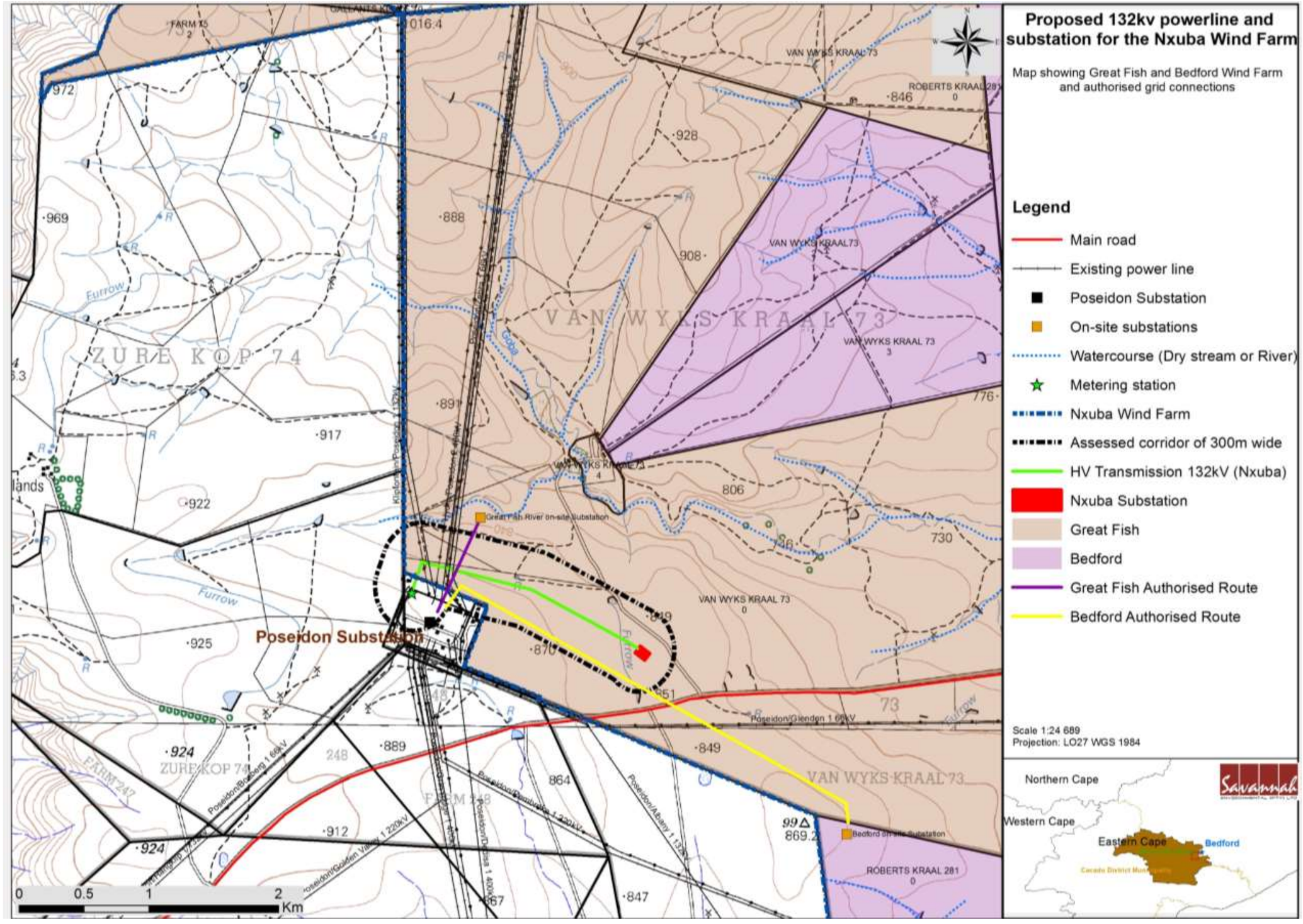

Figure 1.2: Layout map indicating the preferred power line corridor and the authorised Great Fish River Wind Farm and Bedford Stage Wind Farm power line routes

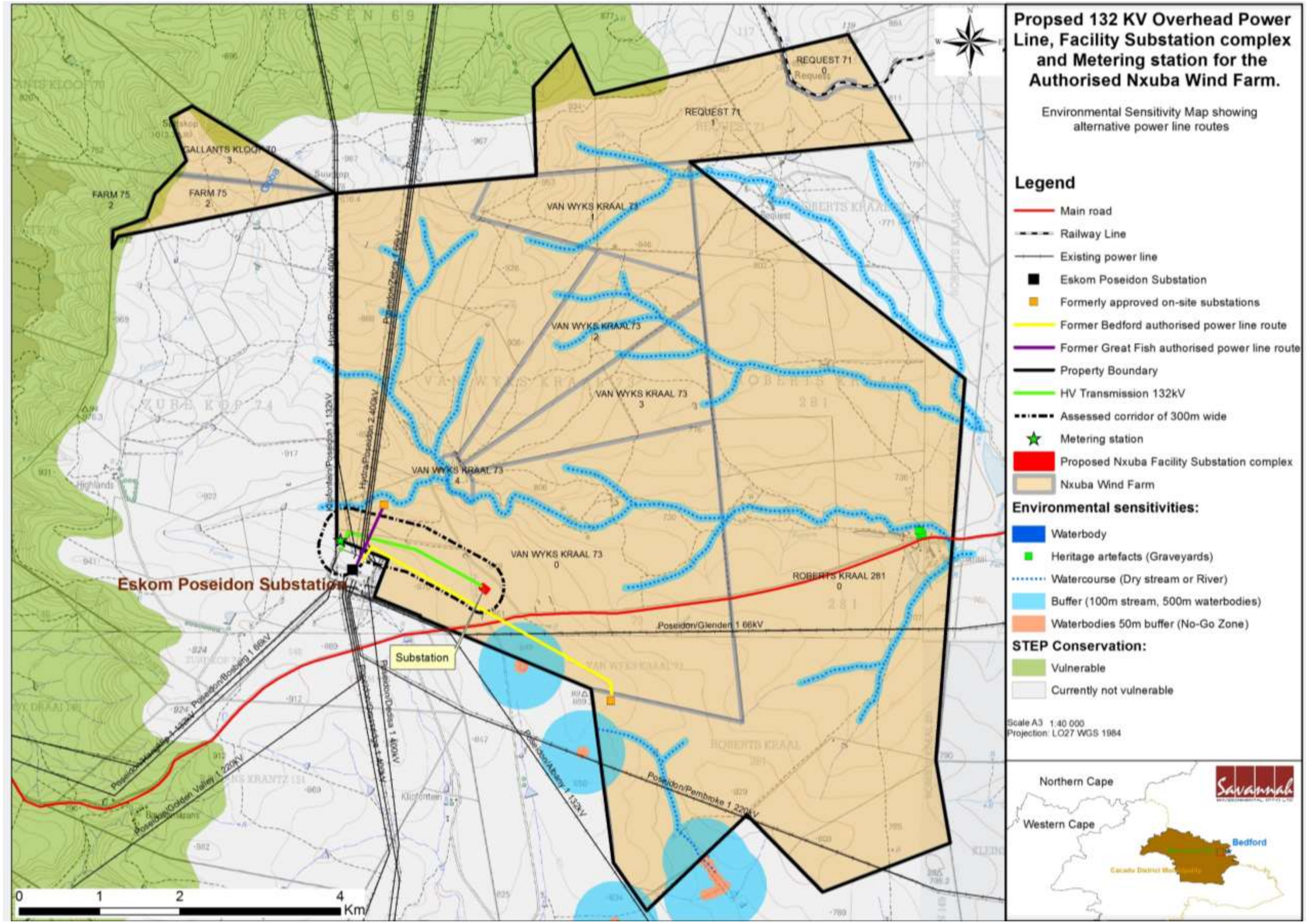

Figure 1.3: Sensitivity Map indicating the preferred power line corridor and the authorised Great Fish River Wind Farm and Bedford Stage Wind Farm power line routes

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.

A table has been attached as **Appendix J1** detailing all the proposed power line coordinates.

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

The design of the power line is required to conform to certain industry standards and must fit in with the existing network systems, technology and infrastructure. The broader corridor being assessed within this Basic Assessment allows for the avoidance of potential environmental sensitivities (discussed later in this report). No layout alternatives have therefore been identified for assessment as slightly microsited layout variations are possible within the 300m wide assessed corridor.

Alternative 1 (preferred alternative)		
Description	Lat (DDMMSS)	Long (DDMMSS)
Alternative 2		
Description	Lat (DDMMSS)	Long (DDMMSS)
Alternative 3		
Description	Lat (DDMMSS)	Long (DDMMSS)

c) Technology alternatives

No technological alternative to a power line exists for the transmission or distribution of electricity. The proposed power line, substation complex and metering station will need to conform to certain industry standards which consist of proven technologies that are widely accepted within the industry.

Alternative 1 (preferred alternative)
Alternative 2

Alternative 3

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

The design of the facility substation, metering station and power line will be based on industry standards and does not significantly affect the environmental impact of the proposed development in any way as its footprint will not exceed the specifications or extend beyond the assessed corridor. No defined pylon structure has been confirmed at this stage and will depend on technical requirements and industry standards. The line must be constructed according to the authorised standards for a power line of this nature and extent. The structure to be utilised for the power line towers/pylons will further be informed by the local geotechnical and topographical conditions.

Alternative 1 (preferred alternative)
.
Alternative 2
Alternative 3

e) No-go alternative

This is the option of not constructing the power line, the proposed substation complex and metering station. This option is assessed as the "no go alternative" in this Basic Assessment Report (also refer to Appendix F).

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 Substation (preferred)	120m x 120m = 14,400m^2
Alternative SS22 (if any)	m^2
Alternative SS33 (if any)	m^2

or, for linear activities:

Alternative:	Length of the activity:
Alternative Power line corridor **(preferred)**	± 2 km
Alternative A2(if any)	
Alternative A3 (if any)	

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

Alternative:	Size of servitude:
Substation	Up to 120m x 120m
Alternative Power line corridor **(preferred)**	300m
Alternative A2 (if any)	
Alternative A3 (if any)	

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:

The site can be accessed via an existing District gravel road (~12km) off the N10. The road is called the Patryshoogte road and bisects the site. This is the same road that will serve as the access road for the authorised Nxuba Wind Farm. In some areas new access roads may be required to be established during the construction phase along the power line route. The access road required for the construction of the power line, and maintenance thereafter, will follow the same alignment as the power line itself and will be micro-sited within the assessed 300m corridor to avoid any sensitive areas. Where possible, existing roads will be used. However, as per the findings of the specialist reports (discussed further on in this report), the area is not sensitive (also refer to Appendix A3) and access roads will therefore result in limited impacts. The road will be approximately 4m wide.

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 (refer to Appendix A1).

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)

A3 Locality maps have been attached as **Appendix A1 and A2**

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.

Refer to **Appendices A1 and A2**

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.

An A3 Sensitivity map and a CBA map has been attached as **Appendix A3**.

Ecological Sensitivity

The study area comprises of grassland vegetation which was uniform throughout the site with a greater number of *Acacia karoo* trees occurring in northern end boundary of the project area. This vegetation type has a high number of different plant species but a low number of plant Species of Conservation Concern (SCC) (only one identified by the ecologist), and is generally in moderate to low condition as the specific area (where the project is proposed) is used for grazing and includes other forms of disturbance (loss of grassland vegetation due to farming activities). (Please refer to the Ecological Report in Appendix D for more information).

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 are attached within **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 is included within **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
Nxuba Wind Farm (RF) (Pty) Ltd has received Environmental Authorisation for the Nxuba Wind Farm, and the project has been selected as a Preferred Bidder from Round Four (4) of the Renewable Energy Independent Power Producers Procurement Programme (REIPPPP). The property on which the wind energy facility is proposed has been rezoned for this purpose. The siting for the facility substation complex, metering station and the power line falls within the authorised wind facility property boundary.			
2. Will the activity be in line with the following?			
(a) **Provincial Spatial Development Framework (PSDF)**	YES		Please explain
The PSDF for Eastern Cape Province aims at 'building a prosperous, sustainable growing provincial economy to reduce poverty and improve social development'. The proposed project will address such aspects of the Province since it will enable the wind energy facility to connect to the electricity grid, which will have a positive economic impact at a local and regional scale.			

(b) Urban edge / Edge of Built environment for the area		**NO**	Please explain
The power line, facility substation complex and metering station fall outside the urban edge. Therefore the proposed project does not impact upon the urban edge.			
(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 project will not compromise IDP objectives but will assist in reaching these objectives as the IDP of the municipality aims to ensure that all formal households have access to reliable and affordable electricity as well as streetlights, which supports safety and access for emergency services. This project will assist in supporting the local electricity supply through its contribution to the National Grid. The project will further assist in job creation which will further help achieve IDP objectives.			
(d) Approved Structure Plan of the Municipality	**YES**		Please explain
The municipality is aware of the approved Nxuba Wind Farm project. The proposed power line and substation supports this approved project and do not compromise the structure of the municipal plan.			
(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
There is no approved EMF which encompasses the study area.			
(f) Any other Plans (e.g. Guide Plan)	**YES**		Please explain
Eastern Cape Biodiversity Conservation Plan (ECBCP) The ECBCP is a first attempt at detailed, low-level conservation mapping for land-use planning purposes. Specifically, the aims of the Plan were to map critical biodiversity areas through a systematic conservation planning process. The current biodiversity plan includes the mapping of priority aquatic features, land-use pressures, and critical biodiversity areas and develops guidelines for land and resource-use planning and decision-making. The main outputs of the ECBCP are "critical biodiversity areas" or CBAs, which are allocated the following management categories: 1. CBA 1 = Maintain in a natural state 2. CBA 2 = Maintain in a near-natural state			

The ECBCP map for the study area shows that the whole project area is not in a CBA area. Thus this area has not been identified as a landscape that is critical for conserving biodiversity and maintaining ecosystem functioning. The current status of the project area and the footprint of the proposed project does not conflict with the recommended guidelines of the ECBCP.			
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 purpose of the proposed power line, facility substation complex and metering station is to enable the connection of the authorised Nxuba Wind Farm to the National electricity grid. This project is not specifically considered within the existing approved SDF.			
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 main purpose of the proposed power line, facility substation complex and metering station is to enable the connection of the authorised Nxuba Wind Farm to the National electricity grid. The proposed project will enable the Nxuba wind energy facility to connect to the electricity grid, which will have a positive economic impact at a local and regional level in terms of job creation as well as contributing to alleviate South Africa's existing energy supply shortage. As the project is a Preferred Bidder project, the social responsibility requirements of the IPP in terms of the REIPPPP will be implemented and the positive impacts will therefore be realised.			
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.)	**YES**		Please explain
All the services needed for the project have been adequately provided for and should any need for other services arise the relevant authority will be communicated with.			

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.)		**NO**	Please explain
The proposed project is to be developed by a private developer and not the municipality. It therefore does not fall within the infrastructure planning of the municipality. The project will not have any implications for the municipality apart from assisting them in their achievement of their IDP objectives.			
7. Is this project part of a national programme to address an issue of national concern or importance?	**YES**		Please explain
Within a policy framework, the development of renewable energy in South Africa is supported by the White Paper on Renewable Energy (November 2003). In order to meet the long-term goal of a sustainable renewable energy industry, a goal of 17,8GW of renewables by 2030 has been set by the Department of Energy (DoE) within the Integrated Resource Plan (IRP) 2010. The energy will be produced mainly from wind, solar, biomass, and small-scale hydro (with wind and solar comprising the bulk of the power generation capacity). This amounts to ~42% of all new power generation being derived from renewable energy forms by 2030. This is however dependent on the assumed learning rates and associated cost reductions for renewable options. The Nxuba Wind Farm has been selected as a preferred bidder project in terms of the DoE's REIPPPP and is in the process of working towards Financial Close. In order to integrate the power generated at this facility into the electricity grid, the facility is required to be connected to the Poseidon Substation as described in this report. The proposed project will facilitate this connection and therefore forms a key component of the Nxuba Wind Farm without which it won't be able to connect to the National 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
The Nxuba Wind Farm is an environmentally authorised project and a preferred bidder project in terms of Round Four (4) of the REIPPPP. One of the main reasons for the location of the Nxuba Wind Farm, and therefore the associated power line, facility substation complex and metering station, is the nearby Poseidon Substation which allows the Nxuba Wind Farm to easily connect to the National grid. The position of the proposed facility substation complex, metering station and power line route are considered to be the most feasible options for the location of this infrastructure, taking technical and environmental (social and biophysical) issues into consideration.			

9. Is the development the best practicable environmental option for this land/site?	**YES**		Please explain
The Nxuba Wind Farm is an authorised facility and a preferred bidder project in terms of Round Four (4) of the REIPPPP. The location of the proposed facility substation complex, metering station site and power line corridor are considered to be the most feasible options for the location of this infrastructure, taking technical and environmental (social and biophysical) issues into consideration. As the proposed project falls within the boundaries of the authorised Nxuba wind energy facility, the location of this infrastructure is considered the best practicable option to minimise environmental impacts while also taking technical requirements into account.			
10. Will the benefits of the proposed land use/development outweigh the negative impacts of it?	**YES**		Please explain
The specialist studies undertaken as part of this Basic Assessment conclude that the development of the proposed project will have low to medium environmental impacts. The project is also proposed within the boundaries of the already authorised Nxuba Wind Farm. The proposed project will facilitate the connection of the authorised Nxuba Wind Farm to the National grid thereby facilitating the distribution of renewable energy nationally. This will have a positive impact at a local, regional and national level. The benefits of the project are considered to outweigh the negative impacts. Further benefits in the form of job creation and direct and indirect economic benefits will also be realised.			
11. Will the proposed land use/development set a precedent for similar activities in the area (local municipality)?		**NO**	Please explain
The proposed power line and facility substation are associated with the authorised Nxuba Wind Farm. Any other similar activities in the area would depend on the feasibility of developing additional wind energy facilities in this area (thus requiring power lines).			
12. Will any person's rights be negatively affected by the proposed activity/ies?		**NO**	Please explain
A private landowner will be affected by the proposed project. This landowner is a participant landowner within the authorised Nxuba Wind Farm and has been consulted by the proponent and the environmental team and is well aware of the proposed project.			
13. Will the proposed activity/ies compromise the "urban edge" as defined by the local municipality?		**NO**	Please explain
The proposed project fall outside the urban edge. Therefore the proposed project does not impact upon the urban edge.			
14. Will the proposed activity/ies contribute to any of the 17 Strategic Integrated Projects (SIPS)?	**YES**		Please explain
The proposed power line and facility substation will **indirectly** support the objectives for Strategic Infrastructure Projects (SIP): » SIP 8: Green energy in support of the South African economy – support sustainable green energy initiatives on a National scale through a diverse range of clean energy			

options as envisaged in the Integrated Resource Plan (IRP 2010) - The authorised Nxuba wind energy facility development will assist in promoting balanced economic development, economic opportunity, assist in achieving socio-economic needs, promote jobs through job creation and assist with economic development. The proposed facility substation complex, metering station and power line from a construction perspective will give people living in the area opportunities to gain employments which would address the socio economic needs of individuals to some extent. The proposed project in operation will support the wind energy facility which will result in an increase of sustainable electricity supply in the Eastern Cape and nationally, which will aid in meeting the electricity demand of the country. This will increase and balance economic development, which in effect will address the socio-economic needs of the people in the area.

15. What will the benefits be to society in general and to the local communities?	Please explain
The main purpose of the proposed power line, facility substation and metering station is to enable the connection of the authorised Nxuba Wind Farm to the National electricity grid. The proposed project will enable the wind energy facility to connect to the National electricity grid, which will have a positive economic impact at a National, local and regional level. As the project is a Preferred Bidder project, the social responsibility requirements of the IPP in terms of the REIPPPP will be implemented. This will result in job creation and inject money into the local and regional economy, as described above.	

16. Any other need and desirability considerations related to the proposed activity?	Please explain
The power line, facility substation complex and metering station forms part of the electrical infrastructure of the Nxuba Wind Farm that will produce renewable energy. The Project will contribute to the distribution of power to the national grid once the wind facility is constructed under the REIPPPP.	

17. How does the project fit into the National Development Plan for 2030?	Please explain
By 2030 South Africa aims to reduce carbon emissions, promote economic development and increase the GDP. To achieve this, the Province has aimed to improve Infrastructure and Basic Services; Socio-economic Development; Institutional Transformation; Good Governance and Public Participation; Financial viability and Management. The wind facility development of which the power line, facility substation complex and metering station will form part, will assist in reducing the carbon footprint, as it will be transporting energy produced from a renewable energy project (Wind) and it will facilitate the infrastructure growth in the area including job creation, local content, enterprise development and other socio-economic benefits and the positive impacts will therefore be realised.	

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 biophysical environment, socio-economic conditions and cultural heritage.

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.

Section 2 of NEMA states that environmental management must place people and their needs at the forefront, and serve their physical, psychological, developmental, cultural and social interests equitably. These principles of NEMA include the following:

» Development must be sustainable;
» Pollution must be avoided or minimised and remedied;
» Waste must be avoided or minimised, reused or recycled;
» Negative impacts must be minimised; and
» Responsibility for the environmental health and safety consequences of a policy, project, product or service exists throughout its life cycle.

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. The project also forms part of a renewable energy project which contributes to reducing the release of CO_2 into the atmosphere through energy production by means of coal and thereby helping to curb climate change.

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 Competent 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:

Table 1.1: 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 EIA 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 GNR 983 and 985 of June 2010 a Basic Assessment Process is required to be undertaken for the proposed project.	Department of Environmental Affairs – competent authority Eastern Cape Department of Economic Development Environmental Affairs & Tourism (DEDEAT) – commenting authority	The listed activities triggered by the proposed power line, facility substation complex and metering station have been identified and assessed in the EIA process being undertaken (i.e. Basic Assessment). 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 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.	Department of Environmental Affairs	While no permitting or licensing requirements arise directly by virtue of the proposed project, this 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. The implementation of mitigation measures are included as part of the

Legislation	Applicable Requirements	Relevant Authority	Compliance Requirements
			Draft EMP and 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 DEDEAT 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. There is no requirement for a noise permit in terms of the legislation.
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. In terms of S19, the project proponent must ensure that reasonable measures are taken throughout the life cycle of this project to prevent and remedy the effects of pollution to water resources from occurring, continuing, or recurring.	Department of Water Affairs and Sanitation	No water use license (WUL) will be required in terms of Section 21 of the Act.
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.	Department of Mineral Resources	As no borrow pits are expected to be required for the construction of the power line, no mining permit or right is required to be obtained.

Legislation	Applicable Requirements	Relevant Authority	Compliance Requirements
National Environmental Management: Air Quality Act (Act No 39 of 2004)	S18, S19, and S20 of the Act allow certain areas to be declared and managed as "priority areas." Declaration of controlled emitters (Part 3 of Act) and controlled fuels (Part 4 of Act) with relevant emission standards. GN R 827 – National Dust Control Regulations prescribes general measures for the control of dust in all areas	Department of Environmental Affairs Sarah Baartman District Municipality	No permitting or licensing requirements arise from this legislation. Dust Control Regulations describe the measures for control and monitoring of dust, including penalties. These regulations will be applicable during the construction phase of the project.
National Heritage Resources Act (Act No 25 of 1999)	S38 states that Heritage Impact Assessments (HIAs) are required for certain kinds of development including » The construction of a road, power line, pipeline, canal or other similar linear development or barrier exceeding 300 m in length; » Any development or other activity which will change the character of a site exceeding 5 000 m^2 in extent The relevant Heritage Authority must be notified of developments such as linear developments (i.e. roads and power lines), bridges exceeding 50 m, or any development or other activity which will change the character of a site exceeding 5 000 m^2; or the re-zoning of a site exceeding 10 000 m^2 in extent. This notification must be provided in the early stages of initiating that	South African Heritage Resources Agency Eastern Cape Provincial Heritage Resources Authority	A permit may be required should identified cultural/heritage sites on site be required to be disturbed or destroyed as a result of the proposed development. No cultural of heritage sites were identified during the site inspection by the Heritage specialists.

Legislation	Applicable Requirements	Relevant Authority	Compliance Requirements
	development, and details regarding the location, nature and extent of the proposed development must be provided. » Stand alone HIAs are not required where an EIA is carried out as long as the EIA contains an adequate HIA component that fulfils the provisions of S38. In such cases only those components not addressed by the EIA should be covered by the heritage component.		
National Environmental Management: Biodiversity Act (Act No 10 of 2004)	In terms of S57, the Minister of Environmental Affairs has published a list of critically endangered, endangered, vulnerable, and protected species in GNR 151 in Government Gazette 29657 of 23 February 2007 and the regulations associated therewith in GNR 152 in GG29657 of 23 February 2007, which came into effect on 1 June 2007. In terms of GNR 152 of 23 February 2007: Regulations relating to listed threatened and protected species, the relevant specialists must be employed during the EIA Phase of the project to incorporate the legal provisions as well as the regulations associated with listed threatened and protected species (GNR 152) into specialist reports in order to identify permitting requirements at an early stage of the EIA Phase.	Department of Environmental Affairs DEDEAT	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. A Specialist Ecological Assessment was undertaken as part of the Basic Assessment process (refer to Appendix D). As such the potential occurrence of critically endangered, endangered, vulnerable, and protected species, as well as critically endangered (CR), endangered (EN), vulnerable (VU) or protected ecosystems and species and the potential for them to be affected has been considered. One SCC was identified within the study area. A permit will be required

Legislation	Applicable Requirements	Relevant Authority	Compliance Requirements
	The Act 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, 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, (GG 34809, GN 1002), 9 December 2011).		for the removal or relocation of any SCC if they are to be affected.
National Environmental Management: Biodiversity Act 10 of 2004	GNR 598: The Alien and Invasive Species (AIS) Regulations provides for the declaration of weeds and invader plants.	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.
National Forests Act (Act No. 84 of 1998)	In terms of S5(1) no person may cut, disturb, damage or destroy any protected tree or possess, collect, remove, transport, export, purchase, sell donate or in any other manner acquire or dispose of any protected tree or any	National Department of Forestry	No protected trees were identified within the power line corridor or at the facility substation complex and metering station site. Therefore, no permit is required in this regard.

Legislation	Applicable Requirements	Relevant Authority	Compliance Requirements
	forest product derived from a protected tree, except under a license granted by the Minister to an (applicant and subject to such period and conditions as may be stipulated". » GN 1042 provides a list of protected tree species.		
National Veld and Forest Fire Act (Act 101 of 1998)	In terms of S13 the landowner would be required to burn firebreaks to ensure that should a veldfire occur on the property, that it does not spread to adjoining land. In terms of S13 the landowner 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	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,	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
	manufacture, sale, use, operation, modification, disposal or dumping of such substances and products. » 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.		
National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008)	The Minister may by notice in the *Gazette* publish a list 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.	National Department of Water and Environmental Affairs (hazardous waste) DEDEAT (general waste)	As no waste disposal site is 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 EMPr (refer to Appendix G).

Legislation	Applicable Requirements	Relevant Authority	Compliance Requirements
	» Making other changes to the particulars on the list. In terms of the Regulations published in terms of this Act (GN 921), A Basic Assessment or Environmental Impact Assessment is required to be undertaken for identified listed activities (Category A and B) while Category C Activities (such as storage of waste) must be undertaken in accordance with the necessary norms and standards. 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 » 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	» South African National Roads Agency Limited (national roads)	» An abnormal load/vehicle permit may be required to transport the various components to site for

Legislation	Applicable Requirements	Relevant Authority	Compliance Requirements
	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.	» Provincial Department of Transport	construction. These include route clearances and permits will be required for vehicles carrying abnormally heavy or abnormally dimensioned loads. » Transport vehicles exceeding the dimensional limitations (length) of 22m. » Depending on the trailer configuration and height when loaded, some of the components may not meet specified dimensional limitations (height and width).
Provincial Legislation/ Policies / Plans			
Nature Conservation Ordinance (Act No. 19 of 1974)	» Article 63 prohibits the picking of certain fauna (including cutting, chopping, taking,	Eastern Cape DEDEAT	Permitting or licensing requirements such as plant relocation may arise from this legislation for the proposed

Legislation	Applicable Requirements	Relevant Authority	Compliance Requirements
	and gathering, uprooting, damaging, or destroying). » Schedule 3 lists endangered flora and Schedule 4 lists protected flora. » Articles 26 to 47 regulate the use of wild animals.		activities to be undertaken for the proposed project.

12.WASTE, EFFLUENT, EMISSION AND NOISE MANAGEMENT

a) Solid waste management

Will the activity produce solid construction waste during the construction/initiation phase?	**YES**
If YES, what estimated quantity will be produced per month?	Not determined at this time. Minimal waste is expected to be generated by the activity

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

It is anticipated that construction waste will be comprised mainly of soil material from excavation activities as well as metal and cabling offcuts. Non-recyclable waste will be removed from site by a suitable contractor and will be transported to the nearest registered waste disposal facility for appropriate disposal.

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.

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? **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? **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

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:

N/A

c) Emissions into the atmosphere

Will the activity release emissions into the atmosphere other than 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, localised dust generation and emissions from vehicles and machinery. However the dust and emissions will be of short term duration and have limited impact in terms of extent and severity. Appropriate dust suppression measures must be implemented to reduce the impacts. It is recommended that construction vehicles be serviced and kept in good mechanical condition in order 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 project. It is however anticipated that the noise will be localised and contained within the construction area and its immediate surroundings. The operation phase will not generate any noise.

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:

Not applicable. The project in its very nature is aimed at electricity distribution.

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

Not applicable. The project in its very nature is aimed at providing alternative energy to the National grid.

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? **YES**

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	Eastern Cape Province
District Municipality	Sarah Baartman District Municipality
Local Municipality	Blue Crane Route Local Municipality
Ward Number(s)	1
Farm Name & Portion number	Portion 0 of Farm Van Wyks Kraal, 73
SG Code	C01000000000073000000

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:

The proposed site has been rezoned Special Zone: Agriculture and Wind Energy Facility to accommodate the find 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.

Alternative 1 - Facility Substation complex and metering station (preferred alternative)

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 1 – Overhead power line route: (Preferred Alternative)

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 2 (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 (**both alternatives**):

2.1 Ridgeline	2.4 Closed valley	**2.7 Undulating plain / low hills**	**X**
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?

	Alternative Substation complex and metering station 1 (Preferred):		**Alternative power line 1 (preferred):**		**Alternative 2 (if any):**	
Shallow water table (less than 1.5m deep)		**NO**		**NO**	YES	NO
Dolomite, sinkhole or doline areas		**NO**		**NO**	YES	NO
Seasonally wet soils (often close to water bodies)	**YES**		**YES**		YES	NO
Unstable rocky slopes or steep slopes with loose soil		**NO**	YES	**NO**	YES	NO

	Alternative Substation complex and metering station 1 (Preferred):		**Alternative power line 1 (preferred):**		**Alternative 2 (if any):**	
Dispersive soils (soils that dissolve in water)	**YES**		**YES**	**NO**	YES	NO
Soils with high clay content (clay fraction more than 40%)		**NO**		**NO**	YES	NO
Any other unstable soil or geological feature		**NO**		**NO**	YES	NO
An area sensitive to erosion	**NO**		**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

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 infestationE	Veld dominated by alien speciesE	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. **(Refer to the Ecological Report in Appendix D)**

The Nxuba Wind Farm site falls within two vegetation types namely:

The Bedford Dry Grassland is found to occur in the project area (Mucina and Rutherford, 2006). This vegetation type is classified as Least Threatened. The Subtropical Thicket

Ecosystem Programme (STEP) describes this vegetation as the Aliwal North Dry Grassland vegetation type and classifies it as "Currently not Vulnerable". Other spatial mapping tools indicate that the study area does not occur in a Critical Biodiversity Area, is not a Protected Area but occurs in a focus Area (Amathole Tarkastad Focus Area).

Only a single species was found to be a SCC. Although only a single species was recorded during the survey it is possible that more may be found during the construction phase due to the habitat present. Species which could be present include *Anacampseros arachnoides*, *Ammocharis coranica*, *Brunsvigia* sp, Bergeranthus *vespertinus*, *Cynanchum natalensis*, *Euphorbia globosa*, *Trichodiadema intonsum*, *Tritonia laxifolia* and *Trichodiadema orientale*. A permit from EC DEDEAT will be required for the removal of any SCC if they are to be affected.

Alien species such as *Opuntia aurantiaca* and *Opuntia ficus-indica* were recorded within the project area at low densities. Disturbance as a result of the proposed project could encourage the further establishment of weedy species such as these species in the area. Proper mitigation measured should be put in place to ensure that there is no further spread of alien invasive species.

5. SURFACE WATER

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.

Not applicable.

6. LAND USE CHARACTER OF SURROUNDING AREA

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:

N/A

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 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 A3 **(Refer to the Sensitivity Map in Appendix A3)**

7. CULTURAL/HISTORICAL FEATURES

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**

N/A

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: **(Heritage impact assessment in Appendix D)**

The proposed area for the developments is relatively flat, well-covered with dense grass and dotted with numerous anthills. The construction of the Poseidon Substation, several power lines, roads and small scale farming activities has disturbed the area severely in the past. No archaeological or historical sites/materials were observed within the proposed project footprint. However, due to dense grass cover affecting archaeological visibility, it is possible that such remains may be covered by soil and vegetation or could be present below ground. This will be monitored during construction.

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 2011 Census data, 38 412 individuals living in the municipality are economically active (i.e., employed or unemployed but looking for work), and of these, 21,5% are unemployed. The economically active youth (15–34 years) in the area total 19 634, of which 26,7% are unemployed.

Economic profile of local municipality:

Traditionally characterised by economic activities largely focused on tourism and agriculture. Example: Ward 1's sectoral employment profile shows that just under a quarter (~26%) of formal employment is provided by the Agricultural sector followed by the Wholesale and Retail sector (~17%), the Construction sector (~12%) and the Community Services sector (~10%).

Level of education:

The level of education within the Municipality is poor. Approximately 4.9% of the population aged 20+ has no schooling, while only 24.5% have matriculated. Approximately 9.5 % go on to obtain an education at University/Technikon level.

b) Socio-economic value of the activity

What is the expected capital value of the activity on completion?	Approximately R85 mil	
What is the expected yearly income that will be generated by or as a result of the activity?	The substation complex, power line and metering station will allow the authorised Nxuba wind farm to connect to the National grid. The local community will benefit indirectly from the socio-economic initiatives that form part of the REIPPP for the wind farm, as well as job creation which will result in a trickle down economic effect. No income will however be earned from the line and substation directly.	
Will the activity contribute to service infrastructure?	**YES**	
Is the activity a public amenity?		**NO**
How many new employment opportunities will be created in the development and construction phase of the activity/ies?	Construction - ~30 Operation - ~2	

What is the expected value of the employment opportunities during the development and construction phase?	~ R1.75mil
What percentage of this will accrue to previously disadvantaged individuals?	Estimated at 70%
How many permanent new employment opportunities will be created during the operational phase of the activity?	Estimated at 2
What is the expected current value of the employment opportunities during the first 10 years?	Estimated at R3.5mil
What percentage of this will accrue to previously disadvantaged individuals?	Estimated at 50%

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. **(Refer to the Ecological Report in Appendix D)**

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

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	0%	N/A
Near Natural (includes areas with low to moderate level of alien invasive plants)	40%	The study area comprises of natural habitat which has been disturbed to some extent through grazing but is not severely degraded. A portion of the project area is already affected by other power lines and the existing substation (Poseidon Substation).
Degraded (includes areas heavily invaded by alien plants)	40%	A portion of the project area already has other power lines and the existing substation (Poseidon Substation).
Transformed (includes cultivation, dams, urban, plantation, roads, etc.)	20%	The project area falls within the area used for grazing. The general area includes farm roads and farm dams.

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**	[redacted]	**NO**	[redacted] **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)

Vegetation types

Bedford Dry Grassland is found to occur in the project area (Mucina and Rutherford, 2006). This vegetation is classified as Least Threatened. The Aliwal North Dry Grassland vegetation type is classifies as "Currently not Vulnerable". Other spatial mapping tools indicate that the study area does not occur in a Critical Biodiversity Area, is not a Protected Area but occurs in a National Protected Area focus Area (Amathole Tarkastad Focus Area).

Species of Conservation Concern

Only a single species was found to be a SCC. Although only a single species was recorded during the survey it is possible that more may be found during the construction phase due to the habitat present. Species which could be present include *Anacampseros arachnoides*, *Ammocharis coranica*, *Brunsvigia* sp, *Bergeranthus vespertinus*, *Cynanchum natalensis*, *Euphorbia globosa*, *Trichodiadema intonsum*, *Tritonia laxifolia* and *Trichodiadema orientale*. A permit will be required to be obtained from EC DEDEAT for the removal of any SCC's if affected.

Refer to the Ecological Report in **Appendix D** for more detail.

SECTION C: PUBLIC PARTICIPATION

1.3.1. ADVERTISEMENT AND NOTICE

Publication name	The Somerset Budget	
Date published	3 September 2015	
Site notice position	**Latitude**	**Longitude**
	32°44′ 58.49″ S	25°56′1.36″ E
	32°44′51.89″ S	25°56′46.92″ E
	32°44′18.16″ S	25°49′48.01″ E
	32°44′43.56″ S	25°55′35.87″ E
Public Notice location	Along the N10, Poseidon Substation, Blue Crane Local Municipality, Cookhouse Library and on the boundary of the Nxuba Wind Farm	
Date placed	31 July 2015	

Include proof of the placement of the relevant advertisements and notices in Appendix E1. **(Refer to Appendix E1)**

1.3.2. 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.982.

» A2 Site notices were placed at conspicuous places around the proposed power line, facility substation complex and metering station.
» A4 notices were placed at the public library.
» An advert was placed in one local newspaper to notify the public about the availability of the Basic Assessment Report.
» No stakeholder or public meetings were held as no significant issues are anticipated and due to association of this proposed project with the larger authorised wind energy facility project for which public meetings were held.
» Stakeholder and I&AP issues and comments have been included in the Comments and Responses Report.

Key stakeholders (other than organs of state) identified in terms of Regulation 54(2)(b) of GN R.982 – ***Refer to I&AP database contained in Appendix E4***.

Title, Name and Surname	Affiliation/ key stakeholder status	Contact details (tel number or e-mail address)

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
- any other proof as agreed upon by the competent authority.

1.3.3. ISSUES RAISED BY INTERESTED AND AFFECTED PARTIES

No comments have been received on this proposed project to date. All comments received during the review period of the Basic Assessment report, as well as responses provided will be captured and recorded within the Comments and Response Report attached as **Appendix E** in the submission of the Basic Assessment Report.

Summary of main issues raised by I&APs	Summary of response from EAP

1.3.4. COMMENTS AND RESPONSE REPORT

The practitioner must record all comments received from I&APs and respond to each comment before the 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 BAR as Appendix E3.

1.3.5. AUTHORITY PARTICIPATION

Authorities and organs of state identified as key stakeholders - ***Refer to I&AP database contained in Appendix E4***.

Authority/Organ of State	Contact person (Title, Name and Surname)	Tel No	Fax No	e-mail	Postal address

Include proof that the Authorities and Organs of State received written notification of the proposed activities as **Appendix E3.**

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

1.3.6. 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.

A list of registered I&APs must be included as **Appendix E4**.

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

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.

1.1 Planning and/or Design Phase

Activities associated with the design and pre construction phase pertains mostly to feasibility assessments undertaken at a desktop level. Geotechnical surveys are usually undertaken in this phase and could result in impacts mainly associated with disturbance of vegetation and soils at localised areas where they drill.

1.1.1. Preferred Alternative - Facility Substation and metering station

Activity	Impact summary	Significance (with mitigation)	Proposed mitigation
	Ecological impacts		
Drilling at localised areas for geotechnical surveys	***Direct impacts:*** » Disturbance of vegetation » Disturbance of soil	Low	» Keep disturbance of vegetation and trampling to a minimum. » Do not remove vegetation in areas outside of the construction footprint.

Activity	Impact summary	Significance (with mitigation)	Proposed mitigation
			» It is recommended that areas containing SCC, be noted and every effort made to reduce the impacts of disturbance on these sections of vegetation. SCC in any area to be cleared should be identified and rescued. Some SCC will not transplant. Permits will be required to relocate or remove these species of conservation concern. » Implement erosion control measure if required to minimise erosion. » Remove all equipment from site and rehabilitate any disturbed areas once activities are completed.
	Indirect impacts: » Biodiversity loss of floral and faunal species » Disruption of ecosystem functions i.e. fragmentation	Low	» Ensure that large areas of vegetation are not disturbed
	Cumulative impacts: » The Nxuba Wind Farm will also impact on the grassland vegetation type, leading to localised or a slight reduction in the overall extent of this vegetation type. Where this vegetation type has already been affected due to degradation and transformation at a regional level, further losses may lead to increased vulnerability.	Low	» Keep vegetation disturbance to a minimum. » Control storm water runoff. » Control soil erosion. » Control alien invasive plants.

Activity	Impact summary	Significance (with mitigation)	Proposed mitigation
	» The further loss of habitat from other developments and the invasion of alien plant species may exacerbate the impact.		

1.1.2. Alternative Power line corridor (preferred)

Activity	Impact summary	Significance (with mitigation)	Proposed mitigation
	Ecological impacts		
Drilling at localised areas for geotechnical surveys	***Direct impacts:*** » Disturbance of vegetation » Disturbance soil	Low	» Keep removal of vegetation and trampling to a minimum. » Do not remove vegetation in areas outside of the working footprint. » Educate staff to keep construction activities within the demarcated areas. » Utilise existing access roads to access drilling sites. » It is recommended that areas containing SCC must be noted and every effort made to reduce the impacts of construction on these sections of vegetation. SCC in any area to be cleared should be identified and rescued. Some SCC will not transplant. These individuals should, as far as possible, be left untouched. Permits will be required to remove species of conservation concern. » Implement erosion control measure if required to minimise erosion.

Activity	Impact summary	Significance (with mitigation)	Proposed mitigation
			» Remove all equipment from site and rehabilitate any disturbed areas once activities are completed.
	Indirect impacts: » Biodiversity loss of floral and faunal species » Disruption of ecosystem functions i.e. fragmentation	Low	» Ensure that large areas of vegetation are not cleared unnecessarily.
	Cumulative impacts: » The Nxuba Wind Farm will also impact on the grassland vegetation type, leading to localised or more extensive reduction in the overall extent of this vegetation type. Where this vegetation type has already been affected due to degradation and transformation at a regional level, further losses may lead to increased vulnerability. » The further loss of habitat from other developments and the invasion of alien plant species may exacerbate the impact.	Low	» Keep vegetation clearance to a minimum. » Control storm water runoff. » Control soil erosion. » Control alien invasive plants.

1.2 Construction Phase

A summary and anticipated significance of the potential direct, indirect and cumulative impacts that are likely to occur as a result of the Construction Phase of the proposed power line, facility substation and metering station are provided in the tables which follow.

1.2.1. Alternative - Facility Substation and metering station

Activity	Impact summary	Significance (with mitigation)	Proposed mitigation
	Ecological impacts		
The construction of the proposed Facility substation, and metering station	***Direct impacts:*** » Loss of Dry Bedford Grassland » Disturbance to wildlife in the surrounding area	Low	» Keep removal of vegetation and trampling to a minimum. » Do not remove vegetation in areas outside of the construction footprint. » Educate staff to keep construction activities within the demarcated areas. » New access roads must be kept to a minimum and existing access roads used where feasible. » Vegetation impacted on during the construction phase in areas not required during the operation phase must be restored. It is likely that this will occur naturally but given the presence of alien species, active rehabilitation and the removal of alien species will be required to ensure that only indigenous species remain. **Dust** » Implement appropriate dust suppression measures such as wetting of the affected project area during dry, windy periods; » Limit the height of stockpiles to 2m where possible; » Where practical, do not leave large cleared areas exposed for longer than necessary; and

Activity	Impact summary	Significance (with mitigation)	Proposed mitigation
			» Enforce speed limits for vehicles associated with the construction activities (40 km/h is recommended). **Noise** » Mitigation of this impact is difficult, but noise reduction measures (such as silencers that are in good working order) should be implemented in all sensitive areas, where possible. » As far as possible, no construction activities should take place between sunset and sunrise. » Machinery that generates noise must be regularly maintained to ensure that no unnecessary additional noise is produced. » Equipment with lower sound levels should be selected where feasible.
	Indirect impacts: » Biodiversity loss of floral and faunal species » Disruption of ecosystem functions i.e. fragmentation	Low	» Ensure that large areas of vegetation are not cleared unnecessarily, especially for roads. » Where possible, access roads and tracks should be aligned with existing roads on site.
	Cumulative impacts: » The Nxuba Wind Energy Facility will also impact this vegetation type, leading to localised or more extensive reduction in the overall extent of this vegetation type. A number of impacts	Low	» Keep vegetation clearance to a minimum. » Control storm water runoff. » Control soil erosion. » Control alien invasive plants.

Activity	Impact summary	Significance (with mitigation)	Proposed mitigation
	in the surrounding areas have already impacted this vegetation. Wind turbines and power stations in the adjacent areas will cause further losses and may lead to increased vulnerability. » The further loss of habitat from other developments and the invasion of alien plant species may exacerbate the impact. » The Nxuba substation complex and metering station will also cause increased noise and dust levels in the immediate area, possibly exacerbating the current impacts.		
The clearance of vegetation	***Direct Impacts*** » Loss of animal and plant SCC over the entire site, including all vegetation community types. » Increased erosion risk » Influx of alien invader species. ***Indirect Impacts*** » Loss of Biodiversity » Loss of animal species ***Cumulative Impacts*** The further loss of habitat from other developments may exacerbate the impact.	Low	» Construction areas must be demarcated and vegetation clearing and top soil removal limited to these areas. » Rehabilitation of the affected project area must occur as soon as possible after construction is completed. » Prohibit employees from harvesting wild plants. » Prohibit open fires. » Implement an alien invasive monitoring plan for the construction and operational phases of the project. » As far as possible, restrict construction activities to post-dawn and pre-dusk.

Activity	Impact summary	Significance (with mitigation)	Proposed mitigation
	The construction of the Nxuba substation and metering station in the area could increase the impact on SCC as populations are impacted on at a larger scale.		» Construction must be undertaken in the shortest time practically possible. » Enforce speed limits within the construction site (40km per hour is recommended). » All staff employed during construction must sign a daily register or similar. » No construction residence may be set up on site. » A search and rescue of SCC should be implemented prior to construction to ensure that no SCC are affected by the proposed project. Some SCC will not transplant. These individuals should, as far as possible, be left untouched. Permits will be required to remove species of conservation concern. » Implement appropriate erosion control measures in areas susceptible to erosion. » Monitoring measures to reduce the impact of the introduction of alien invaders, as well as monitoring for alien invaders that have already been recorded on the site should be actively practised throughout the construction phase. » Removal of existing alien species should be consistently done. » Rehabilitation of disturbed areas after the construction of the Facility substation should be done as soon as possible after construction is completed.

Activity	Impact summary	Significance (with mitigation)	Proposed mitigation
	Visual impacts		
The potential visual impact of the construction of the Facility Substation and metering station on observers in close proximity to the proposed project	***Direct impacts:*** » Potential visual impact of construction on sensitive visual receptors in close proximity to the proposed facility substation and metering station.	Low (mitigated as a result of the location of the facility substation within the wind energy facility footprint and being surrounded by a landscape that consists of the Poseidon substation, various overhead power lines and existing Cookhouse wind farm)	**Mitigation** Mitigation cannot eliminate the negative visual effect on the cultural landscape and 'sense of place', however the following mitigation may lower visual impacts, which is already considered low: » Retain / re-establish and maintain natural vegetation in all areas outside of the development footprint. » Ensure that vegetation is not unnecessarily removed during the construction period. » Reduce the construction period as far as practically possible through careful logistical planning and productive implementation of resources. » Plan the placement of lay-down areas and temporary construction equipment camps in order to minimise vegetation clearing (i.e. in already disturbed areas) wherever practically possible. » Restrict the activities and movement of construction workers and vehicles to the immediate construction site and existing access roads where practically possible. » Ensure that rubble, litter, and disused construction materials are appropriately stored (if not removed daily) and then

Activity	Impact summary	Significance (with mitigation)	Proposed mitigation
			disposed of regularly at appropriately licensed waste facilities. » Reduce and control construction dust using approved dust suppression techniques as and when required. » Restrict construction activities to daylight hours whenever possible in order to reduce lighting impacts. » Rehabilitate all disturbed areas immediately after the completion of construction works. Ensure that rubble, litter, and disused construction materials are appropriately stored (if not removed daily) and then disposed of regularly at appropriately licensed waste facilities.
	Indirect impacts: » None	N/A	» N/A
	Cumulative impacts: » The construction will slightly increase the visual impact associated with the construction of the wind energy facility.	Medium	» Ensure that vegetation is not unnecessarily removed during the construction period. » Reduce the construction period as far as practically possible through careful logistical planning and productive implementation of resources. » Plan the placement of lay-down areas and temporary construction equipment camps in order to minimise vegetation clearing (i.e. in already disturbed areas) wherever possible. » Restrict the activities and movement of construction workers and vehicles to the

Activity	Impact summary	Significance (with mitigation)	Proposed mitigation
			immediate construction site and existing access roads where practically possible. » Ensure that rubble, litter, and disused construction materials are appropriately stored (if not removed daily) and then disposed of regularly at appropriately licensed waste facilities. » Reduce and control construction dust using approved dust suppression techniques as and when required. » Restrict construction activities to daylight hours whenever possible in order to reduce lighting impacts. » Rehabilitate all disturbed areas immediately after the completion of construction works.
		Avifauna impacts	
Construction of facility substation and metering station.	***Direct impacts:*** » Destruction of bird habitat	Low	» Minimise disturbance to vegetation as far as possible. » Minimise noise levels as far as possible.
	Indirect impacts: » Displacement of birds from the area » Habitat loss	Low	» Minimise habitat destruction caused by the construction of the facility substation by keeping the lay-down areas as small as possible, and creating as few temporary tracks through natural vegetation as possible.
	Cumulative impacts: » Construction activities associated with several developments in the area at one time is likely to increase the	Low	» Minimise disturbance to vegetation as far as possible. » Minimise generation of noise as far as possible.

Activity	Impact summary	Significance (with mitigation)	Proposed mitigation
	potential cumulative impact on avifauna within the region.		
	Social impacts		
Construction of the facility substation and metering station.	***Direct impacts:*** » Potential impacts on existing land uses. » Influx of construction workers employed on the project and job seekers. » Impact of heavy vehicles, including damage to roads, safety, noise and dust. » Job creation (positive impact).	Low (mitigated as a result of the fact that the facility substation will be constructed at the same time as the approved Nxuba wind Energy Facility)	» New road construction must be kept to a minimum as far as practically possible. » The movement of construction workers on and off the site should be closely managed and monitored by the contractors. » Incoming and outgoing vehicles should be monitored to control traffic » Use dust suppressing measures on all gravel access roads throughout the construction phase. » Employ local staff, as far as possible. » Attempt to provide skills development/ training for local employees.
	Indirect impacts: » Local employed people during the construction phase may learn new skills thereby making them more employable in the future (positive impact).	Low (positive)	» The proponent should employ locals as much as possible and ensure skills transfer and development is fostered as much as possible during the construction phase.
	Cumulative impacts: » Impacts on family and community relations. » Unplanned / unwanted pregnancies occur or members of the community are infected by an STD, specifically HIV and or AIDS.	Low	» Attention should be given to the extension and improvement of the existing HIV / Aids awareness programmes in the area.

Activity	Impact summary	Significance (with mitigation)	Proposed mitigation
	Heritage		
Construction of the facility substation and metering station.	***Direct impacts:*** Impact of the construction of the facility substation on the pre-colonial archaeology and colonial period heritage.	Low	» No mitigation is proposed before construction starts because the archaeological remains are of low significance (excluding human remains). However, if concentrations of archaeological materials are exposed then all work must stop in the specific area for an archaeologist to investigate. » If any human remains (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 to the Eastern Cape Provincial Heritage Resources Authority, so that a systematic and professional investigation can be undertaken. Sufficient time should be allowed to investigate and to remove/collect such material. Recommendations will follow from the investigation.
	Indirect impacts: ***N/A***	NA	» NA
	Cumulative impacts: The number of other renewable facilities in the area already constructed or under construction can potentially increase the risk of impact on archaeological sites (if any), but in general it will be negligible.	Low	» None possible

1.2.2. Alternative - Power line Corridor (preferred)

Activity	Impact summary	Significance (with mitigation)	Proposed mitigation
	Ecological impacts		
The construction of the power line.	***Direct impacts:*** » Loss of Dry Bedford Grassland » Disturbance to wildlife in the surrounding area	Low	» Keep removal of vegetation and trampling to a minimum. » Do not remove vegetation in areas outside of the construction footprint. » Educate staff to keep construction activities within the demarcated areas. » New access roads must be kept to a minimum and existing access roads used where practically feasible. » Vegetation impacted on during the construction phase in areas not required during the operation phase must be restored. It is likely that this will occur naturally but given the presence of alien species, active rehabilitation and the removal of alien species will be required to ensure that only indigenous species remain. **Dust** » Implement appropriate dust suppression measures such as wetting of the affected project area during dry, windy periods; » Limit the height of stockpiles to 2m as a far as possible; » Where practical, do not leave large cleared areas exposed for longer than necessary; and

Activity	Impact summary	Significance (with mitigation)	Proposed mitigation
			» Enforce speed limits for vehicles associated with the construction activities (40 km/h is recommended). **Noise** » Mitigation of this impact is difficult, but noise reduction measures, e.g. silencers that are in good working order, should be implemented in all sensitive areas. » As far as possible, no construction activities should take place between sunset and sunrise. » Machinery that generates noise must be regularly maintained to ensure that no unnecessary additional noise is produced. » Equipment with lower sound levels should be selected where feasible.
	Indirect impacts: » Biodiversity loss of floral and faunal species » Disruption of ecosystem functions i.e. fragmentation	Low	» Ensure that large areas of vegetation are not cleared, especially for roads, where practically possible. » Where practically possible, access roads and tracks should be aligned with existing roads on site.
	Cumulative impacts: » The Nxuba Wind Energy Facility will also impact this vegetation type, leading to localised or more extensive reduction in the overall extent of this vegetation type. A number of impacts	Low	» Keep vegetation clearance to a minimum. » Control storm water runoff. » Control soil erosion. » Control alien invasive plants.

Activity	Impact summary	Significance (with mitigation)	Proposed mitigation
	in the surrounding areas have already impacted this vegetation. Wind turbines and power stations in the adjacent areas will cause further losses and may lead to increased. » The further loss of habitat from other developments and the invasion of alien plant species may exacerbate the impact. » The construction of Nxuba substation complex, metering station and power line will also cause increased noise and dust levels in the immediate area, possibly exacerbating the current impacts.		
Clearance of vegetation.	***Direct Impacts*** » Loss of animal and plant SCC over the entire site, including all vegetation community types. » Increased erosion risk. » Influx of alien invader species. ***Indirect Impacts*** Loss of Biodiversity Loss of animal species ***Cumulative Impacts*** The further loss of habitat from other developments may exacerbate the impact. The construction of the Nxuba substation complex, metering station and power line	Low	» Construction areas must be demarcated and vegetation clearing and top soil removal limited to these areas. » Rehabilitation of the affected project area must occur after construction. » Prohibit employees from harvesting wild plants. » Prohibit open fires. » Implement an alien invasive monitoring plan for the construction and operational phases of the project. » As far as practically possible, restrict construction activities to post-dawn and pre-dusk.

Activity	Impact summary	Significance (with mitigation)	Proposed mitigation
	in the area could increase the impact on SCC as populations are impacted on at a larger scale.		» Construction must be undertaken in the shortest time practically possible. » Enforce speed limits within the construction site (40km/hr per hour is recommended). » All staff employed during construction must sign a daily register or similar. » No construction residence may be set up on site. » A search and rescue of SCC should be implemented prior to construction to ensure that no SCC are affected by the proposed project. Some SCC will not transplant. These individuals should, as far as possible, be left untouched. Permits will be required to remove species of conservation concern. » Monitoring measures to reduce the impact of the introduction of alien invaders, as well as monitoring for alien invaders that have already been recorded on the site should be actively practised throughout the construction phase. » Removal of existing alien species should be consistently done. » Rehabilitation of disturbed areas after the construction of the Facility substation should be done as soon as possible after construction is completed.
Visual impacts			

Activity	Impact summary	Significance (with mitigation)	Proposed mitigation
The potential visual impact of the construction of the power line.	***Direct impacts:*** » Potential visual impact of construction on sensitive visual receptors in close proximity to the proposed power line	Low (mitigated as a result of the location of the power line within the wind energy facility footprint and being surrounded by a landscape that consists of the Poseidon substation, various overhead power lines and existing Cookhouse wind farm)	**Mitigation** Mitigation cannot eliminate the negative visual effect on the cultural landscape and 'sense of place', however the following mitigation may lower visual impacts, which is already rated as low significance: » Retain / re-establish and maintain natural vegetation in all areas outside of the development footprint/servitude. » Ensure that vegetation is not unnecessarily removed during the construction period. » Reduce the construction period as far as practically possible through careful logistical planning and productive implementation of resources. » Plan the placement of lay-down areas and temporary construction equipment camps in order to minimise vegetation clearing (i.e. in already disturbed areas) wherever practically possible. » Restrict the activities and movement of construction workers and vehicles to the immediate construction site and existing access roads wherever practically possible. » Ensure that rubble, litter, and disused construction materials are appropriately stored (if not removed daily) and then disposed of regularly at appropriately licensed waste facilities.

Activity	Impact summary	Significance (with mitigation)	Proposed mitigation
			» Reduce and control construction dust using approved dust suppression techniques as and when required. » Restrict construction activities to daylight hours whenever possible in order to reduce lighting impacts. » Rehabilitate all disturbed areas immediately after the completion of construction works.
	Indirect impacts: » None	N/A	» N/A
	Cumulative impacts: » The construction will slightly increase the visual impact of construction of the wind energy facility.	Low	» Ensure that vegetation is not unnecessarily removed during the construction period. » Reduce the construction period as far as practically possible through careful logistical planning and productive implementation of resources. » Plan the placement of lay-down areas and temporary construction equipment camps in order to minimise vegetation clearing (i.e. in already disturbed areas) wherever practically possible. » Restrict the activities and movement of construction workers and vehicles to the immediate construction site and existing access roads wherever practically possible. » Ensure that rubble, litter, and disused construction materials are appropriately stored (if not removed daily) and then

Activity	Impact summary	Significance (with mitigation)	Proposed mitigation
			disposed of regularly at appropriately licensed waste facilities. » Reduce and control construction dust using approved dust suppression techniques as and when required. » Restrict construction activities to daylight hours whenever possible in order to reduce lighting impacts. » Rehabilitate all disturbed areas immediately after the completion of construction works.
		Avifauna impacts	
Construction of the power line	***Direct impacts:*** » Limited disturbance of birds during the construction of the power line	Low	» An avifaunal walk through must be conducted to determine whether any sensitive bird species are breeding on or close to the site. » Minimise disturbance to vegetation as far as practically possible. » Minimise noise levels as far as practically possible. » The overhead power line should be marked with Bird Flight Diverters (BFDs), on the earth wire of the line, five metres apart, and alternating black and white.
	Indirect impacts: » Limited displacement of birds from the area » Habitat loss	Low	» Minimize habitat destruction caused by the construction of the power line by keeping the lay-down areas as small as possible, and causing as few temporary tracks through natural vegetation as possible.
	Cumulative impacts:	Low	» Minimise disturbance to vegetation as far as possible.

Activity	Impact summary	Significance (with mitigation)	Proposed mitigation
	» Construction activities associated with several developments in the area at one time is likely to increase the potential cumulative impact on avifauna within the region.		» Minimise generation of noise as far as possible.
	Social impacts		
Construction of the power line	***Direct impacts:*** » Potential impacts on existing land uses. » Influx of construction workers employed on the project and job seekers. » Impact of heavy vehicles, including damage to roads, safety, noise and dust. » Job creation (positive impact).	Low (mitigated as a result of the fact that the power line will be constructed at the same time as the wind energy facility)	» New road construction must be kept to a minimum as far as practically possible. » The movement of construction workers on and off the site should be closely managed and monitored by the contractors. » Incoming and outgoing vehicles should be monitored to control traffic » Use dust suppressing measures on all gravel access roads throughout the construction phase. » Employ local staff, as far as possible. » Attempt to provide skills development/ training for local employees.
	Indirect impacts: » Local employed people during the construction phase may learn new skills thereby making them more employable in the future (positive impact).	Low (positive)	» The proponent should employ locals as much as possible and ensure skills transfer and development is fostered as much as possible during the construction phase.
	Cumulative impacts: » Impacts on family and community relations.	Low	» Attention should be given to the extension and improvement of the existing HIV / Aids awareness programmes in the area.

Activity	Impact summary	Significance (with mitigation)	Proposed mitigation
	» Unplanned / unwanted pregnancies occur or members of the community are infected by an STD, specifically HIV and or AIDS.		
	Heritage impacts		
Construction of the power line	***Direct impacts:*** » Impacts of the construction of the proposed 132kV overhead power line from the proposed substation to the Poseidon Substation on the pre-colonial archaeology and colonial period heritage.	Low	No mitigation is proposed before construction starts because the archaeological remains are of low significance (excluding human remains). However, if concentrations of archaeological materials are exposed then all work must stop for an archaeologist to investigate. If any human remains (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 to the Eastern Cape Provincial Heritage Resources Authority, so that a systematic and professional investigation can be undertaken. Sufficient time should be allowed to investigate and to remove/collect such material. Recommendations will follow from the investigation.
	Indirect impacts: » N/A	-	-
	Cumulative impacts:	Low	None possible

Activity	Impact summary	Significance (with mitigation)	Proposed mitigation
	The number of other renewable facilities in the area already constructed or under construction can potentially increase the risk of impact on archaeological sites (if any), but in general it will be negligible.		

1.3 Operational Phase

A summary and anticipated significance of the potential direct, indirect and cumulative impacts that are likely to occur as a result of the Operational Phase of the proposed power line and facility substation are provided in the tables which follow.

1.3.1. Preferred Alternative - Facility Substation and metering station.

Activity	Impact Summary	Significance (with mitigation)	Proposed Mitigation
	Ecological impacts		
Maintenance and operation of the facility substation complex and associated infrastructure.	***Direct impacts:*** » Influx of alien invader species.	Low	» Monitoring measures to reduce the impact of the introduction of alien invaders, as well as monitoring for alien invaders that have already been recorded on the site should be actively practised throughout the operational phases. » An on-going monitoring program should be implemented to track whether alien species are becoming established and assist with the management of the infestations.
	Indirect impacts: » Disruption of ecosystem function & processes	Low	
	Cumulative impacts: » Impacts such as soil erosion and habitat loss may exacerbate the infestation of alien species.	Low	
	Visual impacts		
Maintenance and operation of the facility substation complex and associated infrastructure.	***Direct impacts:*** » Visual impact of the proposed facility substation on the visual quality of the landscape and sense of place of the region.	Low (mitigated as a result of the location of the facility substation within the wind energy facility footprint and being surrounded by a landscape that consists of the Poseidon substation, various overhead power lines and existing Cookhouse wind farm)	» Maintain the general appearance of the facility substation as a whole.
	Indirect impacts: » None	N/A	» N/A

Activity	Impact Summary	Significance (with mitigation)	Proposed Mitigation
	Cumulative impacts: » The additional power line, together with the existing and proposed power lines in the area are likely to increase the potential cumulative visual impact of industrial type infrastructure within the region.	Medium	» Maintain the general appearance of the substation and the associated infrastructure as a whole.
		Avifauna impacts	
Operation and maintenance of Facility substation complex and associated infrastructure.	***Direct impacts:*** » Bird displacement due to habitat disturbance or loss. » Electrocutions on substation infrastructure.	Low	» Undertake regular monitoring of the Facility substation area an associated infrastructure to detect any areas where high impacts are experienced and recommend any additional mitigation which may be required to be implemented.
	Indirect impacts: » Decrease in avifauna species in the study area due to electrocution, and habitat disturbance	Low	» N/A
	Cumulative impacts: » There is existing infrastructure associated with the authorised Nxuba Wind Farm including power lines, access roads etc. in the vicinity of the proposed site and further development will add to the possibility of electrocutions and collisions.	Low	» N/A
		Social impacts	
Social Impacts	***Direct*** » Increase skills » Increased fire risk	Low	» Social enhancement measures. » The health and safety plan to be implemented for the wind energy facility

Activity	Impact Summary	Significance (with mitigation)	Proposed Mitigation
	» Intrusions of strangers to the area		(including the substation) should be observed and all management measures in terms thereof observed for the substation.
	Indirect impacts		N/A
	Cumulative Impacts		N/A

1.3.2. Alternative Power line Corridor (preferred)

Activity	Impact Summary	Significance (with mitigation)	Proposed Mitigation
	Ecological impacts		
Maintenance and operation of the power line and associated infrastructure	***Direct impacts:*** » Influx of alien invader species.	Low	» Monitoring measures to reduce the impact of the introduction of alien invaders, as well as mitigation against alien invaders that have already been recorded on the site should be actively monitored throughout the operation phases. » An on-going monitoring program should be implemented to track whether alien species are becoming established and assist with the management of the infestations.
	Indirect impacts: » Disruption of ecosystem function & processes	Low	
	Cumulative impacts: » Impacts such as soil erosion and habitat loss may exacerbate the infestation of alien species.	Low	
	Visual impacts		
Maintenance and operation of the power line and associated infrastructure.	***Direct impacts:*** » Visual impact of the proposed power line on the visual quality of the landscape and sense of place of the region.	Low (mitigated as a result of the location of the power line within the wind energy facility footprint and being surrounded by a landscape that consists of the Poseidon substation, various overhead power lines and existing Cookhouse wind farm)	» Maintain the general appearance of the power line servitude as a whole.

Activity	Impact Summary	Significance (with mitigation)	Proposed Mitigation
	Indirect impacts: » None	N/A	» N/A
	Cumulative impacts: » The additional power line, together with the existing power lines in the area is likely to increase the potential cumulative visual impact of industrial type infrastructure within the region.	Medium	» Maintain the general appearance of the power line servitude and the associated infrastructure as a whole.
	Avifauna impacts		
Operation and maintenance of power line and associated infrastructure.	***Direct impacts:*** » Bird mortality due to collision with the proposed power line. » Bird mortality due to electrocutions.	Low	» Maintain bird diverters on all lines that occur within roost site or flyway so birds see them more readily and avoid contact. » Undertake regular monitoring of the power line and associated infrastructure to detect any areas where high impacts are experienced and recommend any additional mitigation which may be required to be implemented. » Bird friendly Eskom approved or similar structure must be used to mitigate against the risk of bird electrocutions. Once the structure is available this should be sent to the specialist for approval.
	Indirect impacts: » Decrease in avifauna species in the study area due to collision and electrocution	Low	» N/A
	Cumulative impacts: » There is existing infrastructure associated with the authorised Nxuba	Medium-Low	» A bird friendly Eskom approved or similar structure must be used to mitigate against the risk of bird electrocutions and collisions

Activity	Impact Summary	Significance (with mitigation)	Proposed Mitigation
	Wind Farm including power lines, access roads etc. in the vicinity of the proposed site and further development will add to the possibility of electrocutions and collisions.		
	Social impacts		
Social Impacts	***Direct*** » Increase skills » Increased fire risk » Intrusions of strangers to the area	Low	» Social enhancement measures » A health and safety plan should be observed and all management measures in terms thereof observed for the operation of the substation
	Indirect impacts		N/A
	Cumulative Impacts		N/A

1.4 Decommissioning Phase

Impacts associated with the decommissioning of the proposed infrastructure will be similar to those described and assessed for the construction phase. Assessment of the impacts is not repeated in this report. It must however be noted that because the proposed project is for connecting the approved Nxuba Wind Energy Facility to the National grid at Poseidon substation, it can be assumed that the lifespan of the proposed 132 kV overhead power line, 132kV facility substation complex and metering station will have a minimum lifespan of 20 years. It is however possible that the operation licence of the Nxuba wind farm is extended beyond the 20 years. Should the wind farm however be decommissioned, the proposed power line, facility substation complex and metering station will be taken apart. Where possible, parts will be re-used, where it cannot be re-used or recycled it will be disposed of at an appropriately licenced facility.

1.5 The No-Go Option

This is the option of not constructing the proposed power line, facility substation complex and metering station. This option will result in limited or no impacts occurring on the environment. However, this will result in the situation where the authorised Nxuba Wind Farm (a Preferred Bidder Project) cannot be connected to the electricity grid (as the current authorised power line corridor and substation site

are no longer feasible). This is an undesirable option for the project as it will pose negative impacts on the Wind Farm Project. In addition, it would result in a situation where the electricity generated from the authorised wind energy facility would not be fed into the national grid resulting in the loss of additional power generation capacity. This would result in negative impacts at a local, regional and national scale from a socio-economic and economic perspective and is not considered desirable. The negative impacts of the no go alternative are considered to outweigh the positive impacts of this alternative. The no go option is therefore not preferred.

A complete impact assessment in terms of Regulation 22(2)(i) of GN R.982 must be 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.

This section provides a summary of the environmental assessment and conclusions drawn for the proposed construction of a 132kV overhead power line, facility substation complex and metering station which will connect the authorised Nxuba Wind Farm site to the Poseidon Substation. . This section draws on the information gathered as part of the Basic Assessment process and the knowledge gained by the environmental consultants during the course of the process and presents an informed opinion of the environmental impacts associated with the proposed project. The following conclusions can be drawn from the specialist studies undertaken within this Basic Assessment. Impacts are expected to be similar with both alternatives considered.

Ecology: Overall, the impacts of the development will be **low negative** after mitigation measures, mainly due to a loss of small areas of vegetation, and habitat loss of fauna. Positive impacts include the active management of the alien vegetation on the site. Impacts associated with the proposed development are unlikely to be fatally impacted. From an ecological perspective, the proposed construction of the preferred options for the power line corridor alternative, the proposed substation complex and metering station are considered acceptable.

Avifauna: The proposed development entails an optimised route, and a small substation and metering station in an area already highly developed with overhead electrical infrastructure and substations. As such, the risks posed to avifauna by the proposed development can be successfully mitigated to acceptable levels. The proposed corridor and the preferred options for the proposed substation complex and metering station location **are considered acceptable from an avifaunal perspective**.

Heritage: The proposed substation complex, metering station and the power line corridor from the proposed Nxuba Facility Substation to the Poseidon Substation are of l**ow cultural significance**. It appears unlikely that any significant in situ sites/material will be exposed during these developments. From a heritage perspective, the proposed construction of the preferred options for the power line corridor alternative and the proposed substation complex and metering station are considered acceptable.

Social Impact: Social impacts are expected during all phases of the development and are expected to be both positive and negative. Impacts are expected to be of **low significance** for the various issues. Impacts can be minimised or enhanced through the implementation of the recommended management measures. From a social perspective, the proposed construction of the preferred options for the power line corridor alternative the proposed substation complex and metering station are considered acceptable.

Visual Impacts: The proposed facility substation complex, metering station and power line infrastructure as assesse in this Basic Assessment Report is not likely to contribute significantly to the potential visual impacts associated with the existing much taller wind turbine structures of the Nxuba Wind Farm and the existing power lines, substations and wind farms in the study area. Therefore the potential visual impacts associated with the proposed facility substation complex, metering station and power line are expected to have a **low significance** and should not alter/influence the outcome of the project decision-making. From a visual perspective, the preferred options for the power line corridor alternative and the facility substation complex and metering station are considered to be acceptable.

Cumulative Impacts: Cumulative impacts from the preferred options for the power line, facility substation complex and metering station will result from impacts arising from multiple power lines being constructed in the area (from other project phases). As this infrastructure is located within the authorised Nxuba Wind Farm boundary, the contribution of this infrastructure to the cumulative impacts in the area is considered to be **low**.

Overall conclusion

From the specialist studies undertaken, the preferred options for the proposed substation complex, metering station and power line are considered to be acceptable from an environmental perspective, and are preferable to the already authorised grid connection infrastructure associated with the facility (due to the limited length of the power line). The proposed power line corridor, facility substation complex and metering station locations are also considered technically and financially feasible based on detailed design and discussions with Eskom. No alternatives have been assessed for the proposed facility substation complex, metering station and the proposed 132 kV overhead power line due to the location of this infrastructure within the boundaries of the authorised wind energy facility and based on the fact that the approved connections, which were considered, are no longer technically feasible as connection options for the optimised Nxuba Wind Energy Facility.

Based on the findings of the studies undertaken, in terms of environmental constraints and opportunities identified through the Environmental Basic Assessment process, no environmental fatal flaws were identified to be associated with the construction of the

proposed power line, facility substation complex and associated infrastructure. Impacts are expected to be **low** after the implementation of appropriate mitigation and it is recommended that the proposed development can therefore be implemented. With reference to the information available at this planning approval stage in the project cycle, the confidence in the environmental assessment undertaken is regarded as acceptable.

No-go alternative (compulsory)

The 'Do nothing' alternative is the option of not constructing the 132kV power line and facility substation complex, metering station and the associated infrastructure. This option will result in limited or no impacts occurring on the environment. However, this will result in the situation where the authorised Nxuba Wind Farm (a Preferred Bidder Project) cannot be connected to the electricity grid.

The 'Do nothing' alterative is an undesirable option for the project as it will pose negative impacts on the Wind Farm and it will result in a lost opportunity for renewable energy production within the country, and will impact on the local community as no employment would be generated. **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.

The construction of the proposed 132kV overhead power line, 132kV facility substation complex, metering station and associated infrastructure should be implemented according to the conclusions of this report and the specifications of the EMPr to adequately mitigate and manage potential impacts associated with construction and operation activities. The construction and operation activities and relevant rehabilitation of disturbed areas should be monitored against the approved EMPr, the Environmental Authorisation (once issued) and all other relevant environmental legislation. Relevant conditions to be adhered to include:

Construction Phase:

» All relevant practical and reasonable mitigation measures detailed within this report and within the EMPr must be implemented.
» The implementation of the EMPr for all life cycle phases of the proposed project is considered key in achieving the appropriate environmental management standards as detailed in this report.
» An independent Environmental Control Officer (ECO) should be appointed to monitor compliance with the specifications of the EMPr for the duration of the construction period.
» A walkthrough survey should be undertaken prior construction by a qualified ecologist in order to ensure that the proposed tower positions are appropriate and to make recommendations regarding any specific mitigation which is required to minimise impacts.
» Develop and implement a search and rescue plan for species of conservational concern (SCC) which should be implemented prior to construction to ensure that no SCC are unnecessarily affected by the proposed project. These species should not be relocated but should as far as possible, be left untouched. Permits will be required to remove or relocate species of conservation concern.
» Creation of new access roads should be minimised as far as practically possible.

- All declared alien plants 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.
- Surface water runoff should be managed by using a storm water management plan. During construction, erosion should be monitored while areas of vegetation are cleared.
- The overhead power line should be marked with Bird Flight Diverters (BFDs), on the earth wire of the line, five metres apart, alternating black and white.
- Care must be taken with the topsoil during and after construction on the site. If required, measures to reduce erosion to be employed, such as keeping the soil covered by straw, mulch, erosion control mats, etc., until a healthy plant cover is again established.
- Rehabilitate construction sites by establishing with indigenous grasses or alternatively use other suitable plant species according to the landowners recommendations and/ or advice.
- Erosion control measures must be utilised during construction, operations, decommissioning and rehabilitation of power line, substation and metering station.
- 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.
- The proponent should obtain all necessary permits prior to the commencement of construction.

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:

- On-going maintenance of the power line infrastructure to minimise the potential for visual impacts.
- On-going monitoring of the development sites must be undertaken to detect and restrict the spread of alien plant species.
- Undertake regular monitoring of the power line to detect any areas where high impacts to birds are experienced and recommend any additional mitigation which may be required to be implemented.

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.**

JO-ANNE THOMAS

_____

NAME OF EAP

_____ _____

SIGNATURE OF EAP DATE

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 and the EAP's Affirmation

Appendix J: Additional Information