ENVIRONMENTAL IMPACT ASSESSMENT PROCESS
BASIC ASSESSMENT REPORT

132KV DOUBLE CIRCUIT POWER LINE AND ON-SITE SUBSTATION FOR THE GOLDEN VALLEY II WIND ENERGY FACILITY, EASTERN CAPE

MARCH 2016

Prepared for:
Golden Valley II Wind (RF) Proprietary Limited
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2021

Prepared by

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REPUBLIC OF SOUTH AFRICA

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File Reference Number:	
Application Number:	
Date Received:	

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

Kindly note that:

1. This **basic assessment report** is a standard report that may be required by a competent authority in terms of the EIA Regulations, 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 132kV Double Circuit Power line and On-site Substation Associated with the Golden Valley II Wind Energy Facility, Eastern Cape Province
Authors	**:**	Savannah Environmental Dilona Somai John von Mayer Jo-Anne Thomas
Specialists	**:**	Gabriele Wood: Savannah Environmental Chris van Rooyen Consulting Afzelia Environmental Consultants and Environmental Planning and Design Eastern Cape Heritage Consultants cc Eco-Case Consulting (Pty) Ltd
Applicant	**:**	Golden Valley II Wind (RF) Proprietary Limited
Report Status	**:**	Basic Assessment Report for Public Review
Review period	**:**	22 March 2016 – 25 April 2016

When used as a reference this report should be cited as: Savannah Environmental (2016) Draft Basic Assessment Report: 132Kv Double Circuit Power line and On-site Substation Associated with the Authorised Golden Valley II Wind Energy Facility, Eastern Cape Province.

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SUMMARY AND OVERVIEW OF THE PROPOSED PROJECT

Terra Wind Energy Golden Valley (Pty) Ltd received environmental authorisation in April 2011 for the Golden Valley Wind Energy Facility (WEF) (DEA Ref No: 12/12/20/1717). An application for amendment of this project to split it into 2 phases, i.e. Golden Valley Wind Energy Facility (Project I) which consists of 48 turbines and Golden Valley II Wind Energy Facility (Project II) up to 126 turbines, is currently underway. Project I is a Preferred Bidder project currently working towards Financial Close. Project II is to be developed by Golden Valley II Wind (RF) Proprietary Limited and will be bid into the Department of Energy (DoE) Renewable Energy Independent Power Producer Procurement Programme.

The Proposed 132kV Power line and on-site Substation associated with the Golden Valley II Wind Energy Facility

In order to connect the Golden Valley II WEF to the national electricity grid, the following is being proposed by Golden Valley II Wind (RF) Proprietary Limited:

» The construction of a double circuit 132kV power line (approximately 7km in length); and
» An on-site substation, located within the Golden Valley II WEF footprint, with a footprint of approximately 250m x 250m (62 500m^2).

Initially the Developer looked at constructing two 132kV powerlines running parallel to one another to the existing Eskom Poseidon-Albany 132kV power line, but it was decided to run a double circuit on a single pole to minimise the environmental impacts, however, this may change due to Eskom requirements in the future and hence why the Developer included a 250m buffer in the assessments.

Two alternative substation locations (*CVG proposed substation* – the "preferred" location and the *BTE proposed substation* – the "alternative" location) and one connection point into the existing Eskom Poseidon-Albany 132kV power line have been identified. This has resulted in two alternative power line alignments being proposed. A 250m wide corridor is being investigated for the siting of the proposed power line for each alternative. Access roads (approximately 4m in width) will be constructed along the power line servitude where required.

The project site falls within the Blue Crane Route Local Municipality and Sarah Baartman District Municipality of the Eastern Cape Province. The development will take place approximately 16km east of Cookhouse and 20km south-west of Bedford (refer to Figure 1) and is located southwest of the gravel road connecting Middleton/N10 National Road to the Cookhouse to Bedford road. The following properties will be affected by the construction of the proposed Project:

- Parent Farm Olyf Fonteyn: Remaining extent of the Farm Mullerskraal Nr. 159;
- Portion 1 of the Farm Nr. 158 (Varkens Kuyl);
- Farm 155 (Quagas Kuyl);
- Farm 260 Bedford; and
- Farm 242.

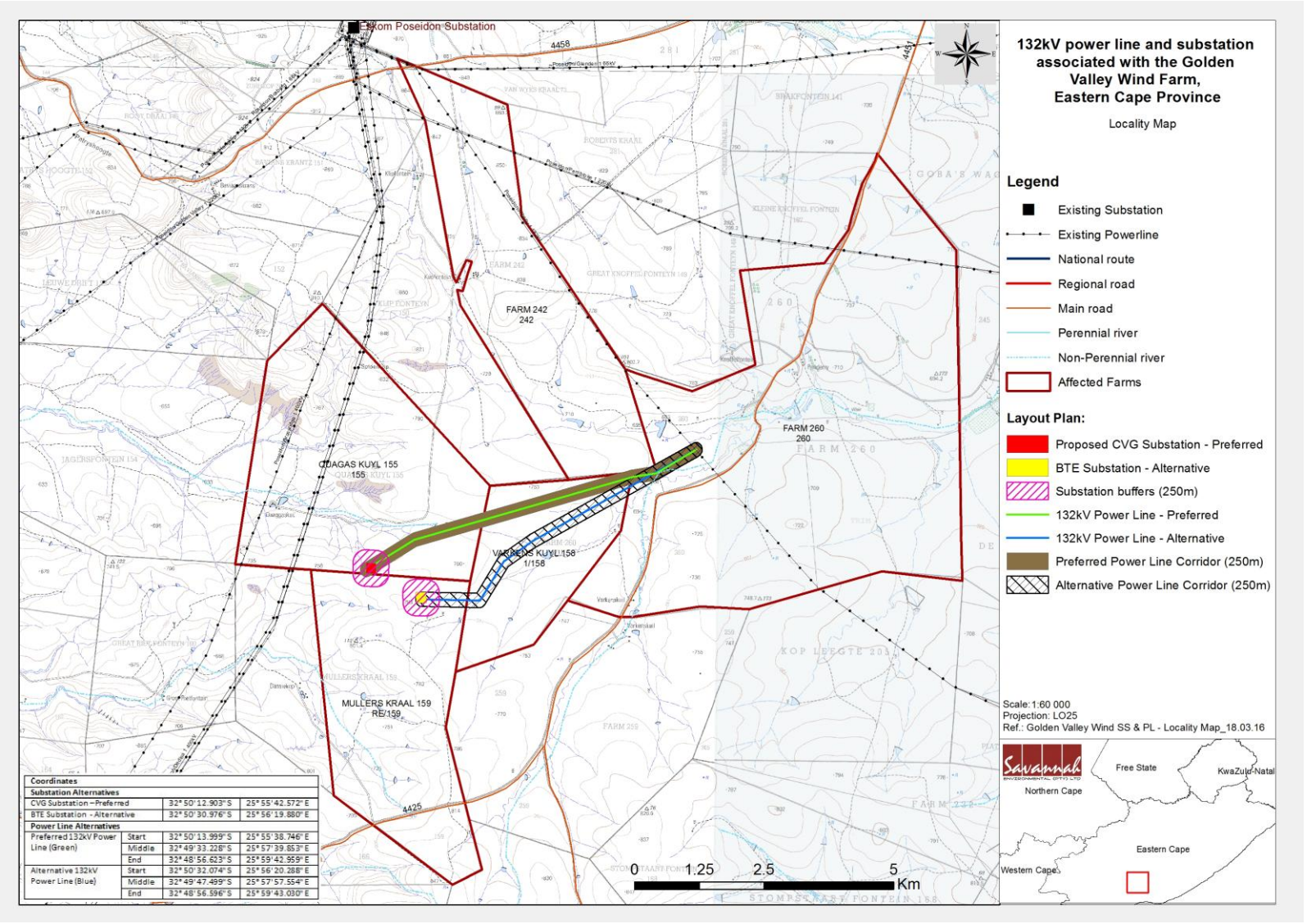

Figure 1: Locality Map indicating the locality of the proposed power line route alternatives and substation alternatives for the Golden Valley Wind Energy Facility Project II (refer to Appendix A for A3 map).

1.1. NEED AND DESIRABILITY FOR THE PROPOSED INFRASTRUCTURE

The need and justification for the proposed Project is linked to the environmental authorisation that was issued for the Golden Valley Wind Energy Facility in April 2011. The proposed power line and on-site substation constitute essential infrastructure to connect Golden Valley Wind Energy Facility Project II to the grid connection point at the existing Poseidon-Albany 132kV power line as dictated by Eskom.

From an overall sensitivity and planning perspective, the proposed grid infrastructure is not considered contrary to the broader strategic context of the municipality and is in line with national policy as it is linked to the already authorised Golden Valley Wind Energy Facility which will provide clean energy to the national grid. No exceedance of ecological, visual, heritage and avifaunal limits will result from the construction of the proposed power line and substation and no significant disturbance of biological diversity is anticipated, as detailed in this Basic Assessment Report.

1.2. REQUIREMENTS FOR A BASIC ASSESSMENT PROCESS

In terms of the Environmental Impact Assessment (EIA) Regulations published in terms of Section 24(5) of the National Environmental Management Act (NEMA, Act No. 107 of 1998), Golden Valley II Wind (RF) Proprietary Limited requires authorisation for the construction of the power line and substation. In terms of Sections 24 and 24D of the National Environmental Management Act (No 107 of 1998), as read with the EIA Regulations of GN 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[1] and the Eastern Cape: Department of Economic Development, Environmental Affairs and Tourism (DEDEAT) will act as the commenting authority. This project will be registered with the DEA through submission of an application for Environmental Authorisation.

The nature and extent of the proposed grid infrastructure is explored in more detail in this Basic Assessment Report. This report has been compiled in accordance with the requirements of the EIA Regulations (refer to Table 1) 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 EAP.

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

Table 1: Legal Requirements 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 1.3
(ii) the expertise of the EAP, including a curriculum vitae;	Section 1.3 Appendix H
(b) the location of the activity, including: (i) the 21 digit Surveyor General code of each cadastral land parcel;	Section B
(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)
(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 A (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	Section 2 Section C Appendix E

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)
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;	
(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
(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;	Section D Appendix F
(viii) the possible mitigation measures that could be applied and level of residual risk;	Section D Appendix F
(ix) the outcome of the site selection matrix;	N/A
(x) if no alternatives, including alternative locations for the activity were investigated, the motivation for not considering such; and	Section A (2)
(xi) a concluding statement indicating the preferred alternatives, including preferred location of the activity;	Section D (2)
(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 D Appendix F
(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 D Appendix F
(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	Appendix D 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)
irreplaceable loss of resources; and (vii) the degree to which the impact and risk can be avoided, managed or mitigated;	
(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 D (2)
(l) an environmental impact statement which contains— (i) a summary of the key findings of the environmental impact assessment; (ii) a map at an appropriate scale which superimposes the proposed activity and its associated structures and infrastructure on the 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;	Section D (2) Appendix F
(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 D (2) Appendix F
(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
(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
(t) any specific information that may be required by the competent	N/A

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)
	authority; and	
(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

Golden Valley II Wind (RF) Proprietary Limited 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, I&APs will be 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 Golden Valley II Wind (RF) Proprietary Limited. 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:

» *Dilona Somai,* the principal author of this report, is an Environmental Consultant with approximately 5 years' experience. She holds an Honours BSc degree in

Environmental Management and is a registered Candidate Natural Scientist. She has undertaken environmental compliance/ permitting (including basic assessments, water use license applications, social and environmental due diligence, social and environmental management systems and mining and prospecting right applications) and public participation /stakeholder engagement.

» *John von Mayer* is a Senior Environmental Consultant and a registered Professional Natural Scientist. He holds an Honours BSc degree with 7 years of experience in the environmental field. His competencies lie in environmental impact assessments and compliance monitoring for small and large scale projects.
» *Gabriele Wood*, the public participation consultant for this project, holds an 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*, the project manager for this project, is a registered Professional Natural Scientist and holds a Master of Science degree. She has 18 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. Savannah Environmental has completed the EIA process and received environmental authorisations for numerous renewable energy projects and their associated infrastructure. In order to adequately identify and assess potential environmental impacts associated with the proposed project, Savannah Environmental has reviewed and considered previous EIAs undertaken within the area, and has appointed the following specialists to conduct specialist impact assessments:

» Bird Impact Assessment - Chris van Rooyen Consulting
» Visual Impact Assessment - Afzelia Environmental Consultants and Environmental Planning and Design
» Phase 1 Archaeological Impact Assessment - Eastern Cape Heritage Consultants cc
» Ecological Assessment - Eco-Case Consulting (Pty) Ltd

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

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 developer and I&APs to the environmental team was correct and valid at the time it was provided.
» It is assumed that the alternative substation development sites and power line corridors identified by the developer represent technically suitable sites for the establishment of the proposed project.
» It is assumed that the proposed connection to the National Grid is correct in terms of viability and need.
» Conclusions of 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 grid connection alternatives.

Refer to the specialist studies in **Appendix D** for specialist study specific limitations.

BASIC ASSESSMENT REPORT FOR PUBLIC REVIEW

This Basic Assessment Report has been prepared by Savannah Environmental in order to assess the potential environmental impacts associated with the proposed power line and substation alternatives associated with the authorised Golden Valley Wind Energy Facility Project II near Cookhouse, in the Eastern Cape Province. This process is being undertaken in support of an application for environmental authorisation to the National Department of Environmental Affairs (DEA). The 30-day period for review is from **[22 March 2016 to 25 April 2016]**. The report is available for public review at the following locations:

» Cookhouse Public Library (6 Main Road, Cookhouse)
» www.savannahsa.com

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

Gabriele Wood
Savannah Environmental
Tel: 011 656 3237
Fax: 086 684 0547
Email: gabriele@savannahsa.com
Post: PO 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

Terra Wind Energy Golden Valley (Pty) Ltd received environmental authorisation in April 2011 for the Golden Valley Wind Energy Facility (WEF) (DEA Ref No: 12/12/20/1717). An application for amendment of this project to split it into 2 phases, i.e. Golden Valley Wind Energy Facility (Project I) which consists of 48 turbines and Golden Valley II Wind Energy Facility (Project II) up to 126 turbines, is currently underway. Project I is a Preferred Bidder project currently working towards Financial Close. Project II is to be developed by Golden Valley II Wind (RF) Proprietary Limited and will be bid into the Department of Energy (DoE) Renewable Energy Independent Power Producer Procurement Programme.

The Proposed 132kV Power line and on-site Substation associated with the <u>Golden Valley II Wind Energy Facility</u>

In order to connect the Golden Valley WEF Project II to the national electricity grid, the following is being proposed by Golden Valley II Wind (RF) Proprietary Limited:

» The construction of a double circuit 132kV power line (approximately 7km in length); and
» An on-site substation, located within the Golden Valley II WEF footprint, with a footprint of approximately 250m x 250m (62 500m^2).

Initially the Developer looked at constructing two 132kV powerlines running parallel to one another to the existing Eskom Poseidon-Albany 132kV power line, but it was decided to run a double circuit on a single pole to minimise the environmental impacts, however, this may change due to Eskom requirements in the future and hence why the Developer included a 250m buffer in the assessments.

Two alternative substation locations (*CVG proposed substation* – the "preferred" location and the *BTE proposed substation* – the "alternative" location) and one connection point into the existing Eskom Poseidon-Albany 132kV power line have been identified. This has resulted in two alternative power line alignments being proposed. A 250m wide corridor is being investigated for the siting of the proposed power line for each alternative. Access roads (approximately 4m in width) will be constructed along

the power line servitude where required.

The project site falls within the Blue Crane Route Local Municipality and Sarah Baartman District Municipality of the Eastern Cape Province. The development will take place approximately 16km east of Cookhouse and 20km south-west of Bedford (refer to Figure 1 and Table 2). The site is located southwest of the gravel road connecting Middleton/N10 National Road to the Cookhouse to Bedford road and the following properties will be affected by the construction of the proposed Project:

» Parent Farm Olyf Fonteyn: Remaining extent of the Farm Mullerskraal Nr. 159;
» Portion 1 of the Farm Nr. 158 (Varkens Kuyl);
» Farm 155 (Quagas Kuyl);
» Farm 260 Bedford; and
» Farm 242.

Table 2: Location of the study area

Province	Eastern Cape Province
District Municipality	Sarah Baartman (Previously Cacadu)
Local Municipality	Blue Crane Route
Ward Number(s)	Ward 1
Farm Name & Portion number	Quagas Kuyl 155 Parent Farm Olyf Fonteyn: Mullers Kraal Re/159 Varkens Kuyl 1/158 Farm 260 Farm 242
SG Codes	C01000000000015500000 C01000000000015900000 C01000000000015800001 C01000000000026000000 C01000000000024200000

Construction of the double circuit 132kV Power Line

The proposed 132kV power line considered within this Basic Assessment Report will be approximately 7km in length, and would be constructed within a servitude of approximately 36m in width. This servitude would be within the 250m wide corridor assessed through this BAR. Power lines are constructed in the following simplified sequence:

Step 1: Survey of the route
Step 2: Determination of the conductor type
Step 3: Selection of best-suited conductor, towers, insulators, foundations
Step 4: Final design of line and placement of towers

Step 5: Issuing of tenders, and award of contract to construction companies
Step 6: Vegetation clearance and construction of access roads (where required)
Step 7: Tower pegging
Step 8: Construction of foundations
Step 9: Assembly and erection of towers
Step 10: Stringing of conductors
Step 11: Rehabilitation of disturbed area and protection of erosion sensitive areas
Step 12: Testing, commissioning and maintenance

Construction of the proposed power line will take approximately 15 months to complete.

Power line towers (or pylons) are an average distance of 200m apart but this can be increased to 375m depending on the topography and terrain to be spanned. Self-supporting structures (suspension pole), guyed intermediate or guyed suspension and angle strain structures can be used in the power line alignment. Construction of 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 construction footprint of each tower will be approximately 10mx10m (100m²) depending on the final structure to be used and the geotechnical conditions on site.

The servitude width for a 132kV power line is approximately 36m. 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 6,7m. The minimum distance between trees or shrubs and any bare phase conductor of a 132 kV power line must be 4m, allowing for the possible sideways movement and swing of both the power line conductor and the tree or shrub. On receipt of an approval of the final corridor from the Environmental Authorities and after negotiations with landowners and final environmental and technical surveys, the final definition of the centre line for the power line and co-ordinates of each bend in the line will be determined. 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 on-site substation

An on-site substation 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.

Operation and Maintenance Phase

The proposed power line and on-site substation will require routine maintenance work throughout the operation period. During operation, the power line servitude and substation will be accessed using an authorised access road off the N10 national road or any access roads established during the construction phase. A servitude of approximately 36m will be registered (a right of way) along the length of the power line. During this operation phase vegetation within the servitude and at the substation will require management only if it impacts on the operational objectives of the infrastructure.

Decommissioning Phase

The power line and on-site substation 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. If economically feasible/desirable the decommissioning activities would comprise the disassembly of the individual components and removal from site. This phase would include the following decommissioning activities:

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.

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

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

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	An **on-site substation** will be constructed within the Golden Valley Wind Energy Facility Project II site to facilitate the grid connection. This site occurs outside urban areas. The substation will have an approximate footprint of 250m x 250m A **132kV double circuit power line** will be constructed (approximately 7km in length) outside an urban area to connect the proposed on-site substation to the existing Eskom Poseidon-Albany 132kV power line.
GN R.983, Activity 12: The development of (xii) infrastructure or structures with a physical footprint of 100 square meters or more where such development occurs (a) within a watercourse; (c) if no development setback exists within 32m of a watercourse measured from the edge of a watercourse	The power line will located be within 32m of a watercourse. A low level crossing or culvert which does not impede flow or natural functioning of the non-perennial watercourse may be constructed within the watercourse for access roads associated with the power line.
GN R.983, Activity 19: The infilling or depositing of any material of more than 5 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 5 cubic metres from (i) a watercourse	The construction of access roads required for the construction and maintenance activities of the power line may require infilling or removal of $5m^3$ or more of material into/from the watercourse for the placement of culverts.
GN R.983, Activity 27: The clearance of an area of 1 hectare or more, but less than 20 hectares of indigenous vegetation.	The area to be cleared of indigenous vegetation for the proposed substation (~6,25ha) is bigger than 1 hectare but less than 20 hectares, and will include the clearance of natural vegetation.
GN R.983, Activity 28: Residential, mixed, retail, commercial, industrial or institutional developments where such land was used for agriculture or afforestation 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 current land use in the area is for agriculture and the total land to be developed is bigger than 1 hectare.
GN 985, Activity 4: The development of a road wider than 4 metres with a reserve less than 13, 5 metres.	Access roads (approximately 4m in width) will be constructed along the power line servitude where required. The study area includes CBA areas defined for the Eastern Cape Biodiversity

Listed activity as described in GN R.983 and 985	**Description of project activity**
	Plan.
GN 985, Activity 12: The clearance of an area of 300 square metres or more of vegetation where 75% or more of the vegetative cover constitutes indigenous vegetation. In the Eastern Cape ii. Within critical biodiversity areas identified in bioregional plans	The project would require the clearance of natural vegetation of 300 m^2 or more. The study area includes CBA areas defined within the Eastern Cape Biodiversity Plan.
GN 985, Activity 14: The development of: (xii) infrastructure or structures with a physical footprint of 10 square metres or more where such development occurs (c) if no development setback has been adopted, within 32m of a watercourse, measured from the edge of a watercourse In the Eastern Cape i) Outside urban areas in: ff) critical biodiversity areas or ecosystem service areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans	Potential construction of power line infrastructure or structures within 32m of a watercourse. The study area includes CBA areas defined for the Eastern Cape Biodiversity Plan.
GN 985, Activity 18: The widening of a road by more than 4 metres, or the lengthening of a road by more than 1 kilometre. In the Eastern Cape ii. Outside urban areas, in: (ee) Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans.	Existing access roads will be widened to approximately 4m in width along the power line servitude where required. The study area includes CBA areas defined for the Eastern Cape Biodiversity Plan.
GN 985, Activity 23: The expansion of – (iii) bridges where the bridge is expanded by 10 square metres or more in size Occurs- (a) within a watercourse In the Eastern Cape ii. Outside urban areas, in: (ee) Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans.	Existing bridges may be expanded by 10 square metres or more along the power line where it spans over a water course, if required. The study area includes CBA areas defined for the Eastern Cape Biodiversity Plan.

2. FEASIBLE AND REASONABLE ALTERNATIVES

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

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

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

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

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

a) Site alternatives

Two site alternatives have been identified for the on-site substation – the proposed *CVG* on-site substation (preferred) and proposed *BTE* on-site substation (alternative). These two alternatives are considered within this Basic Assessment Report and a 250m buffer was included in the assessment of the locations (refer to **Appendix A**) and are described below.

Proposed CVG on-site substation (preferred): This includes the construction of an on-site substation on the farm Quagas Kuyl 155 with a maximum footprint of

approximately 250m x 250m. This site is situated approximately 7km north-east of the existing Eskom Poseidon-Albany 132kV power line. The substation site is related directly to the optimised layout of the Golden Valley Wind Energy Facility Project II. The proposed substation will be located within the authorised Golden Valley Wind Energy Facility Project II footprint, and siting thereof is based on, inter alia, the following:

» Grid connection optimisation - The proposed CVG on-site substation is located ~7km to the southwest of the Eskom Poseidon-Albany 132kV power line. This means that the preferred location of the facility would require a short overhead power line.
» The proposed on-site substation supports the optimised wind energy facility layout.
» The proposed facility substation complex location is technically suitable for construction (e.g. in terms of topography, access and ground conditions (to be confirmed through a geotechnical investigation).

Proposed BTE on-site substation (alternative): Includes the construction of an on-site substation on the farm Mullers Kraal RE/155 with a maximum footprint of approximately 250m x 250m which is situated approximately 7km north-east of the existing Eskom Poseidon-Albany 132kV power line. The substation site is related directly to the optimised layout of the Golden Valley Wind Energy Facility Project II. The proposed substation will be located within the authorised Golden Valley Wind Energy Facility Project II footprint. The following factors were given due consideration as to why the proposed BTE on-site substation is the least preferred option:

» The associated power line is less economically viable to construct due to the additional bends when compared to the preferred alternative.

CVG proposed on-site substation: Technically Preferred		
Description	**Lat (DDMMSS)**	**Long (DDMMSS)**
The CVG proposed substation site is proposed within the same footprint as the already authorised Golden Valley WEF Project II which is situated 7km north-east of the existing Eskom Poseidon-Albany 132kV power line.	32° 50' 14.30"S	25° 55' 38.75"E
BTE proposed substation: Alternative		
Description	**Lat (DDMMSS)**	**Long (DDMMSS)**
The BTE proposed on-site substation site is proposed within the same footprint as the already authorised Golden Valley WEF Project II which is situated 7km north-east of the existing Eskom Poseidon-Albany 132kV power line.	32° 50' 30.976" S	25° 56' 19.880" E
Alternative 3		
Description	Lat (DDMMSS)	Long (DDMMSS)

In the case of linear activities:

Two potential grid route options, i.e. alternatives CVG route and BTE routes, are considered for the proposed 132kV overhead power line which will connect the proposed on-site substation to the Eskom Poseidon-Albany 132kV power line. These two alternatives are considered within this Basic Assessment Report (refer to Appendix A) and are described below.

Power line corridors

Proposed CVG Power line corridor (preferred) (green line on Figure 1)

The **proposed CVG power line corridor** involves the construction of a 132kV power line (~7km) from the proposed CVG on-site substation to the Eskom Poseidon-Albany 132kV power line. This corridor crosses the following properties: Farm 260, Farm 242, Varkens Kuyl 1/158, Quagas Kuyl 155 and Mullers Kraal RE/159. As detailed in this report, the proposed CVG power line corridor was identified as the preferred route from a technical perspective as it is associated with the preferred proposed CVG on-site substation

Proposed BTE Power line corridor (alternative) (blue line on Figure 1)

The **proposed BTE power line corridor** involves the construction of a 132kV power line (~7km) from the proposed BTE on-site substation to the Eskom Poseidon-Albany 132kV power line. This corridor crosses the following properties: Farm 260, Farm 242, Varkens Kuyl 1/158 and Mullers Kraal RE/159. The proposed BTE power line corridor was identified as the less preferred route from a technical as it is associated with the less preferred proposed BTE on-site substation.

	Latitude (S):	Longitude (E):
Alternative 1 (Preferred alternative): Proposed CVG Power line corridor		
• Starting point of the activity	32° 50' 13.999" S	25° 55' 38.746" E
• Middle/Additional point of the activity	32° 49' 33.228" S	25° 57' 39.853" E
• End point of the activity	32° 48' 56.623" S	25° 59' 42.959" E
Alternative 2: Proposed BTE Power line corridor BTE		
• Starting point of the activity	32°50' 32.074" S	25°56' 20.288" E
• Middle/Additional point of the activity	32° 49' 47.499" S	25° 57' 57.554" E
• End point of the activity	32°48' 56.596" S	25°59' 43.030" E
Alternative 3 (if any)		
• Starting point of the activity		
• Middle/Additional point of the activity		
• End point of the activity		

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

A table has been attached as **Appendix J1** with 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 on-site substation and power line is required to conform to Eskom's technical standards as it forms part of the national electricity supply network and must fit in with the existing network systems, technology and infrastructure. The broader corridor being assessed for the power line within this Basic Assessment allows for the avoidance of identified environmental sensitivities to some extent through the appropriate placement of the 36m wide servitude within this 250m wide 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 or on-site substation exist for the transmission or distribution of electricity.

Alternative 1 (preferred alternative)
Alternative 2
Alternative 3

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

The choice of structure to be used for the on-site substation and power line will be determined in consultation with Eskom as it needs to conform to authorised standards and technical requirements for grid infrastructure. The structure will not significantly affect the environmental impact of the proposed development in any way.

Alternative 1 (preferred alternative)
Alternative 2
Alternative 3

e) No-go alternative

This is the option of not constructing the power line and substation. 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:
CVG substation **(preferred)**	250m x 250m
BTE substation **(alternative)**	250m x 250m
Alternative 3 (if any)	m^2

or, for linear activities:

Alternative:	Length of the activity:
Power line corridor CVG **(preferred)**	± 7 km
Power line corridor BTE **(alternative)**	± 7 km
Alternative 3 (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 250m x 250m
Power line corridor CVG **(preferred)**	Servitude = 36m
Power line corridor BTE **(alternative)**	Servitude = 36m
Alternative A3 (if any)	

4. SITE ACCESS

Does ready access to the site exist?	**NO**

Access to the project site will be from the N10, via existing farm roads and authorised access roads to and within the Golden Valley II Wind Energy Facility site.

Along the power line new access roads will be required for construction and maintenance. For the CVG route it will be approximately 6km in length, and for the BTE route it will be approximately 5km in length.

Describe the type of access road planned:

On-site Substation: Access to the project site will be from the N10, via existing farm roads and authorised access roads to and within the Golden Valley II Wind Energy Facility site.

Power line: Access to the project site will be from the N10, via existing farm roads and authorised access roads to and within the Golden Valley II Wind Energy Facility site. Along the power line new access roads will be required for construction and maintenance.

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.

N/A. Access to the project site will be from the N10, via existing farm roads and authorised access roads to and within the Golden Valley II Wind Energy Facility.

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 included within **Appendix A**.

6. LAYOUT/ROUTE PLAN

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

The site or route plans must indicate the following:

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

Refer to **Appendix A**.

7. SENSITIVITY MAP

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

- Watercourses;
- The 1:100 year flood line (where available or where it is required by DWA);
- Ridges;
- Cultural and historical features;
- Areas with indigenous vegetation (even if it is degraded or infested with alien species); and
- Critical biodiversity areas.

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

An A3 Sensitivity map has been included within **Appendix A**.

8. SITE PHOTOGRAPHS

Colour photographs from the centre of the site must be taken in at least the eight major compass directions with a description of each photograph. Photographs must be

attached under Appendix B to this report**.** It must be supplemented with additional photographs of relevant features on the site, if applicable.

Site photographs 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.

Typical facility illustrations are 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
The Golden Valley Wind Energy Facility has received Environmental Authorisation. The properties on which the wind energy facility is proposed has been rezoned for this purposed. The siting of the proposed alternatives for the power line and on-site substation falls within the footprint of the Golden Valley Wind Energy Facility Project II boundary. A servitude for the power line will need to be registered once the final route has been determined based on the outcomes of the Basic Assessment and landowner negotiations.			
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'. One of the challenges, as noted in the PSDF, is that infrastructure is poorly located, under-maintained and insufficient to foster higher growth and spatial transformation, with specific mention made to energy transmission and distribution networks being under-maintained and undercapitalised. 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 project area is located within the Blue Crane Local Municipality approximately 16km east of Cookhouse and 20km south-west of Bedford. The power line and on-site substation fall outside the urban edge and therefore will 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 Blue Crane Route Local Municipality (BCRM) IDP acknowledges that wind generation initiatives in the Cacadu District are fast growing with a large number of generation facilities under investigation, and recognises it as an opportunity in renewable energy. This proposed Project will not compromise IDP objectives but will rather assist in reaching these as the municipality aims to provide free basic services in the form of water, sanitation, *electricity* and refuse removal throughout the BCRM, especially indigent households. This Project will assist in supporting the local electricity supply by providing a feasible grid connection solution for the Golden Valley Wind Energy Facility Project II.			
(d) Approved Structure Plan of the Municipality	**YES**		Please explain
The Sarah Baartman District Municipality (previously Cacadu) and Blue Crane Local Municipality are aware of the approved Golden Valley Wind Energy Facility. The Cacadu Rural Economic Development Initiative (REDI) contained in the BCRM IDP recognises renewable energy as a catalytic intervention to unlock the economic growth potential of the district and local municipality. The proposed power line and on-site substation support the Golden Valley Wind Energy Facility Project II and do not compromise the structure of the municipal plan.2			
(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 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, 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 CBA areas are present on the north-west portion of the site (affected farms: Quagas Kuyl 155 and Mullers Kraal RE/159). The location of the infrastructure will be planned such that 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 and on-site substation is to enable the connection of the Golden Valley Wind Energy Facility Project II to the 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 and on-site substation is to enable the connection of the Golden Valley Wind Energy Facility Project II to the national grid. The project will enable the transmission of up to 140MW of generated electricity to the electricity grid, which will have a positive economic impact at a local and regional scale.			
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 does not fall within the infrastructure planning of the municipality and will not have implications on the infrastructure planning for the municipality.			
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 and solar. This contributes to 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. In order to integrate the power generated by the Golden Valley Wind Energy Facility Project II into the national grid, the facility is required to be connected to the Poseidon Substation as described in this report. The proposed project will facilitate this connection.			
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 Golden Valley Wind Energy Facility Project II is an environmentally authorised project (as part of the larger Golden Valley Wind Energy Facility). The location of this facility is therefore already determined. In terms of Eskom's requirements, the wind energy facility is required to connect to the existing Eskom Poseidon-Albany 132kV power line. The proposed facility substation position 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 Golden Valley Wind Energy Facility Project II is an environmentally authorised project (as part of the larger Golden Valley Wind Energy Facility). In terms of Eskom's			

requirements, the proposed power line and on-site substation is required to connect to the existing Eskom Poseidon-Albany 132kV power line. The proposed power line route and on-site substation alternatives 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 substation and far majority of the power line fall within the boundaries of the wind energy facility, the location of this infrastructure is considered the best practicable option to minimise environmental impacts.

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 on-site substation and power line will have **medium** to **low** environmental impacts. The proposed project will facilitate the connection of the Golden Valley Wind Energy Facility Project II to the national grid thereby facilitating the distribution of renewable energy. 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.

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 on-site substation are associated with the authorised Golden Valley Wind Energy Facility Project II (as part of the larger Golden Valley Wind Energy Facility). 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

Private landowners will be affected by the proposed project. These landowners will be consulted by Golden Valley II Wind (RF) Proprietary Limited and the environmental team and are aware of the proposed project. No person's rights will be negatively affected.

13. Will the proposed activity/ies compromise the "urban edge" as defined by the local municipality?		**NO**	Please explain

The project area is located within the Blue Crane Route Local Municipality approximately 16km east of Cookhouse and 20km south-west of Bedford. The power line and on-site substation fall outside the urban edge and therefore will 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 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, 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 power line and facility substation in operation will support the wind energy facility which will result in an increase of 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 and on-site substation is to enable the connection of the Golden Valley Wind Energy Facility Project II to the national electricity grid, which will have a positive economic impact at a local and regional level.	
16. Any other need and desirability considerations related to the proposed activity?	Please explain
The power line and on-site substation form part of the electrical infrastructure of the Golden Valley Wind Energy Facility Project II that will produce (renewable) energy. The Project will contribute to the distribution of power to the national grid once the facility is constructed.	
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 and substation will form part, will assist in reducing the carbon footprint, and 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 process by means of identifying, predicting and evaluating the actual and potential impacts on the 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.

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 2: 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 of 2014 a Basic Assessment Process is required to be undertaken for the proposed project.	Department of Environmental Affairs (DEA) – competent authority Eastern Cape: Department of Economic Development, Environmental Affairs and Tourism (DEDEAT)	The listed activities triggered by the proposed power line and on-site substation 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	DEA DEDEAT	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.

Legislation	Applicable Requirements	Relevant Authority	Compliance Requirements
	cumulative effect of a variety of impacts.		
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 and Sanitation (DWS)	A water use license (WUL) is required to be obtained if water uses are identified in terms of Section 21 of the Act. Water uses identified may include Section 21 (c) & (i) uses (i.e. crossing of watercourses). Section 19 of the Act will apply with respect to the potential impact on drainage lines and ephemeral streams which will potentially occur primarily during the construction phase (i.e. pollution from construction vehicles).
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.	Department of Mineral Resources (DMR)	As no borrow pits are expected to be required for the construction of the power line or substation, no mining permit or right is required to be obtained.
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.	DEA 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

Legislation	Applicable Requirements	Relevant Authority	Compliance Requirements
	GN R 827 – National Dust Control Regulations prescribes general measures for the control of dust in all areas		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 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	South African Heritage Resources Agency (SAHRA) 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.

Legislation	Applicable Requirements	Relevant Authority	Compliance Requirements
	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. 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	DEA 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. Specialist ecology studies have been undertaken as part of the Basic Assessment process (refer to Appendix D). Only one species (*Euphorbia meloformis subsp. valida*) listed as a protected species within the National Environmental Management: Biodiversity Act, 2004 (Act 10 of 2004): Publication of Lists of Critically Endangered, Endangered, Vulnerable and Protected Species was identified within the development area. A permit will be required to be obtained should this species be impacted by the final development footprint. Most of the conservation worthy species is listed within Schedule 4

Legislation	Applicable Requirements	Relevant Authority	Compliance Requirements
	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).		(Protected Plants) of the relevant conservation ordinance (Eastern Cape Nature and Environmental Conservation Ordinance No.19 of 1974 – referred to as PNCO hereforth). A total of 17 species are listed on the Red List plant species. A permit would need to be obtained for all SCC that are affected by the development.
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, Forestry and Fisheries	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. Category 1b invasive alien – *Opuntia engelmannii* is found within the study area.
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	Department of Agriculture, Forestry and Fisheries	A permit would need to be obtained for any protected trees that are affected by the development.

Legislation	Applicable Requirements	Relevant Authority	Compliance Requirements
	acquire or dispose of any protected tree or any 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 908 provides a list of protected tree species.		Tree species listed within the POSA generated list are protected within the National Forest Act (NFA) namely: *Curtisia dentata, Podocarpus falcatus* and *Sideroxylon inerme subsp. inerme*.
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, and 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	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

Legislation	Applicable Requirements	Relevant Authority	Compliance Requirements
	of such substances or products in relation to the degree of danger; to provide for the prohibition and control of the importation, manufacture, sale, use, operation, modification, disposal or dumping of such substances and products. » 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.		Health.
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	DEA: Chemicals and Waste Management 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

Legislation	Applicable Requirements	Relevant Authority	Compliance Requirements
	to the list. » Removing waste management activities from the list. » Making other changes to the particulars on the list. In terms of the Regulations published in terms of this Act (GN 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		the Act, as detailed in the EMPr (refer to Appendix G).

Legislation	Applicable Requirements	Relevant Authority	Compliance Requirements
	health are prevented.		
National Road Traffic Act (Act No 93 of 1996)	» The technical recommendations for highways (TRH 11): "Draft Guidelines for Granting of Exemption Permits for the Conveyance of Abnormal Loads and for other Events on Public Roads" outline the rules and conditions which apply to the transport of abnormal loads and vehicles on public roads and the detailed procedures to be followed in applying for exemption permits are described and discussed. » Legal axle load limits and the restrictions imposed on abnormally heavy loads are discussed in relation to the damaging effect on road pavements, bridges, and culverts. » The general conditions, limitations, and escort requirements for abnormally dimensioned loads and vehicles are also discussed and reference is made to speed restrictions, power/mass ratio, mass distribution, and general operating conditions for abnormal loads and vehicles. Provision is also made for the granting of permits for all other exemptions from the requirements of the National Road Traffic Act and the relevant Regulations.	South African National Roads Agency Limited (SANRAL) (national roads) Provincial Department of Transport	» An abnormal load/vehicle permit may be required to transport the various components to site for construction. These include route clearances and permits will be required for vehicles carrying abnormally heavy or abnormally dimensioned loads. » 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).

Legislation	Applicable Requirements	Relevant Authority	Compliance Requirements
	Provincial Legislation/ Policies / Plans		
Nature Conservation Ordinance (Act No. 19 of 1974)	» Article 63 prohibits the picking of certain fauna (including cutting, chopping, taking, and gathering, uprooting, damaging, or destroying). » Schedules 1 and 2 list Endangered and Protected animals. » Schedule 3 lists endangered flora and Schedule 4 lists protected flora. » Articles 26 to 47 regulate the use of wild animals.	DEDEAT	Species of conservation concern were identified within the project development area (refer to Appendix D for the list). Most of the conservation worthy species is listed within Schedule 4 (Protected Plants) of the relevant conservation ordinance (Eastern Cape Nature and Environmental Conservation Ordinance No.19 of 1974 – referred to as PNCO hereforth). A total of 17 species are listed on the Red List plant species and are as follows: » Endangered: *Euphorbia globosa, Haworthia aristata* » Threatened: *Drosanthemum crissum* » Vulnerable: *Bergeranthus albomarginatus, Nerine huttoniae, Erica glumiflora* » Critically Rare: *Gasteria doreeniae* » Rare: *Gasteria bicolor var.*

Legislation	Applicable Requirements	Relevant Authority	Compliance Requirements
			liliputana, Crassula socialis » Near Threatened: *Crinum campanulatum, Euphorbia meloformis subsp. valida, Pelargonium reniforme*, » Declining: *Boophone disticha, Crinum macowanii* » Data Deficient: *Drimia anomala, Bergeranthus multiceps* Only one species (*Euphorbia meloformis* subsp. *valida*) recorded on the site is included as a protected species within the National Environmental Management: Biodiversity Act, 2004 (Act 10 of 2004): Publication of Lists of Critically Endangered, Endangered, Vulnerable and Protected Species (Referred to as TOPS, 2014 hereforth). A permit would need to be obtained for all SCC that are affected by the development.

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 spoil material from clearing activities as well as metal and cabling off-cuts. Immediately non-biodegradable waste will be trucked to the nearest registered waste disposal facility for appropriate disposal or recycling.

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 a licenced 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 dust generation and emissions from vehicles and machinery. However the dust and emissions will have a short term duration (limited to construction activities) and have limited impact in terms of extent and severity. Appropriate dust suppression measures (as recommended in the Environmental Management Programme) will be implemented, if necessary, to reduce the impacts. It is recommended that construction vehicles will be serviced and kept in good mechanical condition to minimise possible exhaust emissions.

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:

A limited amount of noise will be generated during the construction phase of the power line and on-site substation due to movement of heavy machinery on site. The operation phase will not generate any significant noise and is only limited to the insignificant level of noise made when electricity is transported and/or transformed.

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?	**YES**

If YES, please provide proof that the application has been submitted to the Department of Water Affairs.

A Water Use License application will be submitted after the project is selected as a Preferred Bidder Project, in accordance with the Department of Water and Sanitation (DWS) requirements.

14.ENERGY EFFICIENCY

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

Not applicable.

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

Not applicable.

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 (Previously Cacadu)
Local Municipality	Blue Crane Route
Ward Number(s)	Ward 1
Farm Name & Portion number	» Quagas Kuyl 155 » Parent Farm Olyf Fonteyn: Mullers Kraal Re/159 » Varkens Kuyl 1/158 » Farm 260 » Farm 242
SG Codes	» C01000000000015500000 » C01000000000015900000 » C01000000000015800001 » C01000000000026000000 » C01000000000024200000

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

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

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.

Proposed CVG power line and substation (Preferred)

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

Proposed BTE power line and substation (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 3 (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
2.2 Plateau	2.5 Open valley	2.8 Dune
2.3 Side slope of hill/mountain	**2.6 Plain***	2.9 Seafront

*Applicable to both the power line corridor and substation alternatives

3. GROUNDWATER, SOIL AND GEOLOGICAL STABILITY OF THE SITE

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

	CVG substation: (Preferred)		**BTE substation: (Alternative)**		**CVG power line Corridor: (Preferred)**		**BTE power line Corridor: (Alternative)**	
Shallow water table (less than 1.5m deep)		NO		NO		NO		NO
Dolomite, sinkhole or doline areas		NO		NO		NO		NO
Seasonally wet soils (often close to water bodies)		NO		NO		NO		NO
Unstable rocky slopes or steep slopes with loose soil		NO		NO		NO		NO
Dispersive soils (soils that dissolve in water)		NO		NO		NO		NO
Soils with high clay content (clay fraction more than 40%)		NO		NO		NO		NO
Any other unstable soil or geological feature		NO		NO		NO		NO
An area sensitive to erosion		NO		NO		NO		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 aliensE*	**Natural veld with heavy alien infestation[E*]**	Veld dominated by alien speciesE	Gardens
Sport field	Cultivated land	Paved surface	Building or other structure	Bare soil

*Applicable to both the power line corridor and substation alternatives

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)**

According to Mucina and Rutherford (2006) the region can be described as gently undulating plains supporting open, dry grassland interspersed with Acacia karroo woodland vegetation (especially along the drainage lines). The grassland is relatively short (10 – 100 cm) and is dominated by *Digitaria argyrograpta, Tragus koelerioides*, *Eragrostis curvula* and *Cymbopogon caesius*. A strong karroid influence may also persist. To the west of the site the landscape transforms into a drier, more undulating and rugged landscape. Steeper slopes and deeply dissected rivers support a medium thicket type, where both the woody trees and shrubs and the succulent component are well developed with many spinescent shrubs. *Portulacaria afra* may be locally dominant but decreases in relative abundance and is replaced by *Euphorbia bothae* with increasing aridity. There is distinct clumping of the vegetation, which is linked to zoogenic mounds, formed principally by termites (*Microhodotermes viator*) earthworms (*Microchaetus*), mole rats (*Cryptomus hottentotus*) and aardvarks (*Orycteropus afer*) – these islands of concentrated nutrients and moisture have richer, deep soils and are often occupied by long-lived woody shrubs and trees such as *Pappea capensis* and *Boscia oleoides* and provide deep soils and for endemic geophytes.

5. SURFACE WATER

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

Proposed CVG substation

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

Proposed CVG Power line corridor

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

Proposed BTE substation (alternative)

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

Proposed BTE Power line corridor (alternative)

Perennial River		**NO**	
Non-Perennial River	**YES**		
Permanent Wetland		**NO**	
Seasonal Wetland	**YES**		
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

The study area is situated within Bedford catchment (sub catchment B2). The Bedford catchment is drained by the eNyara River and covers about 670 km^2. A number of ephemeral streams and drainage lines traverse the study area and surroundings most of which drain in an eastern / north-eastern direction. The proposed location of the preferred substation is situated within a watershed with a number of small drainage lines located to west of the surveyed area (for the substation) and draining north-westwards and westwards. A seasonal wetland is found within the 250m corridor of the preferred CVG power line route. If wetlands will be crossed a water use licence will be applied for.

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

*Applicable to both the Power line corridor and substation alternatives

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)	**YES**	
Core area of a protected area?		**NO**
Buffer area of a protected area?		**NO**
Planned expansion area of an existing protected area?		**NO**
Existing offset area associated with a previous Environmental Authorisation?		**NO**
Buffer area of the SKA?		**NO**

If the answer to any of these questions was YES, a map indicating the affected area must be included in Appendix A **(Refer to the Sensitivity Map in Appendix A)**

Within the study, only a small portion to the west is included in the Eastern Cape's Terrestrial and Aquatic Critical Biodiversity Areas (CBAs) map.

Terrestrial Critical Biodiversity Areas (T_CBAs)

Regarding the T_CBA's, both of the on-site substation options and small sections of power line is located within a CBA2 Corridor 1 area.

Aquatic Critical Biodiversity Areas (A_CBAs)

Regarding the A_CBA, only the PREFERRED location for the on-site substation is located within an Aquatic CBA (CBA2 – A2b).

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:	**YES**	[redacted]

The following results and findings were concluded from the Phase 1 Archaeological Impact Assessment:

Two archaeological sites with Earlier and Middle Stone Age stone tools (msa1 and emsa2) were observed within the servitude of the BTE power line route (refer to Figure 2). Both sites were situated in a drainage line and exposed by surface soil erosion.

Figure 2: Locations of the archaeological sites (red pins) and the white circle marks the archaeological sensitive area

At site esa1 (GPS position: 32.49.760S; 25.56.740E), weathered Middle Stone Age stone tools manufactured from sandstone and hornfels were exposed in a vehicle track and in surface erosion hollows. The stone tools, mainly flakes, chunks and cores (dating older than 30 000 years) (refer to Figure 3) were randomly scattered and were not associated with any other archaeological remains and are also of low heritage significance.

Figure 3: Example of Middle Stone Age stone tools observed

Site emsa2 (GPS position: 32.49.798S; 25.56.907E) was located approximately 200 metres east of msa1 in the same drainage line and comprised a large concentration of Earlier and Middle Stone Age stone tools dating between 1,5 million and 250 000 years old (refer to Figure 4 and 5). The Earlier Stone Age site comprised of small hand axes and cores manufactured on sandstone. These tools were also in secondary context and not associated with any other archaeological remains and considered to be of medium heritage significance. Both the sites fall inside the power line servitude and need mitigation.

Figure 4: Example of Earlier Stone Age tools observed

Figure 5: Example of Middle Stone Age tools observed

Refer to the Phase 1 Archaeological Impact Assessment (**Appendix D**).

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: **(Refer to Phase 1 Archaeological Impact Assessment in Appendix D).**

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)?	**YES** / **NO**

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

At this stage it is unknown whether a permit would be required. This will be determined during the walk through survey and may also be determined during construction. A permit application will be submitted if necessary, after the final siting of the infrastructure and walk through surveys.

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:

StatsSA indicates that 15.2% of the potential workforce in the BCRM is unemployed and a further 50.5% are not economically active in 2011. The remaining 34.3% of the labour force is employed. The overall dependency ratio is 56.8 persons per hundred population of working age. StatsSA 2011 also concludes that 1 953 of the youth in Blue Crane Route are unemployed (Blue Crane Route Local Municipality IDP 2015-2016).

Economic profile of local municipality:

The population in the BCRM is estimated at 36002 (StatsSA, 2011). The population has increased by 595 people over the past 10 years. This is reflective of a 0.17% compound average population growth rate from 2001 to 2011 (Blue Crane Route Local Municipality IDP 2015-2016). The BCRM accounts for 8% of the Sarah Baartman District and 0.5% of the Provincial population. Geographically BCRM makes up 19% of the District municipality's landmass with a population density of 3.25 per km^2 (Blue Crane Route Local Municipality IDP 2015-2016).

StatsSA 2011 reflects that 29% of the population are young and under 15 year of age, which requires intergovernmental planning efforts to jointly focus on improved education and providing sport and recreation facilities. The high number of children could also be an indication of a dependency on child support grants (Blue Crane Route Local Municipality IDP 2015-2016).

According to StatsSA a 7% increase has occurred, from 32% to 39%, in respect of female headed households between 2001 and 2011. The increase is relatively high considering that the population growth rate has been very low over a 10 year period and the male to female sex ratio has only risen marginally. This could be reflective of males migrating in search of employment opportunities outside of the municipal area or the occurrence of single mothers deciding to create a basis for their young with the option of marriage later in life (Blue Crane Route Local Municipality IDP 2015-2016).

A large segment (50.1% -StatsSA 2011) of the population speaks IsiXhosa, followed by 42.2% communicating in Afrikaans. Black South Africans account for 59% of the population, followed by 33% Coloured South Africans. Stats 2011 also indicates that 95.5% of the population were born in South Africa (Blue Crane Route Local Municipality IDP 2015-2016).

StatsSA 2011 reflects that poverty levels are high with 46.1% of the population not receiving any income, and a further 10.8% earn less than R801 per month, therefore technically falling under the poverty line. This is exacerbated by the fact that 65.7% of the potential labour force are not working. The population lack buying power which makes it difficult to exploit local economic development opportunities and the situation implies a high dependency on social grants. Interventions must be created and expedited to support poor communities. The potential economic active labour force

accounts for 60.2% of the total population which reinforces the need to boost the economy and stimulate job growth (Blue Crane Route Local Municipality IDP 2015-2016).

Level of education:

Stats SA 2011 shows that 8.24% of the population in the BCRM over 20 years of age have not received any schooling. The figure is moderate and furthermore shows a decline or negative growth of - 36.6% for the past decade (since 2001), when 4 088 or 19.6% of the population over 20 years had not undergone any schooling (Blue Crane Route Local Municipality IDP 2015-2016).

b) Socio-economic value of the activity

What is the expected capital value of the activity on completion?	R63 million	
What is the expected yearly income that will be generated by or as a result of the activity?	N/A Powerline and Substation	
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?	±20 Local temporary staff No of permanent staff unknown at this stage	
What is the expected value of the employment opportunities during the development and construction phase?	Unknown at this stage	
What percentage of this will accrue to previously disadvantaged individuals?	Unknown at this stage	
How many permanent new employment opportunities will be created during the operational phase of the activity?	Very few, as the power line and substation will be handed over to Eskom and Eskom field staff will inspect the line as needed.	
What is the expected current value of the employment opportunities during the first 10 years?	N/A	
What percentage of this will accrue to previously disadvantaged individuals?	Unknown at this stage	

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)	**CBA:** According to the Eastern Cape Biodiversity Conservation Plan (Berliner & Desmet, 2007) these areas are ecological corridors and/or named macro-ecological corridors adapted from STEP (Subtropical Thicket Ecosystem Programme) and has been rewarded this status due to the close proximity to the following identified Ticket vegetation types as identified by Cowling *et. al*, (2003): » Thicket mosaic – Hartebeeste Karroid Thicket (Not vulnerable) » Thicket solid – Fish Spekoom Thicket (Vulnerable) **A_CBA:** According to the Eastern Cape Biodiversity Conservation Plan these areas contain important free flowing / fish migratory systems, mapped at the Quaternary catchment level based on date from CSIR/DWAF assessment. The study areas fall within this CBA due to its location within the Great Fish River

				Catchment.

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%	
Near Natural (includes areas with low to moderate level of alien invasive plants)	50%	The Bedford Dry grassland is mainly found within the gentle undulating plains to the east of the study area especially the lower lying portions of the gentle slopes and where grazing pressures by livestock (mainly sheep) and game (mainly springbok – *Antidorcas marsupialis*) have not replaced these grasses with a dwarf, karroid dominating shrubland. Soils may be gravely (mainly sandstone) and vary in depth from shallow to moderately deep. Dwarf karroid shrubs, although not dominant, still form an important component of this unit. This unit can be described as mixed grassland dominated with short grasses and a few dwarf shrubs. Due to the relatively natural (near natural) state of this unit and the number of conservation worthy species present within this unit, this vegetation unit is considered to be of Medium – High Sensitivity.
Degraded (includes areas heavily invaded by alien plants)	50%	During the site visit conducted by the Ecologist, it was found that the sections of the proposed power line and substation alternatives, which were located with the CBAs, were in a severely to moderately transformed state. Especially the preferred footprint area for the substation was in a severely transformed and degraded state, to an extent where the landscape can only provide minimal production and little ecological function. Land degradation and transformation has mainly occurred due to the severe invasion of the Category 1b Invasive Alien plant – *Opuntia engelmannii*, which has outcompeted and replaced large portions of land along the crests and upper slopes of the study area. Consequently, this area has an extremely limited ability to fulfil its function as an ecological corridor and the proposed development will thus not significantly

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.).
		affect the greater identified corridor area to fulfil its ecological function.
Transformed (Includes cultivation, dams, urban, plantation, roads, etc.)		

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		

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)

Broad vegetation types as classification by Mucina and Rutherford (2006)

The bulk of the study area (for both options) is located within Bedford Dry Grassland (Grassland Biome, Sub-Escarpment Bioregion) with only the on-site substation of the preferred option and a very small portion of the proposed power line located within the Great Fish Thicket (Albany Thicket Biome).

Bedford Dry Grassland (Gs 18)

This vegetation type has been described by Mucina and Rutherford (2006) as dry grassland interspersed with *Acacia karroo* woodland vegetation covering gently undulating plains. The *Acacia karroo* woodlands are especially prominent along drainage lines. The grassland is relatively short (10 – 100 cm) and dominated by *Digitaria argyrograpta*, *Tragus koelerioides*, *Eragrostis curvula* and *Cymbopogon caesius*. It contains a dwarf shrubby component of karroid origin in the southern and south-western parts of its range.

Great Fish Thicket (AT 11)

This vegetation type has been described by Mucina and Rutherford (2006) as short, medium and tall thicket types occurring along steep slopes of deeply dissected rivers. Both the woody trees and shrubs as well as the succulent component are well developed, with many spinescent shrubs. *Portulacaria afra* is locally dominant, decreasing in relative abundance and is replaced by *Euphorbia bothae* with increasing aridity.

The table below provides details of the conservation status of the vegetation types occurring in and around the study area.

Vegetation Type	Target (%)	Currently Conserved (Statutory & Private) (%)	Transformed (%)	Erosion (%)		Conservation Status	
				Moderate	High	Driver *et al*., 2005; Mucina & Rutherford, 2006	National Ecosystem List (NEM:BA)
Bedford Dry Grassland	23%	1%	3%	31%	25%	Least Threatened	Least Threatened
Great Fish Thicket	19%	10.5%	4%	Very variable		Least Threatened	Least Threatened

According to Mucina and Rutherford (2006) only 3% of the Bedford Dry Grassland has been transformed, mainly for cultivation. The Great Fish Thicket unit has also undergone little transformation up to this point with 3% for cultivation and 1% by urbanisation.

Red List and protected plant species within the broader area

(May potentially occur within the study area)

A species list was obtained from POSA and Zide *et al*. (2015). Of the species that are considered to occur within the geographical area under consideration, there were 119 species which is regarded conservation worthy. Most of the conservation worthy species are listed within Schedule 4 (Protected Plants) of the relevant conservation ordinance (Eastern Cape Nature and Environmental Conservation Ordinance No.19 of 1974 – referred to as PNCO hereafter). A total of 17 species were identified in the study area are listed on the Red List plant species, i.e.:

» Endangered: *Euphorbia globosa, Haworthia aristata*
» Threatened: *Drosanthemum crissum*
» Vulnerable: *Bergeranthus albomarginatus, Nerine huttoniae, Erica glumiflora*
» Critically Rare: *Gasteria doreeniae*
» Rare: *Gasteria bicolor* var. *liliputana*, *Crassula socialis*
» Near Threatened: *Crinum campanulatum*, *Euphorbia meloformis* subsp. *valida*, *Pelargonium reniforme*,
» Declining: *Boophone disticha, Crinum macowanii*
» Data Deficient: *Drimia anomala, Bergeranthus multiceps*

Only one species (*Euphorbia meloformis* subsp. *valida*) recorded on the site is included as a protected species within the National Environmental Management: Biodiversity Act, 2004 (Act 10 of 2004): Publication of Lists of Critically Endangered, Endangered, Vulnerable and Protected

Species (Referred to as TOPS, 2014 hereforth).

Fine-Scale Vegetation Description

Based on the site visit undertaken by the ecologist, it appears that the bulk of the both power line options as well as the alternative on-site substation is located within two variations of the Bedford Dry Grassland namely a *Sporobolus centrifugus - Digitaria eriantha* mixed grassland and *Pelargonium abrotanifolium - Felicia fascicularis* mixed shrubland. A few small drainage lines and an ephemeral stream will be crossed by both power line alternatives, and consist of an *Eragostis bicolor – Aristida canescens* moist grassland. Patches of *Acacia karoo* thicket also occur scattered along the drainage lines and ephemeral stream (more abundant within the stream than along the drainage lines). The far western portion of the preferred power line corridor as well as the preferred on-site substation site is located within a severely transformed form of Great Fish Thicket, consisting of an *Eriocephalus punctulatus – Papaea capensis* open thicket type of vegetation with *Opuntia engelmannii* forming dense, impenetrable patches throughout the area. Along the crest of the low mountain a narrow shrub dominated band forms a sort of ecotone between the Bedford Dry Grassland and the Great Fish Thicket and consist out of a *Stachys cuneata – Eriochephalis ericoides* mixed dwarf shrubland. Throughout the study area the Category 1b Invasive Alien Plant – *Opuntia engelmannii* is problematic occurring as low to medium dense patches mostly small to medium in size (from 10 m^2 up to 80 m^2). However, along the crest and upper footslopes of the western and north-western aspects of the low mountain to the west this situation is much more severe, with *O. engelmannii* forming large, dense (some area impenetrable) patches. *O. engelmannii* also occur in denser patches along the ephemeral stream. Apart from this *Opuntia* species, *O. aurantiaca* (also Category 1b) have also successfully invaded these low lying areas along the ephemeral stream.

SECTION C: PUBLIC PARTICIPATION

1. ADVERTISEMENT AND NOTICE

Publication name	Information to be included in Final BAR together with proof of advertisement.	
Date published	Information to be included in Final BAR together with proof of advertisement.	
Site notice position	**Latitude (S)**	**Longitude (E)**
Site Notice 1	32°50'14.03"	25°59'4.11"
Site Notice 2	32°49'23.81"	25°59'18.48"
Site Notice 3	32°49'12.83"	25°59'56.85"
Date placed	17 February 2016	

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

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.

» A database of all key stakeholders and organs of state was created
» A letter of notification, site notices and advertisement were prepared
» For the public, A2 site notices were placed at conspicuous places around the two proposed power line alternatives and the two proposed substation alternatives announcing the proposed Project
» An advert will be placed in one local newspaper to notify the public about the proposed Project, the EIA process being carried out and the availability of the Draft Basic Assessment Report.
» Stakeholder and I&AP issues and comments raised during the public participation process will be 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.543 – ***Refer to I&AP database contained in Appendix E2***.

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 E3**. This proof may include any of the following:

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

3. ISSUES RAISED BY INTERESTED AND AFFECTED PARTIES

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 final Basic Assessment Report.

4. COMMENTS AND RESPONSE REPORT

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

5. AUTHORITY PARTICIPATION

Authorities and organs of state identified as key stakeholders - ***Refer to I&AP database contained in Appendix E2***.

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.**

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 E2**.

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

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.

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 and decommissioning phases of the proposed power line and substation is provided in the tables overleaf.

Table 3: Impact Assessment for the proposed 132kV **Power Line Alternatives** during preconstruction and construction

Activity	Impact Summary	Significance (with mitigation)		Proposed Mitigation
		CVG PL	BTE PL	
Ecological Impacts				
» Vegetation clearing » Movement of construction vehicles and placement of towers.	***Direct impacts:*** » Potential impacts on vegetation and listed protected plant species.	LOW	LOW	» Preconstruction walk-through of the optimised development footprint for species of conservation concern that would be affected and that can be translocated as well as for the demarcation of sensitive rocky beds and outcroppings and to determine permitting requirements. » Since a large proportion of the identified conservation worthy species at the site are succulent species, the potential for successful translocation is high. Therefore, it is recommended that before construction commences individuals of listed species within the development footprint that would be affected should be counted and marked and translocated (if deemed necessary and according to relevant ratios, as specified by the ecologist conducting the pre-construction walk-through) to similar habitat outside the development footprint. Permits from the relevant provincial authorities, i.e. the Eastern Cape Department of Environmental Affairs and Nature Conservation, will be required to relocate listed plant species. » Any individuals of protected species affected by and observed within the development footprint during construction (ie. Individuals that were missed during initial sweeps), should be translocated under the supervision of the ECO and/or Contractor's Environmental Officer (EO). » Preconstruction environmental induction for all construction staff on site to ensure that basic environmental principles are adhered to. This includes awareness as to no littering, appropriate handling of pollution and chemical spills, avoiding
	Indirect impacts: » Vegetation clearing would also lead to habitat loss for fauna and potentially the loss of faunal species, habitats and ecosystems. » Soil compaction and erosion may impact downstream wetland habitats if a lot of silt enters the drainage systems, and reduce the buffering capacities of the landscape during extreme weather events.	LOW	LOW	

Activity	Impact Summary	Significance (with mitigation)		Proposed Mitigation
		CVG PL	BTE PL	
				fire hazards, minimizing wildlife interactions, remaining within demarcated construction areas etc. » Demarcate all areas to be cleared with construction tape or similar material where practical. However caution should be exercised to avoid using material that might entangle fauna. » ECO and/or Contractor's EO to provide supervision and oversight of vegetation clearing activities and other activities which may cause damage to the environment, especially at the initiation of the project, when the majority of vegetation clearing is taking place. » Ensure that lay down areas, construction camps and other temporary use areas are located in areas of low sensitivity and are properly fenced or demarcated as appropriate and practically possible. » All vehicles to remain on demarcated roads and no unnecessary driving in the veld outside these areas should be allowed. » Regular dust suppression during construction, if deemed necessary, especially along access roads. » During the preconstruction walk-through of the optimized development footprint all exposed bedrock areas and rockeries high in floral species diversity as well as protected species should be demarcated and these areas should be avoided, especially in terms of the placement of pylons. These high diversity rockeries and exposed bedrock are normally small in extent and the planning of service and access roads can be done in such a manner as to avoid these areas (cross areas deemed suitable as identified during pre-construction walk-through. Any protected species which will be impacted by the

Activity	Impact Summary	Significance (with mitigation)		Proposed Mitigation
		CVG PL	BTE PL	
				development (relocated, disturbed or destroyed) will require permits from the relevant provincial authorities. » Drainage line permanent road crossings should be specifically designed not to impede or disrupt the direction and flow of the water where practical. The requirements would also be determined by the Water authorisation processes. » No plants may be translocated or otherwise uprooted or disturbed for rehabilitation or other purpose without express permission from the ECO and or Contractor's EO. » No fuelwood collection on site. » No fires should be allowed on-site.
	Cumulative Impacts: » Cumulative impacts associated with vegetation clearance will result in disturbance of soils, increased soil erosion, reduced habitat for plant and animal species, spread of alien invasive species and a reduction of ecosystem services.	LOW	LOW	» Keep vegetation clearance to a minimum. » Control storm water runoff. » Control soil erosion. » Control alien invasive plants.
» Construction activities such as the operation of heavy machinery and the presence of	***Direct Impact:*** » Potential Faunal Impacts (e.g. road mortalities)	LOW	LOW	» Any fauna directly threatened by the construction activities should be removed to a safe location by the ECO or other suitably qualified person, e.g. the Contractor's EO. » All personnel should undergo environmental induction with regards to fauna and in particular awareness about not harming or collecting species such as snakes, tortoises and owls which
	Indirect Impacts: » Noise and dust pollution on terrestrial fauna at the site	LOW	LOW	

Activity	Impact Summary	Significance (with mitigation)		Proposed Mitigation
		CVG PL	BTE PL	
construction personnel at the site.	during construction. ***Cumulative Impacts:*** » The construction of the infrastructure would contribute to cumulative disturbance and habitat loss for fauna, but the contribution would be very small and is not considered significant.	LOW	LOW	are often persecuted out of superstition. » All hazardous materials used during construction should be stored in the appropriate manner to prevent contamination of the site. Any accidental chemical, fuel and oil spills that occur at the site should be cleaned up in the appropriate manner as related to the nature of the spill. » All construction vehicles should adhere to a low speed limit (40km/h is recommended) to avoid collisions with susceptible species such as snakes and tortoises. » No activity should be allowed at the site between sunset and sunrise, except for security personnel guarding the development. » Any dangerous fauna (snakes, scorpions etc) that are encountered during construction should not be handled or antagonised by the construction staff and the ECO or other suitably qualified person(s), e.g. the Contractor's EO, should be contacted to remove the animals to safety. » No litter, food or other foreign material should be thrown or left around the site and should be placed in demarcated and fenced rubbish and litter areas that are animal proof. » Mitigation measures such as wetting of stockpiles and access roads should be done were deemed necessary by ECO/EO.
» Construction of power line and access roads	***Direct Impact:*** » Increased loss of soil, loss of or disturbance to downstream indigenous wetland vegetation and habitats important for	MEDIUM	LOW	» No pylons may be placed within the 32 m buffer areas surrounding streams and drainage lines. » No stockpiling or storage of any material may be allowed within these drainage lines and ephemeral streams. » Permanent roads crossing drainage lines should be specifically designed not to impede or disrupt the direction and flow of the

Activity	Impact Summary	Significance (with mitigation)		Proposed Mitigation
		CVG PL	BTE PL	
	hydrophyllic faunal species and invertebrates, impairment of wetland function, change in channel morphology in downstream wetlands.			water where practically possible. Requirements would also be determined by the Water licensing processes. » Permanent roads crossing drainage lines should be placed in areas without extensive wetlands and preferably in rocky areas where the risk of disruption and erosion is low, where practically possible. All drainage line crossings should be inspected as part of the preconstruction activities to ensure that the optimal and acceptable locations have been chosen for river crossings, which would also form part of the water permitting processes. » Any erosion problems observed should be rectified immediately and monitored thereafter to ensure that they do not re-occur. » All bare areas, as a result of the development, should be revegetated with locally occurring species, to bind the soil and limit erosion potential. » Roads and other disturbed areas should be regularly monitored for erosion and problem areas should receive follow-up monitoring to assess the success of the remediation. » Silt traps should be used where there is a danger of topsoil or material stockpiles eroding and entering streams and other sensitive areas. » Topsoil should be removed and stored separately and should be reapplied where appropriate as soon as possible in order to encourage and facilitate rapid regeneration of the natural vegetation on cleared areas. » Where practical, phased development and vegetation clearing should be applied so that cleared areas are not left unvegetated and vulnerable to erosion for extended periods of time.
	Indirect Impacts: » Further loss of wetland vegetation, and reduction in water quality in wetlands downstream. » Increased erosion risk during construction.	MEDIUM	LOW	
	Cumulative Impacts: » Eroded material may have significant impact on these systems through siltation of pools and changes in the chemistry and turbidity of the water.	MEDIUM	LOW	

Activity	Impact Summary	Significance (with mitigation)		Proposed Mitigation
		CVG PL	BTE PL	
				» Construction of gabions and other stabilization features on steep slopes to prevent erosion, if deemed necessary. » Reduced activity at the site after large rainfall events when the soils are wet. No driving off of hardened roads should occur immediately following large rainfall events until soils have dried out and the risk of bogging down has decreased.
Avifaunal Impacts				
» Construction of power line and access roads	***Direct impacts:*** » Displacement due to habitat transformation » Displacement due to disturbance	LOW	LOW	» A pre-construction walk through survey of the final power line route must be undertaken by a qualified ornithologist in order to identify bird sensitive areas where mitigation is required. » Minimise disturbance to vegetation as far as possible. » Restrict construction activities to development footprint areas (i.e. tower footprints and any new access roads). » All vehicles to adhere to low speed limits (40km/h max) on the site, to reduce disturbance to avifauna in the area. » New road construction must be kept to a minimum. » None possible
	Indirect impacts: » Some priority species may temporarily move away regardless of mitigation	LOW	LOW	
	Cumulative impacts: » The cumulative impact of development on grasslands across the country is extremely high. Relevant to this study, several authorized and proposed wind farms and their associated infrastructure could potentially be constructed in the landscape.	LOW	LOW	» Minimise disturbance to vegetation as far as possible. » Restrict construction activities to development footprint areas (i.e. tower footprints and any new access roads). » All vehicles to adhere to low speed limits (40km/h max) on the site, to reduce disturbance to avifauna in the area. » New road construction must be kept to a minimum.

Activity	Impact Summary	Significance (with mitigation)		Proposed Mitigation
		CVG PL	BTE PL	
	Any additional development that results in a loss of vegetation and therefore habitat will undoubtedly increase the cumulative impact.			
Visual Impacts				
» The potential visual impact of power line construction 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 power line	LOW	LOW	» Planning: 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 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 immediate construction site and existing access roads. » 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

Activity	Impact Summary	Significance (with mitigation)		Proposed Mitigation
		CVG PL	BTE PL	
				completion of construction works.
	Indirect impacts: » None	-	-	N/A
	Cumulative impacts: » Construction activities associated with several developments in the area at one time is likely to increase the potential cumulative visual impact within the region.	LOW	LOW	» Ensure that vegetation is not unnecessarily removed during the construction period. » Reduce the construction period as far as 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 immediate construction site and existing access roads. » 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.
Heritage Impacts				
Damage to features of historical importance during the construction of	***Direct:*** » The potential impact of the construction of power line foundations and service road	LOW	LOW	» Archaeological sensitive area marked by sites msa1 and emsa2 must be avoided. The area must be fenced-off and no construction activities may take place within at least 10 metres of the sites. Care must be taken that the sites are not disturbed during the

Activity	Impact Summary	Significance (with mitigation)		Proposed Mitigation
		CVG PL	BTE PL	
the power line and access roads.	on above and below ground pre-colonial archaeological and colonial period heritage sites/materials.			development. » 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 Albany Museum (Tel: 046 6222312) or to the Eastern Cape Provincial Heritage Resources Authority (Tel: 043 6422811), 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. » Construction managers/foremen should be informed before construction starts on the possible types of heritage sites/materials they may encounter and the procedures to follow when they find sites. The contractor's Environmental Officer (EO) may be trained to identify, follow the relevant procedure and report to the site manager if sites are found (see Appendix C of Phase 1 Archaeological Impact Assessment).
	Indirect Impacts: None identified	-	-	» N/A
	Cumulative Impacts: » The number of tower foundations will determine the impact on the buried materials (if any), but in general it will be negligible.	LOW	LOW	» None possible

Table 4: Impact Assessment for the proposed 132kV **Power Line Alternatives** during operation

Activity	Impact Summary	Significance (with mitigation)		Proposed Mitigation
		CVG PL	BTE PL	
Ecological Impacts				
» Operation of the power line and use of access roads	***Direct Impact:*** » Increased erosion risk during operation	HIGH	LOW	» Regular monitoring of the site (minimum of twice annually) to identify possible areas of erosion is recommended, particularly after large summer thunder storms have been experienced. » Any erosion problems observed should be rectified as soon as possible and monitored thereafter to ensure that they do not re-occur. » All bare areas, as a result of the development, should be revegetated with locally occurring species, to bind the soil and limit erosion potential. » Roads and other disturbed areas should be regularly monitored for erosion problems and problem areas should receive follow-up monitoring to assess the success of the remediation.
	Indirect Impacts: -	-	-	
	Cumulative Impacts: » Cumulative impacts within the surrounding environment due to the spread of erosion beyond the initial disturbed area and on steep slopes or vulnerable soil types would continue to spread into intact areas even with a good vegetation cover. Furthermore, the eroded material would enter the streams and wetlands within the surrounding area and may have significant impact on these systems through siltation of pools and changes in the chemistry and turbidity of the water.	HIGH	LOW	
» The disturbed and bare ground	***Direct impact:*** » Potential increased alien	LOW	LOW	» An alien plant monitoring programme should be developed and implemented for the development area.

Activity	Impact Summary	Significance (with mitigation)		Proposed Mitigation
		CVG PL	BTE PL	
that is likely to be present at the site after construction would leave the site vulnerable to alien plant invasion for some time if not managed.	plant invasion during construction and operation			» Regular monitoring for alien plants at the site should occur and could be conducted simultaneously with erosion monitoring. » When alien plants are detected, these should be controlled and cleared using the recommended control measures for each species to ensure that the problem is not exacerbated or does not re-occur. » Clearing methods should themselves aim to keep disturbance to a minimum. » No planting or importing any alien species to the site for landscaping, rehabilitation or any other purpose should be allowed.
	Indirect Impacts: **-**	NONE	NONE	N/A
	Cumulative Impacts: » Cumulative impacts within the surrounding environment due to the spread of alien invasive species beyond the initial disturbed area would lead to the replacement of natural indigenous vegetation.	LOW	LOW	» An alien plant monitoring programme should be developed and implemented for the development area. » Regular monitoring for alien plants at the site should occur and could be conducted simultaneously with erosion monitoring. » When alien plants are detected, these should be controlled and cleared using the recommended control measures for each species to ensure that the problem is not exacerbated or does not re-occur. » Clearing methods should themselves aim to keep disturbance to a minimum. » No planting or importing any alien species to the site for landscaping, rehabilitation or any other purpose should be allowed.
Avifaunal Impacts				

Activity	Impact Summary	Significance (with mitigation)		Proposed Mitigation
		CVG PL	BTE PL	
» Bird electrocutions and/or collisions, particularly priority species, with the proposed power line	***Direct impacts*** » Electrocution impact on the power line tower/pole structures » Bird mortality due to collision with the proposed power line.	LOW MEDIUM	LOW MEDIUM	» Install and maintain Eskom-approved bird diverters on all lines that occur within 500 m of any wetland, roost site or flyway so birds see them more readily and avoid contact. » Utilise Eskom-approved bird-friendly towers » Undertake regular monitoring of the power line to detect any areas where high impacts are experienced and recommend any additional mitigation which may be required to be implemented. » Avoid wetland areas as far as possible.
	Indirect impacts: » Decrease in avifauna species in the study area due to collision and electrocution.	LOW	LOW	
	Cumulative impacts: » Relevant to this study, several authorized and proposed wind farms and their associated infrastructure could potentially be constructed in the landscape. Any additional development that results in a loss of vegetation and therefore habitat will undoubtedly increase the cumulative impact. » The cumulative impacts of power lines on several Red List species through	LOW	LOW	

Activity	Impact Summary	Significance (with mitigation)		Proposed Mitigation
		CVG PL	BTE PL	
	electrocution are significant nationally. An extensive power line network features prominently both on the proposed sites and within the broader study area. » Any additional bird-unfriendly power lines will increase the electrocution risk to power line sensitive species (i.e. vultures, large eagles, storks and herons) that may be present the broader study area. Cape Vulture in particular cannot afford more mortalities as a result of electrocution on power lines, particularly in the Eastern Cape. No effort should be spared to ensure that the new power line is built bird friendly and results in no additional impact on birds in the area.			
Visual Impacts				
» Maintenance and operation of the power line	***Direct:*** » Visual impact of the proposed power line on the	LOW	LOW	Although the impacts of the proposed development on general landscape character are expected to take place during the operation phase, mitigation measures will need to be implemented

Activity	Impact Summary	Significance (with mitigation)		Proposed Mitigation
		CVG PL	BTE PL	
	visual quality of the landscape and sense of place of the region.			during the planning and decommissioning phases. Planning: » The use of the preferred alternative will keep the line at a lower level over most of the alignment. This will marginally reduce visibility. Decommissioning: » Remove infrastructure not required for the post-decommissioning use of the site. » Rehabilitate disturbed areas.
	Indirect: » None	-	-	N/A
	Cumulative Impacts: » The area within which the overhead power line is proposed is located within a larger area that is under development for wind energy projects. This will result in the introduction of wind turbines and ancillary structures that will include similar power lines as the current proposal over a broad area surrounding the proposed project. This development will result in	LOW	LOW	» Maintain the general appearance of the power line servitude as a whole.

Activity	Impact Summary	Significance (with mitigation)		Proposed Mitigation
		CVG PL	BTE PL	
	modification of the existing rural agricultural character of the area, introducing a significant industrial feeling over the affected area. The proposed project is unlikely to significantly add to either the extent or the intensity of this impact.			

Table 5: Impact Assessment for the proposed 132kV **Power Line Alternatives** during decommissioning and closure

Activity	Impact Summary	Significance (with mitigation)		Proposed Mitigation
		CVG PL	BTE PL	
Ecological Impacts				
Decommissioning of the power line	***Direct impacts:*** » Ecological Impacts. » Impacts associated with erosion and alien vegetation invasion. » Visual Impacts.	LOW	LOW	» Remove all alien plants in the project area. » Remove infrastructure not required for the post-decommissioning use of the servitude. » Rehabilitate all areas. » Monitor rehabilitated areas post-decommissioning and implement remedial actions. » Fauna encountered during decommission should be removed to safety by a suitably qualified person. » All vehicles to adhere to low speed limits (40km/h max) on the site, to reduce risk of faunal collisions as well as reduce dust. » Electrical cables and other power line components should be

Activity	Impact Summary	Significance (with mitigation)		Proposed Mitigation
		CVG PL	BTE PL	
				removed and no parts should be left behind.
	Indirect impacts: » Impacts associated with erosion and alien vegetation invasion.	LOW	LOW	» Establish an on-going monitoring programme to detect and quantify any aliens that may become established.
	Cumulative Impacts: » None	-	-	N/A

Table 6: Impact Assessment for the proposed **Substation Alternatives** during preconstruction and construction

Activity	Impact Summary	Significance (with mitigation)		Proposed Mitigation
		CVG SS	BTE SS	
Ecological Impacts				
» Vegetation clearing for substation. » Movement of construction vehicles.	***Direct impacts:*** » Potential impacts on vegetation and listed protected plant species.	LOW	LOW	» Preconstruction walk-through of the substation footprint for species of conservation concern that would be affected and that can be translocated as well as for the demarcation of sensitive rocky beds and outcroppings and to determine permitting requirements. » Since a large proportion of the identified conservation worthy species at the site are succulent species, the potential for successful translocation is high. Therefore, it is recommended that before construction commences individuals of listed species within the development footprint that would be affected should be counted and marked and translocated (if deemed necessary and according to relevant ratios, as specified by the ecologist conducting the pre-construction walk-through) to
	Indirect impacts: » Vegetation clearing would potentially lead to the loss of faunal species, habitats and ecosystems. » Soil compaction and erosion may impact downstream wetland habitats if a lot of silt enters the drainage	LOW	LOW	

Activity	Impact Summary	Significance (with mitigation)		Proposed Mitigation
		CVG SS	BTE SS	
	systems, and reduce the buffering capacities of the landscape during extreme weather events.			similar habitat outside the development footprint. Permits from the relevant provincial authorities, i.e. the Eastern Cape Department of Environmental Affairs and Nature Conservation, will be required to relocate listed plant species. » Any individuals of protected species affected by and observed within the substation development footprint during construction (i.e. Individuals that were missed during initial sweeps), should be translocated under the supervision of the ECO and/or Contractor's Environmental Officer (EO). » Preconstruction environmental induction for all construction staff on site to ensure that basic environmental principles are adhered to. This includes awareness as to no littering, appropriate handling of pollution and chemical spills, avoiding fire hazards, minimizing wildlife interactions, remaining within demarcated construction areas etc. » Demarcate all areas to be cleared with construction tape or similar material where practical. However caution should be exercised to avoid using material that might entangle fauna. » ECO and/or Contractor's EO to provide supervision and oversight of vegetation clearing activities and other activities which may cause damage to the environment, especially at the initiation of the project, when the majority of vegetation clearing is taking place. » Ensure that lay down areas, construction camps and other temporary use areas are located in areas of low sensitivity and are properly fenced or demarcated as appropriate and practically possible. » All vehicles to remain on demarcated roads and no unnecessary

Activity	Impact Summary	Significance (with mitigation)		Proposed Mitigation
		CVG SS	BTE SS	
				driving in the veld outside these areas should be allowed. » Regular dust suppression during construction, if deemed necessary, especially along access roads. » During the preconstruction walk-through of the substation development footprint all exposed bedrock areas and rockeries high in floral species diversity as well as protected species should be demarcated and these areas should be avoided. These high diversity rockeries and exposed bedrock are normally small in extent and the planning of service and access roads can be done in such a manner as to avoid these areas (cross areas deemed suitable as identified during pre-construction walk-through. Any protected species which will be impacted by the development (relocated, disturbed or destroyed) will require permits from the relevant provincial authorities. » Drainage line permanent road crossings should be specifically designed not to impede or disrupt the direction and flow of the water where practical. The requirements would also be determined by the Water authorisation processes. » No plants may be translocated or otherwise uprooted or disturbed for rehabilitation or other purpose without express permission from the ECO and or Contractor's EO. » No fuelwood collection on site. » No fires should be allowed on-site.
	Cumulative Impacts: » Cumulative impacts associated with vegetation clearance will result in	LOW	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
		CVG SS	BTE SS	
	disturbance of soils, increased soil erosion, reduced habitat for plant and animal species, spread of alien invasive species and a reduction of ecosystem services.			
» Construction activities such as the operation of heavy machinery and the presence of construction personnel at the site.	***Direct Impact:*** » Potential Faunal Impacts (e.g. road mortalities)	LOW	LOW	» Any fauna directly threatened by the construction activities should be removed to a safe location by a suitably qualified person. » Eskom-approved infrastructure for the substation should be implemented. » All personnel should undergo environmental induction with regards to fauna and in particular awareness about not harming or collecting species such as snakes, tortoises and owls which are often persecuted out of superstition. » All hazardous materials used during construction should be stored in the appropriate manner to prevent contamination of the site. Any accidental chemical, fuel and oil spills that occur at the site should be cleaned up in the appropriate manner as related to the nature of the spill. » All construction vehicles should adhere to a low speed limit (40km/h is recommended) to avoid collisions with susceptible species such as snakes and tortoises. » No litter, food or other foreign material should be left around the site and should be placed in demarcated and fenced rubbish and litter areas that are animal proof. » Regular dust monitoring to be done and mitigation measures
	Indirect Impacts: » Noise and dust pollution on terrestrial fauna at the site during construction.	LOW	LOW	
	Cumulative Impacts: » The construction of the infrastructure would contribute to cumulative disturbance and habitat loss for fauna, but the contribution would be very small and is not considered significant.	LOW	LOW	

Activity	Impact Summary	Significance (with mitigation)		Proposed Mitigation
		CVG SS	BTE SS	
				such as wetting of stockpiles and access roads should be done were deemed necessary.
» Construction of substation and access roads	***Direct Impact:*** » Increased loss of soil, loss of or disturbance to downstream indigenous wetland vegetation and habitats important for hydrophyllic faunal species and invertebrates, impairment of wetland function, change in channel morphology in downstream wetlands.	MEDIUM	LOW	» No stockpiling or storage of any material may be allowed within these drainage lines and ephemeral streams. » Permanent roads crossing drainage lines should be specifically designed not to impede or disrupt the direction and flow of the water where practically possible. Requirements would also be determined by the Water licensing processes. » Permanent roads crossing drainage lines should be placed in areas without extensive wetlands and preferably in rocky areas where the risk of disruption and erosion is low, where practically possible. All drainage line crossings should be inspected as part of the preconstruction activities to ensure that the optimal and acceptable locations have been chosen for river crossings, which would also form part of the water permitting processes. » Any erosion problems observed should be rectified immediately and monitored thereafter to ensure that they do not re-occur. » All bare areas, as a result of the development, should be revegetated with locally occurring species, to bind the soil and limit erosion potential. » Roads and other disturbed areas should be regularly monitored for erosion and problem areas should receive follow-up monitoring to assess the success of the remediation. » Silt traps should be used where there is a danger of topsoil or material stockpiles eroding and entering streams and other sensitive areas. » Topsoil should be removed and stored separately and should be
	Indirect Impacts: » Further loss of wetland vegetation, and reduction in water quality in wetlands downstream. » Increased erosion risk during construction.	MEDIUM	LOW	
	Cumulative Impacts: » Eroded material may have significant impact on these systems through siltation of pools and changes in the chemistry and turbidity of the water.	MEDIUM	LOW	

Activity	Impact Summary	Significance (with mitigation)		Proposed Mitigation
		CVG SS	BTE SS	
				reapplied where appropriate as soon as possible in order to encourage and facilitate rapid regeneration of the natural vegetation on cleared areas. » Where practical, phased development and vegetation clearing should be applied so that cleared areas are not left unvegetated and vulnerable to erosion for extended periods of time. » Construction of gabions and other stabilization features on steep slopes to prevent erosion, if deemed necessary. » Reduced activity at the site after large rainfall events when the soils are wet. No driving off of hardened roads should occur immediately following large rainfall events until soils have dried out and the risk of bogging down has decreased.
Avifaunal Impacts				
» Construction of substation	***Direct impacts*** » Displacement due to habitat transformation » Displacement due to disturbance	LOW	LOW	» The primary means of mitigating this impact is through the selection of the optimal substation site in this area. This will ensure that sensitive habitats (e.g. grassland vegetation and water bodies) are avoided as far as possible. » The recommendations of the ecological and botanical specialist studies must be strictly implemented, especially as far as limitation of the construction footprint and rehabilitation of disturbed areas is concerned. » Maximum use should be made of existing access roads and the construction of new roads should be kept to a minimum. » Construction activity should be restricted to the immediate footprint of the infrastructure. Access to the remainder of the site should be strictly controlled to prevent unnecessary disturbance of Red List species.

Activity	Impact Summary	Significance (with mitigation)		Proposed Mitigation
		CVG SS	BTE SS	
				» Measures to control noise should be applied according to current best practice in the industry. » Construction activities may need to be scheduled to avoid breeding periods.
	Indirect impacts: » Some priority species may temporarily move away regardless of mitigation	LOW	LOW	None possible
	Cumulative impacts: » The cumulative impact of development on grasslands across the country is extremely high. Relevant to this study, several authorized and proposed wind farms and their associated infrastructure could potentially be constructed in the landscape. Any additional development that results in a loss of vegetation and therefore habitat will undoubtedly increase the cumulative impact.	LOW	LOW	» Minimise disturbance to vegetation as far as possible. » Restrict construction activities to development footprint areas (i.e. tower footprints and any new access roads). » All vehicles to adhere to low speed limits (40km/h max) on the site, to reduce disturbance to avifauna in the area. » New road construction must be kept to a minimum.
Visual Impacts				
» The potential visual impact of	***Direct impacts:*** » Potential visual impact of	LOW	LOW	» Planning: Retain / re-establish and maintain natural vegetation in all areas outside of the development footprint/servitude.

Activity	Impact Summary	Significance (with mitigation)		Proposed Mitigation
		CVG SS	BTE SS	
the substation construction on observers in close proximity to the proposed project	construction on sensitive visual receptors in close proximity to the proposed substation			» Ensure that vegetation is not unnecessarily removed during the construction period. » Reduce the construction period as far as 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 immediate construction site and existing access roads. » 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.
	Indirect impacts: » None	-	-	N/A
	Cumulative impacts: Construction activities associated with several developments in the area at one time is likely to increase the potential cumulative visual impact within the region.	LOW	LOW	» Ensure that vegetation is not unnecessarily removed during the construction period. » Reduce the construction period as far as possible through careful logistical planning and productive implementation of resources. » Plan the placement of lay-down areas and temporary

Activity	Impact Summary	Significance (with mitigation)		Proposed Mitigation
		CVG SS	BTE SS	
				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 immediate construction site and existing access roads. » 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.
Heritage Impacts				
Damage to features of historical importance during the construction of the substation	***Direct:*** » The potential impact of the construction of the substation on above and below ground pre-colonial archaeological and colonial period heritage sites/materials.	LOW	LOW	» 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 Albany Museum (Tel: 046 6222312) or to the Eastern Cape Provincial Heritage Resources Authority (Tel: 043 6422811), 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. » Construction managers/foremen should be informed before construction starts on the possible types of heritage sites/materials they may encounter and the procedures to follow when they find sites. The contractor's Environmental

Activity	Impact Summary	Significance (with mitigation)		Proposed Mitigation
		CVG SS	BTE SS	
				Officer (EO) may be trained to identify, follow the relevant procedure and report to the site manager if sites are found (see Appendix C of Phase 1 Archaeological Impact Assessment).
	Indirect Impacts: None identified	-	-	N/A
	Cumulative Impacts: None identified	LOW	LOW	None possible

Table 7: Impact Assessment for the proposed **Substation Alternatives** during operation

Activity	Impact Summary	Significance (with mitigation)		Proposed Mitigation
		CVG SS	BTE SS	
Ecological Impacts				
» Operation of the substation and use of access roads	***Direct Impact:*** » Increased erosion risk during operation	HIGH	LOW	» Regular monitoring of the site (minimum of twice annually) to identify possible areas of erosion is recommended, particularly after large summer thunder storms have been experienced. » Any erosion problems observed should be rectified as soon as possible and monitored thereafter to ensure that they do not re-occur. » All bare areas, as a result of the development, should be revegetated with locally occurring species, to bind the soil and limit erosion potential. » Roads and other disturbed areas should be regularly monitored for erosion problems and problem areas should receive follow-up monitoring to assess the success of the remediation.
	Indirect Impacts: -	-	-	
	Cumulative Impacts: » Cumulative impacts within the surrounding environment due to the spread of erosion beyond the initial disturbed area and on steep slopes or vulnerable soil types would continue to spread into intact	HIGH	LOW	

Activity	Impact Summary	Significance (with mitigation)		Proposed Mitigation
		CVG SS	BTE SS	
	areas even with a good vegetation cover. Furthermore, the eroded material would enter the streams and wetlands within the surrounding area and may have significant impact on these systems through siltation of pools and changes in the chemistry and turbidity of the water.			
» The disturbed and bare ground that is likely to be present at the site after construction would leave the site vulnerable to alien plant invasion for some time if not managed.	***Direct impact:*** » Potential increased alien plant invasion during operation	LOW	LOW	» An alien plant monitoring programme should be developed and implemented for the development area. » Regular monitoring for alien plants at the site should occur and could be conducted simultaneously with erosion monitoring. » When alien plants are detected, these should be controlled and cleared using the recommended control measures for each species to ensure that the problem is not exacerbated or does not re-occur. » Clearing methods should themselves aim to keep disturbance to a minimum. » No planting or importing any alien species to the site for landscaping, rehabilitation or any other purpose should be allowed.
	Indirect Impacts: -	NONE	NONE	
	Cumulative Impacts: » Cumulative impacts within the surrounding environment due to the spread of alien invasive species beyond the initial disturbed area would lead to the replacement of natural indigenous vegetation.	LOW	LOW	
Avifaunal Impacts				
» Operation of	***Direct Impacts:***	LOW	LOW	» Substation hardware is often too complex for blanket, pro-

Activity	Impact Summary	Significance (with mitigation)		Proposed Mitigation
		CVG SS	BTE SS	
substation	» Electrocution impact within the proposed onsite substation			active mitigation. It is rather recommended that if on-going impacts are recorded once operational, site specific mitigation be applied reactively. This is an acceptable approach since Red List bird species are unlikely to frequent the substation and be electrocuted.
	Indirect impacts: » Some priority species may temporarily move away regardless of mitigation	LOW	LOW	None possible
	Cumulative impacts: » The cumulative impact of development on grasslands across the country is extremely high. Relevant to this study, several authorized and proposed wind farms and their associated infrastructure could potentially be constructed in the landscape. Any additional development that results in a loss of vegetation and therefore habitat will undoubtedly increase the cumulative impact.	LOW	LOW	» Minimise disturbance to vegetation as far as possible. » All vehicles to adhere to low speed limits (30km/h max) on the site, to reduce disturbance to avifauna in the area.
Visual Impacts				
» Maintenance and	***Direct Impacts:***	LOW	LOW	Although the impacts of the proposed development on general

Activity	Impact Summary	Significance (with mitigation)		Proposed Mitigation
		CVG SS	BTE SS	
operation of the substation	» Visual impact of the proposed substation on the visual quality of the landscape and sense of place of the region.			landscape character are expected to take place during the operation phase, mitigation measures will need to be implemented during the decommissioning phase to ensure no residual impacts. Decommissioning: » Remove infrastructure not required for the post-decommissioning use of the site. » Rehabilitate disturbed areas.
	Indirect Impacts: » None	-	-	
	Cumulative Impacts: » The proposed project is unlikely to significantly add to either the extent or the intensity of this impact.	LOW	LOW	

Table 8: Impact Assessment for the proposed **Substation Alternatives** during decommissioning and closure

Activity	Impact Summary	Significance (with mitigation)		Proposed Mitigation
		CVG SS	BTE SS	
Ecological Impacts				
Decommissioning of the substation	***Direct impacts:*** » Ecological Impacts. » Impacts associated with erosion and alien vegetation invasion. » Visual Impacts.	LOW	LOW	» Remove all alien plants in the project area. » Remove infrastructure not required for the post-decommissioning use of the substation. » Rehabilitate all areas. » Monitor rehabilitated areas post-decommissioning and implement remedial actions. » Any fauna encountered during decommission should be removed to safety by a suitably qualified person.

Activity	Impact Summary	Significance (with mitigation)		Proposed Mitigation
		CVG SS	BTE SS	
				» All vehicles to adhere to low speed limits (40km/h max) on the site, to reduce risk of faunal collisions as well as reduce dust. » Electrical cables and other power line components should be removed and no parts should be left behind.
	Indirect impacts: » Impacts associated with erosion and alien vegetation invasion.	LOW	LOW	» Establish an on-going monitoring programme to detect and quantify any aliens that may become established.
	Cumulative Impacts: » N/A	-	-	N/A

1.1 The No-Go Option

This is the option of not constructing the proposed power line and substation. This option will result in limited or no impacts occurring on the environment. However, this will result in the situation where the Golden Valley Wind Energy Facility Project II cannot be connected to the electricity grid. This is an undesirable option for the project as it will pose negative impacts on the Golden Valley Wind Energy Facility Project II. In addition, it would result in a situation where the electricity generated from the authorised Golden Valley Wind Energy Facility Project II 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 associated with the implementation of the project. 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**.

1.2 Comparative Assessment of the Alternatives

From the Basic Assessment studies undertaken, the following is concluded regarding the alternatives considered:

1.2.1. Substation site Alternatives

Ecology

Based on the impact assessment, the differences between the proposed CVG and BTE are non-substantive (i.e. they are both of Low significance with mitigation). The ecology specialist, however, recommends the proposed BTE on-site substation location as the preferred option. This is due to the proposed CVG on-site substation location having steep slopes which will increase runoff and therefore erosion potential. However, with the implementation of appropriate mitigation measures, both alternatives are considered acceptable.

Avifauna

From an avifaunal perspective the differences between the proposed CVG and BTE alternatives are non-substantive. Therefore the technically preferred CVG on-site substation location is supported.

Heritage

From a heritage perspective the differences between the proposed CVG and BTE alternatives are non-substantive. Therefore the technically preferred CVG on-site substation location is supported.

Visual

From a visual perspective the differences between the proposed CVG and BTE alternatives are non-substantive. Therefore the technically preferred CVG on-site substation location is supported.

1.2.2. Power line corridor alternatives

Ecology

The differences between the proposed CVG and BTE alternatives are non-substantive. However, the ecology specialist recommends the proposed BTE power line corridor as the preferred option, as it is coupled with the proposed BTE on-site substation location. However, with the implementation of appropriate mitigation measures, both alternatives are considered acceptable.

Avifauna

From an avifaunal perspective, the differences between proposed CVG and BTE alternatives are non-substantive. Therefore the technically preferred CVG power line corridor is supported.

Heritage

From a heritage perspective, the differences between proposed CVG and BTE alternatives are non-substantive. Therefore the technically preferred CVG power line corridor is supported.

Visual

From a visual perspective, the differences between proposed CVG and BTE alternatives are non-substantive. Therefore the technically preferred CVG power line corridor is supported.

Table 9 provides a summary of the comparative assessment of the alternatives based on the Specialist studies carried out.

Table 9: Comparative Assessment of Alternatives

Specialist Study	CVG PL	BTE PL	CVG SS	BTE PL
Ecology	Acceptable	Preferred	Acceptable	Preferred
Avifauna	Preferred	Acceptable	Preferred	Acceptable
Archaeological	Preferred	Acceptable	Preferred	Acceptable
Visual	Preferred	Acceptable	Preferred	Acceptable

Overall conclusion

From the specialist studies undertaken, the technically preferred option (CVG) for the proposed substation and power line is considered to be acceptable from an environmental perspective. The proposed power line corridor and substation locations are also considered technically and financially feasible.

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 and substation.

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 132kV power line and on-site substation which will connect the Golden Valley Wind Energy Facility Project II site to the national electricity grid via the existing Eskom Poseidon-Albany 132kV power line. In doing so, it 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.

Based on the information contained in the Impact Assessment above it is evident that there are no High Negative Impacts post mitigation which should warrant the project from not proceeding or should warrant further specialist investigation. Impacts are expected to be similar with both alternatives considered. As detailed above, The CVG substation and power line alternative is nominated as the preferred alternative for implementation.

Ecology: Overall, the impacts of the proposed 132kv power line and on-site substation will be **low negative** after mitigation, mainly due to a loss of small areas of vegetation, and habitat loss for fauna. Given the limited footprint of the on-site substation and power line, and the low abundance of fauna and flora of concern that would be impacted by the development, the construction and operation of the proposed 132kV power line and substation to connect to the existing Poseidon-Albany 132kV power line is not expected to result in any impact of high significance. As a result, **the project is considered acceptable from an ecological perspective.**

Avifauna: The proposed development entails an optimised power line route within a broader corridor investigated, and a small substation in an area already authorised for the Golden Valley WEF Project II. As such, the risks posed to avifauna by the proposed development are considered to be limited and can be successfully mitigated to acceptable levels. The technically preferred option CVG for the proposed substation and power line corridor **are considered acceptable from an avifaunal perspective**.

Heritage: The archaeological visibility was good in most areas, but due to little sheet erosion it was difficult to locate archaeological sites/materials. Earlier and Middle Stone Age concentrations of stone tools recorded on the site were observed at areas where surface soil erosion occurred. The stone tools were in secondary context and not associated with other archaeological remains. These sites are of low significance, but at least one site/area along the CVG route needs further mitigation prior to destruction. In general the proposed area is of **low archaeological and historical significance** and the construction activities will have little impact on possible archaeological sites/material, but will contribute to a larger negative cumulative visual impact on the cultural landscape.

The survey indicated that both alternative routes are of low heritage sensitivity and any of the two routes can be used. However, it would appear that BTE power line corridor is slightly less sensitive corridor because no heritage sites were observed in the servitude. On the other hand two archaeological sites were observed in this corridor. The sites are of **medium to low significance** and can be avoided by re-routing the service/construction road within the broader corridor assessed (see recommendations).

From a heritage perspective, if the CVG alternative is selected as the preferred power line corridor, then the service road must be constructed around the archaeological sensitive area which include sites msa1 and emsa2. The tower positions must also be constructed at a safe distance from the sites. The area must be fenced-off and no construction activities may take place within at least 10 metres from the sites and care must be taken that the sites are not disturbed during the development.

If mitigation measures are implemented, the proposed construction of the technically preferred option for the power line corridor and the proposed substation (i.e. CVG) **is considered acceptable from a heritage perspective**.

Visual Impacts: The assessment found that given the extent of wind energy facilities that are currently planned or under development in the area surrounding the proposed project, the likely change in landscape character due to the project is likely to be negligible. The assessment indicates that largely due to the nature of the project and distance between the facility and sensitive receivers, impacts are likely to be low. It is also possible that given the likely low level of impact and the extent of wind energy development underway that sensitive receptors may not see the project as having a negative impact. **The preferred alignment and substation site was shown to be slightly less visible to sensitive receptors than the alternative alignment and substation**. Therefore, from a visual perspective, the technically preferred option for the power line corridor and the proposed substation (i.e. CVG) **is considered to be acceptable**.

Cumulative Impacts: Cumulative impacts from the preferred option for the power line and substation will result from impacts arising from multiple power lines being constructed in the area (from other projects). As the siting for the substation infrastructure for both, the proposed CVG and BTE, options fall within the same footprint as the authorised Golden Valley WEF Project II, the contribution of this infrastructure to the cumulative impacts in the area is considered to be **low**. The majority of the route along which the proposed power line options runs also falls within the Golden Valley WEF Project II site therefore 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 technically preferred option (CVG) for the proposed substation and power line is considered to be acceptable from an environmental perspective. The proposed power line corridor and substation locations are also considered technically and financially feasible.

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 and substation.

Impacts are expected to be **medium - low** after the implementation of the mitigation and monitoring measures which would allow for the minimisation and management of potential environmental impacts associated with the proposed development. These have been incorporated into the EMPr for the project which will be further developed during the detailed planning and design phase of the project. It is therefore recommended that the proposed development can 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.

It is the conclusion of the Environmental Assessment Practitioner that the establishment of the power line and substation is considered acceptable from an environmental perspective and the technically preferred alternative, **CVG**, should be authorised, provided that the recommended mitigation measures are implemented.

No-go alternative (compulsory)

The 'Do nothing' alterative is the option of not constructing the 132kV power line and substation. This option will result in no impacts occurring on the biophysical environment (i.e. biodiversity, soils), and will result in no visual impact. However, this will result in the situation where the authorised Golden Valley Wind Energy Facility Project II cannot be connected to the electricity grid.

The 'Do nothing' alterative for the power line and substation 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 power line and substation 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 activities. The construction 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 this 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. It is considered feasible that this ECO could be the same person as that appointed for the Golden Valley WEF Project II.
» The preferred power line corridor and substation alternative is CVG.
» There are a number of drainage lines along the power line corridor and the power line towers and any new access roads should be positioned to minimise impact on the riparian areas.
» A walkthrough survey should be undertaken prior construction by a qualified ecologist, avifaunal specialist and heritage specialist in order to ensure that the proposed tower positions and access roads are appropriately located and to make recommendations regarding any specific mitigation which is required to minimise impacts.

- Creation of new access roads should be minimised as far as 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 power line should be marked with flappers on the high collision risk sections of the power line and introduce deterrents on pylons. The best available (at the time of construction) Eskom approved (or similar) anti bird collision line marking device should be used.
- Eskom-approved bird friendly towers should be implemented for the power line.
- Care must be taken with the topsoil during and after construction on the site. If required, measures to reduce erosion to be employed until a healthy plant cover is again established.
- Rehabilitate construction sites by establishing with indigenous plant species.
- Erosion control measures must be utilised during construction, operations, decommissioning and rehabilitation of the power line and substation.
- 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 developer 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 and substation 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.
- The power line should be marked with flappers on the high collision risk sections of the power lines and introduce deterrents on pylons. The best available (at the time of construction) Eskom approved (or similar) anti bird collision line marking device should be used. These must be maintained during the operation phase.

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, expertise and EAPs Affirmation

Appendix I: Specialist's declaration of interest

Appendix J: Additional Information