

ENVIRONMENTAL IMPACT ASSESSMENT PROCESS
FINAL BASIC ASSESSMENT REPORT

PROPOSED CONSTRUCTION OF AN ON-SITE SUBSTATION
FOR THE AUTHORISED IZIDULI EMOYENI WIND ENERGY
FACILITY, EASTERN CAPE PROVINCE

DEA REF No: 14/12/16/3/3/1/1353

May 2015

Prepared for:

Emoyeni Wind Farm Renewable Energy (Pty) Ltd
Unit 3, Demar Square
45 Bell Crescent Road
Westlake
7945

Prepared by:

Savannah Environmental Pty Ltd

UNIT 10, BLOCK 2
5 WOODLANDS DRIVE OFFICE PARK,
CORNER WOODLANDS DRIVE & WESTERN
SERVICE ROAD, WOODMEAD, GAUTENG
PO BOX 148, SUNNINGHIL, 2157
TEL: +27 (0)11656 3237
FAX: +27 (0)86 684 0547
E-MAIL: INFO@SAVANNAHSA.COM
WWW.SAVANNAHSA.COM





environmental affairs

Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

(For official use only)

File Reference Number:

14/12/16/3/3/1/1353

Application Number:

Date Received:

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

Kindly note that:

1. This **basic assessment report** is a standard report that may be required by a competent authority in terms of the EIA Regulations, 2010 and is meant to streamline applications. Please make sure that it is the report used by the particular competent authority for the activity that is being applied for.
2. This report format is current as of **1 August 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 in the electronic copy of the report submitted to the competent authority.

PROJECT DETAILS

Title:	:	Environmental Basic Assessment Process Final Basic Assessment Report for the construction of an on-site substation for the authorised Iziduli Emoyeni Wind Energy Facility, Eastern Cape Province
Authors:	:	Savannah Environmental (Pty) Ltd Steven Ingle Sheila Muniongo Karen Jodas
Sub-consultants:	:	Scherman Colloty & Associates Avisense Consulting Eastern Cape Heritage Consultants
Applicant:	:	Emoyeni Wind Farm Renewable Energy (Pty) Ltd
Report Status:	:	Final Basic Assessment Report for submission to DEA and I&APs
Submission date	:	May 2015

When used as a reference this report should be cited as: Savannah Environmental (Pty) Ltd (2015) Final Basic Assessment Report Construction of an on-site substation for the authorised Iziduli Emoyeni Wind Energy Facility, Eastern Cape Province.

COPYRIGHT RESERVED

This technical report has been produced for Emoyeni Wind Farm Renewable Energy (Pty) Ltd. The intellectual property contained in this report remains vested in Savannah Environmental (Pty) Ltd and Emoyeni Wind Farm Renewable Energy (Pty) Ltd. No part of the report may be reproduced in any manner without written permission from Emoyeni Wind Farm Renewable Energy (Pty) Ltd or Savannah Environmental (Pty) Ltd.

TABLE OF CONTENTS

	PAGE
PROJECT DETAILS	i
TABLE OF CONTENTS	i
APPENDICES	iii
REVIEW OF THE BASIC ASSESSMENT REPORT	4
1.1 SUMMARY AND OVERVIEW OF THE PROPOSED PROJECT	1
1.2 REQUIREMENT FOR AN ENVIRONMENTAL IMPACT ASSESSMENT PROCESS	3
1.3 DETAILS OF ENVIRONMENTAL ASSESSMENT PRACTITIONER AND EXPERTISE TO CONDUCT THE BASIC ASSESSMENT PROCESS	3
SECTION A: ACTIVITY INFORMATION	5
1. PROJECT DESCRIPTION	5
Describe the project associated with the listed activities applied for	5
Provide a detailed description of the listed activities associated with the project as applied for	9
2. FEASIBLE AND REASONABLE ALTERNATIVES	12
a) Site alternatives	12
b) Layout alternatives	14
c) Technology alternatives	14
d) Other alternatives (e.g. scheduling, demand, input, scale and design alternatives) ...	14
e) No-go alternative	15
3. PHYSICAL SIZE OF THE ACTIVITY	15
a) Indicate the physical size of the preferred activity/technology as well as alternative activities/technologies (footprints):	15
b) Indicate the size of the alternative sites or servitudes (within which the above footprints will occur):	16
4. SITE ACCESS	16
5. LOCALITY MAP	17
6. LAYOUT/ROUTE PLAN	18
7. SENSITIVITY MAP	18
8. SITE PHOTOGRAPHS	19
9. FACILITY ILLUSTRATION	19
10. ACTIVITY MOTIVATION	19
11. APPLICABLE LEGISLATION, POLICIES AND/OR GUIDELINES	26
12. WASTE, EFFLUENT, EMISSION AND NOISE MANAGEMENT	37
a) Solid waste management	37
b) Liquid effluent	38
c) Emissions into the atmosphere	39
d) Waste permit	39
e) Generation of noise	39
13. WATER USE	40
14. ENERGY EFFICIENCY	40
SECTION B: SITE/AREA/PROPERTY DESCRIPTION	41
1. GRADIENT OF THE SITE	42
2. LOCATION IN LANDSCAPE	42
3. GROUNDWATER, SOIL AND GEOLOGICAL STABILITY OF THE SITE	43
4. GROUND COVER	43
5. SURFACE WATER	44
6. LAND USE CHARACTER OF SURROUNDING AREA	44
7. CULTURAL/HISTORICAL FEATURES	46
8. SOCIO-ECONOMIC CHARACTER	47
a) Local Municipality	47
b) Socio-economic value of the activity	47
9. BIODIVERSITY	48
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)	49
b) Indicate and describe the habitat condition on site	49
c) Complete the table to indicate:	50

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) 50

SECTION C: PUBLIC PARTICIPATION 52

1. ADVERTISEMENT AND NOTICES 52

2. DETERMINATION OF APPROPRIATE MEASURES 52

3. ISSUES RAISED BY INTERESTED AND AFFECTED PARTIES 53

4. COMMENTS AND RESPONSE REPORT 53

5. AUTHORITY PARTICIPATION 53

6. CONSULTATION WITH OTHER STAKEHOLDERS 54

SECTION D: IMPACT ASSESSMENT 55

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 55

2. ENVIRONMENTAL IMPACT STATEMENT 64

SECTION E: RECOMMENDATION OF PRACTITIONER 66

SECTION F: APPENDICES 69

APPENDICES

Appendix A: Site Plan(s)

Appendix B: Photographic Record

Appendix C: Facility Illustration(s)

Appendix D: Specialist Reports

» *Appendix D1: Ecology Study*

» *Appendix D2: Heritage Study*

» *Appendix D3: Avifaunal Study*

Appendix E: Record of Public Involvement Process

» *Appendix E1: Site notices and advertisements*

» *Appendix E2: Key stakeholders correspondence*

» *Appendix E3: Comments and responses report*

» *Appendix E4: Notification to Authorities and Organs of State*

» *Appendix E5: Database*

» *Appendix E6: Minutes of meetings*

» *Appendix E7: Minutes of meetings*

Appendix F: Impact Assessment

Appendix G: Environmental Management Programme (EMPr)

Appendix H: Details of EAP and expertise & CV

Appendix I: Specialist's declaration of interest

REVIEW OF THE BASIC ASSESSMENT REPORT

The Basic Assessment Report (BAR) was prepared by Savannah Environmental in order to assess the potential environmental impacts associated with the proposed Izuduli on-site substation. The report was made available for public review from 06 February 2015 to 09 March 2015 at the following places:

- » Bedford Library
- » www.savannahSA.com

The Final Basic Assessment Report is available for review and electronic copies may be requested from Savannah offices or downloads can be done from the Savannah website and comments should be sent directly to the DEA. Relevant contact details are as follows:

National DEA Lerato Mokoena Tel: 012 399 9418 Email: LMokoena@environment.gov.za Post: Private Bag X 447, Pretoria, 0001	Savannah Environmental(EAP): Gabriele Wood Tel: 011 656 3237 Fax: 086 699 5796 Email: gabriele@savannahsa.com Post: P O Box 148 Sunninghill 2157
---	---

1.1 SUMMARY AND OVERVIEW OF THE PROPOSED PROJECT

Windlab Developments South Africa Pty Ltd (Windlab) received an Environmental Authorisation for the proposed Iziduli Emoyeni Wind Energy Facility (previously known as Amakhala Emoyeni Phase 4) on 28 August 2012 from the National Department of Environmental Affairs (DEA Ref: 12/12/20/1754/4).

The proposed Wind Energy Facility (Wind Farm Facility) was previously part of the greater project concept known as the Amakhala Emoyeni Wind Energy Facility. The Wind Farm Facility was split into four phases in order to align with the Department of Energy's (DOE) Renewable Energy Independent Power Producer Procurement Programme (REIPPPP) requirements restricting a Wind Farm Facility capacity size to 140MW (contracted capacity).

The fourth phase of the greater Amakhala Emoyeni Wind Farm Facility (known as the Iziduli Emoyeni Wind Farm Facility) requires its own grid connection infrastructure i.e. a 33/132kV on-site substation and a grid connection power line. Emoyeni Wind Farm Renewable Energy (Pty) Ltd, the Special Purpose Vehicle (SPV) set up by Windlab for the Iziduli Emoyeni Wind Farm Facility and the applicant of this Basic Assessment, is now proposing the establishment of an on-site substation (with a footprint of up to 200m by 250m) in order to connect the authorised Iziduli Emoyeni Wind Farm Facility to the National Grid (the Project). The proposed on-site facility substation is located on the Remainder of the Farm Brakkefonteyn 218 within the authorised Iziduli Emoyeni Wind Farm Facility.

Power line alternatives are being considered to connect the proposed Iziduli on-site substation to the existing grid infrastructure as Eskom is not yet able to confirm which connection option (and associated power line route) will be utilised. These power line routes are being assessed under **a separate application for Environmental Authorisation and Basic Assessment process (DEA Ref No 14/12/16/3/3/1/1354)**.

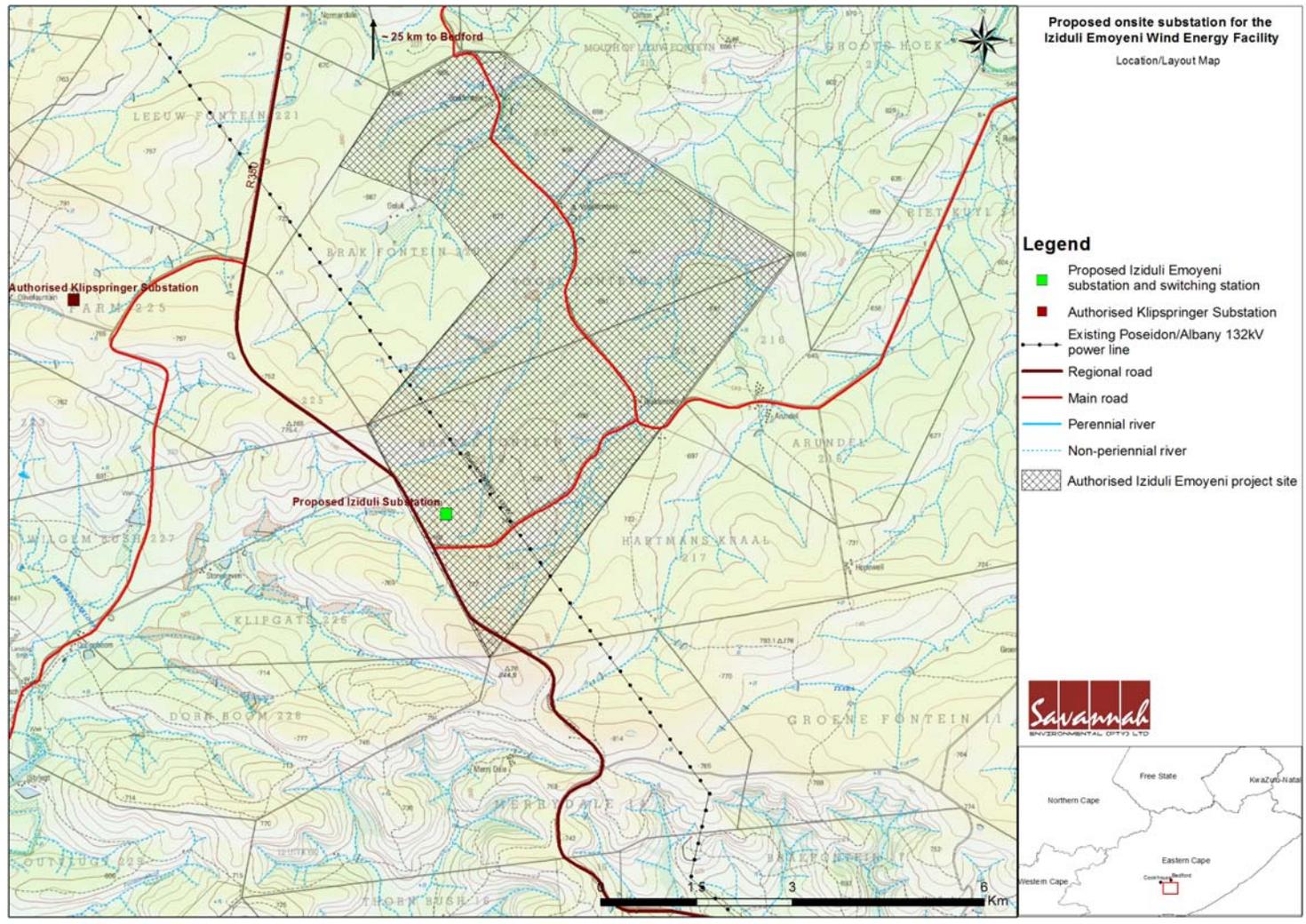


Figure 1: Location of the proposed Iziduli on-site Substation within the authorised Iziduli Emoyeni Wind Energy Facility project site on Remainder of the Farm Brakkefonteyn 218 (32°56'23.66"S - 26° 7'42.89"E)

1.2 REQUIREMENT FOR AN ENVIRONMENTAL IMPACT ASSESSMENT PROCESS

In terms of the EIA Regulations published in terms of Section 24(5) of the National Environmental Management Act (NEMA, Act No. 107 of 1998), authorisation for the on-site substation is required from the National Department of Environmental Affairs (DEA) as the competent authority, with the Eastern Cape Department of Economic Development & Environmental Affairs (DEDEA) as the commenting authority. In terms of sections 24 and 24D of NEMA, as read with the EIA Regulations of GN R543 - GN R546 (as amended), a Basic Assessment process is required to be undertaken for the proposed Project. An application for authorisation has been accepted by DEA for the proposed Project under application reference number 14/12/16/3/3/1/1353.

An environmental impact assessment is an effective planning and decision-making tool for the applicant as it provides the opportunity for the applicant to be fore-warned of potential environmental issues and assess if potential environmental impacts need to be avoided, minimised or mitigated to acceptable levels. The Basic Assessment process includes certain feasibility studies for a proposed project and will inform the final design process in order to ensure that environmentally sensitive areas are avoided to an acceptable level as confirmed by the Environmental Assessment Practitioner (EAP). Comprehensive, independent environmental studies elaborated by specialists are required in accordance with the EIA Regulations to inform the EAP of its comprehensive recommendation and provide the competent authority with sufficient information in order to make an informed decision.

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

Savannah Environmental (Pty) Ltd (Savannah Environmental) was contracted by Emoyeni Wind Farm Renewable Energy (Pty) Ltd as the independent environmental consultant, the Environmental Assessment Practitioner, to undertake the Basic Assessment process for the proposed Project. Neither Savannah Environmental, nor any of its specialist sub-consultants on this project are subsidiaries of, or are affiliated to Emoyeni Wind Farm Renewable Energy (Pty) Ltd. Furthermore, Savannah Environmental does not have any interests in secondary developments that may arise out of the authorisation of the proposed project.

Savannah Environmental is a specialist environmental consultancy which provides a holistic environmental management service, including environmental assessment and planning to ensure compliance with relevant environmental legislation. 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, specifically from renewable sources.

The following members of Savannah Environmental are responsible for this Final Basic Assessment report are:

- » Steven Ingle, the principle author of this report, holds a Bachelors degree in Environmental Management and has 8 years of experience in environmental management and has undertaken numerous EIAs for a number of proposed large-scale infrastructure project and renewable energy facilities across South Africa.
- » Karen Jodas - the principle Environmental Assessment Practitioner (EAP) for this project, is a registered Professional Natural Scientist and holds a Master of Science degree. She has 18 years of experience consulting in the environmental field. Her key focus is on strategic environmental assessment and advice; management and co-ordination of environmental projects, which includes integration of environmental studies and environmental processes into larger engineering-based projects and ensuring compliance to legislation and guidelines; compliance reporting; the identification of environmental management solutions and mitigation/risk minimising measures; and strategy and guideline development. She is currently responsible for the project management of EIAs for several renewable energy projects across the country.
- » Sheila Muniongo - the co-author of this report holds an Honours Bachelor degree in Environmental Management and 4 years of experience in the environmental field. Her key focus is on environmental impact assessments, public participation, environmental management programmes, and mapping through ArcGIS for variety of environmental projects. She is currently involved in several EIAs for renewable energy projects EIAs across the country.

In order to adequately identify and assess potential environmental impacts, several specialists have been appointed to conduct specialist studies, as required:

Specialist Studies Undertaken	Specialists
Ecological impact assessment	Scherman Colloty & Associates
Avifaunal impact assessment	Avisense Consulting
Heritage impact assessment	Eastern Cape Heritage Consultants

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

SECTION A: ACTIVITY INFORMATION

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 the specialist appointed and attach in **Appendix I**.

1. PROJECT DESCRIPTION

Describe the project associated with the listed activities applied for

Windlab received an Environmental Authorisation for the proposed Iziduli Emoyeni Wind Farm Facility (previously known as Amakhala Emoyeni Wind Farm Facility Phase 4) on 28 August 2012 from the National Department of Environmental Affairs (DEA Ref: 12/12/20/1754/4).

The Wind Farm Facility was previously part of the greater project concept known as the Amakhala Emoyeni Wind Farm Facility. This Wind Farm Facility was split into four phases in order to align with the DOE's REIPPPP requirements restricting a Wind Farm Facility capacity size to 140MW (contracted capacity).

The fourth phase of the greater Amakhala Emoyeni Wind Farm Facility (Iziduli Emoyeni Wind Farm Facility) requires its own grid connection infrastructure i.e. a 33/132kV onsite substation and a power line. Emoyeni Wind Farm Renewable Energy (Pty) Ltd, the Special Purpose Vehicle (SPV) set up by Windlab for the Iziduli Emoyeni Wind Farm Facility and applicant of this Basic Assessment, is now proposing the establishment of an on-site substation **(with a footprint of up to 200m X 250m; 50000m² or 5 ha)** in order to connect the authorised Iziduli Emoyeni Wind Farm Facility to the National Grid (the Project). The proposed on-site substation is located on the Remainder of the Farm Brakkefonteyn 218 within the authorised Iziduli Emoyeni Wind Energy Facility.

Four power line alternatives are being considered to connect the on-site substation to the existing grid infrastructure as Eskom is not yet able to confirm which connection option (and associated power line route) will be utilised. These power line routes are being assessed under **a separate application for Environmental Authorisation and Basic Assessment process**

The proposed Iziduli Emoyeni Wind Farm Facility is planned to be bid in terms of the DoE's REIPPPP in 2015, and the substation is required to be authorised to achieve bid compliance.

Location of the preferred on-site substation project site:

The proposed on-site substation is situated in the southern-most extent of the authorised Iziduli Emoyeni Wind Farm Facility site, west of the existing Poseidon–Albany 132kV power line which traverses this section of the Wind Farm Facility site. The Project site is situated close (approximately 400 metres north) to the intersection of the R350 main road and the gravel road to Adelaide. This location within the authorised Wind Farm Facility project site presents optimal grid connection, regardless of which one of the four proposed grid connection (power line) alternatives is realised:

- » Alternative 1: power line of up to 132kV voltage from Iziduli Emoyeni on-site substation to the planned new Klipspringer Substation (on the neighbouring Msenge Emoyeni project site).
- » Alternative 2: power line of up to 132kV voltage from Iziduli Emoyeni on-site substation to the Kopleegte Substation under construction (on the nearby Amakhala Emoyeni project site (currently under construction)).
- » Alternative 3: power line of up to 132kV voltage from Iziduli Emoyeni on-site substation to the existing Eskom Poseidon Substation.
- » Alternative 4: a power line of up to 132kV to from the Iziduli Emoyeni Wind Farm Facility on-site substation to the existing 132kV Poseidon-Albany power line (traversing the Iziduli Emoyeni wind farm project site) for a loop in/out configuration grid connection.

These power line routes are being assessed under a separate application for Environmental Authorisation) Basic Assessment process (DEA Ref No 14/12/16/3/3/1/1354).

Description of the environment of the proposed on-site substation site:

Climate: The climate is mild, with mean minimum and maximum temperatures 13°C and 22°C respectively, and mean annual rainfall of about 550 mm, which falls year-round but mostly in summer. The altitude of the proposed substation is 750 m above sea level.

Land use: Land use is predominantly stock-farming – cattle, sheep and game, with very limited areas of agriculture around the farmsteads and adjacent to watercourses. There are multiple farm houses and associated outhouses within the inclusive development area, which is crossed by a major thoroughfare – the R350 between Bedford and Grahamstown - and a network of lesser, gravel roads and farm tracks. Several major transmission and distribution power lines traverse the area, converging on Eskom’s Poseidon Substation, situated to the north west. The Poseidon Substation is situated approximately 23 km northwest of the proposed Iziduli on-site substation site. The Amakhala Emoyeni (phase 1) Wind Farm Facility located north east of the site is currently under construction, and the Cookhouse Wind Farm Facility located approx.25km northeast, is already constructed and operational. There are a number of other proposed wind farms in the surrounding area, including the authorised Msenge

Emoyeni Wind Energy Facility which is immediately adjacent to Iziduli Emoyeni to the west.

Vegetation and terrestrial habitats: The on-site substation development footprint site falls within the Bedford Dry Grassland (refer to Figure 2), at the interface between the Albany Thicket and the Sub-escarpment Grassland Bioregions. The natural vegetation is dominated by some sloped terrain with short to tall thicket, featuring woody trees, shrubs and succulents.

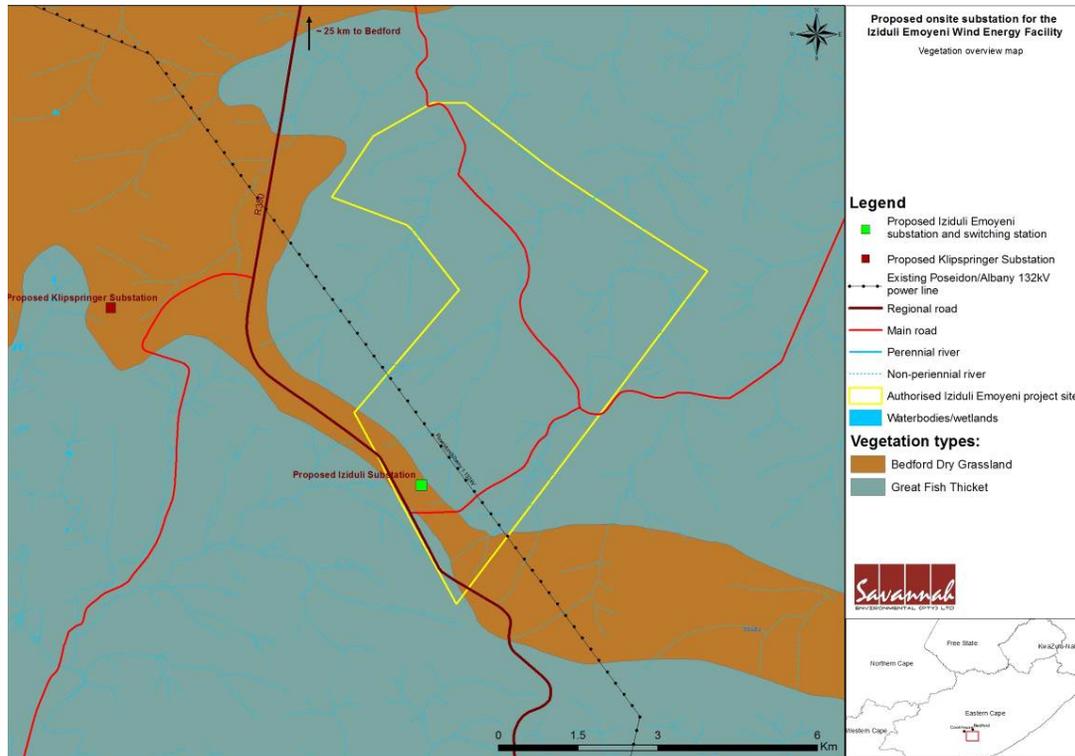


Figure 2: Vegetation overview map for the proposed Iziduli Emoyeni on-site substation

Aquatic habitats:

The larger area around the Project is dominated by undulating hills, found within the middle portions of the Koonap / Great Fish River catchment. Several small drainage lines are evident within the region and the Wind Farm Facility site where the Project is located contains a number of non-perennial drainage lines and watercourses which drain into more significant riparian areas, some of which may contain flowing water for significant parts of the year. The watercourses and riparian zones are often dry with a sandy or rocky bed, but there are also grassy watercourses and seepage areas in upper reaches. The proposed on-site substation is located ~1.5km away from the nearest wetland and ~1.6km from the nearest watercourse (Appendix D1).

Site Alternatives:

In selecting the Project's development site, the following was considered:

- » Grid connection optimisation - The proposed on-site substation is situated so as to provide optimal grid connection for either of the existing available grid connection alternatives. Its location is within 1km from the existing 132kV power line traversing the Wind Farm Facility site and also located in an area optimised for the construction of new power lines in the direction of other substations outside of the Wind Farm Facility site.
- » The approved Wind Farm Facility layout plan and turbine positions (the proposed on-site substation location does not interfere with the current Wind Farm Facility layout)

The selection of alternative sites is constrained on this basis.

Development phases

A series of activities will need to be undertaken during the design, pre-construction, construction, operation and decommissioning phases.

Pre-construction and Construction phase:

The construction of an on-site substation and associated infrastructure including access road, security fence etc. will be undertaken.

- 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
- Step 9: Testing and commissioning

Operation Phase:

The proposed substation will require routine maintenance work throughout the operation period. The substation maintenance will be the responsibility of the infrastructure owner (Emoyeni Wind Farm Renewable Energy (Pty) Ltd). The site will be accessed using the access road established during the construction phase.

Decommissioning Phase:

The on-site substation is expected to have a lifespan of up to 25 years (with maintenance) and the infrastructure would only be decommissioned once it has

reached the end of its economic life, or if 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 area (where infrastructure has been removed) will be rehabilitated, if required, depending on the future land-use of the area.

Provide a detailed description of the listed activities¹ associated with the project as applied for

The following listed activities are relevant to the proposed development²:

Activity listed in GNR 544 – 546	Activity listed in GNR 983 - 985	Relevance of Activity to Project
GN544 item 10: The construction of facilities or infrastructure for the transmission and distribution of electricity- (i). outside urban areas or industrial complexes with a capacity of more than 33 but less than 275 kV	GN983, activity 11 (i) The development of facilities or infrastructure for the transmission and distribution of electricity- (i) outside urban areas or industrial complexes with a capacity of more than 33 but less than 275 kilovolts	A 33/132kV on-site substation will be constructed in order to connect the authorised Iziduli Emoyeni Wind Farm Facility to the National grid.
GN544 item 11: construction of: (iii).bridges (x) buildings exceeding 50	GN983 item 12: The development of (iii).bridges (x) buildings exceeding 50	The proposed onsite substation may impede upon watercourses or within 32 metres of a watercourse.

¹ The EIA Regulations were revised in December 2014 in terms of GNR 982 – 985. Similarly listed and additional activities relevant to the current application have been identified and are listed in the table above.
² A precautionary approach has been taken in determining the list of relevant Listed Activities (LA) such that all possible activities relevant to the project were included in the original application. During the course of the BA process some listed activities have been removed and added as per the findings of the BA process. The application has been refined, an updated application form with the relevant LA (refer to table above) has been submitted to DEA.

Activity listed in GNR 544 – 546	Activity listed in GNR 983 - 985	Relevance of Activity to Project
<p>square metres in size; or (xi). Infrastructure or structures covering 50 square metres or more Where such construction occurs within a watercourse or within 32 metres of a watercourse, measured from the edge of a watercourse</p>	<p>square metres in size; or (xii) infrastructure or structures covering 50 square metres or more Where such construction occurs- (c) if no development setback line, within a watercourse or within 32 metres of a watercourse, measures from the edge of a watercourse,</p>	
<p>GN544 item 18: 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 or more than 5 cubic metres from: (i) a watercourse;</p>	<p>GN 983 item 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 or more than 5 cubic metres from (i). a water course</p>	<p>The proposed onsite substation may require infilling or depositing of materials from a watercourse.</p>
<p>GN 544 item 23: The transformation of undeveloped, vacant or derelict land to- (ii) residential, retail, commercial, recreational, industrial or institutional use, outside an urban area and where the total area to be transformed is bigger than 1 hectare but less than 20 hectares.</p>	<p>GN 983 item 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 1hectare; excluding where such land has already been developed for residential, mixed, retail, commercial, industrial or institutional purposes.</p>	<p>The area to be transformed for the proposed on-site substation is greater than 1 ha and less than 20ha in extent.</p>
<p>GN 546 item 14: The clearance of an area of 5 hectares or more of vegetation where 75% or more of the vegetative cover constitutes indigenous vegetation (a). Eastern Cape Province</p>	<p>GN 983 item 27: The clearance of an area of 1 hectare or more, but less than 20 hectares of indigenous vegetation</p>	<p>The proposed power line and associated infrastructure may require the clearance of an area of 5 hectares or more of vegetative cover where 75% or more may constitute indigenous vegetation.</p>

Activity listed in GNR 544 – 546	Activity listed in GNR 983 - 985	Relevance of Activity to Project
(i). All areas outside urban areas		

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

No site alternatives are applicable. In selecting the proposed on-site substation project site, the following was considered and therefore the identification of site alternatives were constrained on this basis:

- » Grid connection optimisation - The proposed on-site substation is nearest to the existing available grid connection alternatives optimally located to facilitate connection to the various power line alternatives.
- » The proposed substation site does not interfere with the Wind Farm Facility layout.
- » The medium sensitive ecological areas were preferred to avoid the surrounding medium-high ecologically sensitive areas.

- » The proposed substation site is technically suitable for the construction of a substation (topography, access and ground conditions).

Alternative 1 (preferred alternative)		
Description	Latitude (S):	Longitude (E):
The proposed on-site substation is situated in the southern-most extent of the authorised Iziduli Emoyeni Wind Farm Facility site, west of the existing Poseidon–Albany 132kV power line which traverses the Wind Farm Facility site. The Project site is situated close (approximately 400 metres north) to the intersection of the R350 main road and the gravel road to Adelaide. This location within the authorised Wind Farm Facility project site presents optimal grid connection, regardless of which one of the proposed grid connection (power line) alternatives is realised. The on-site substation site is located an area of medium ecological sensitivity and will avoid the surrounding medium-high ecological sensitive areas.	32°56'23.66"S	26° 7'42.89"E
Alternative 2		
Description	Latitude (S):	Longitude (E):
Alternative 3		
Description	Latitude (S):	Longitude (E):

In the case of linear activities:

	Latitude (S):			Longitude (E):		
• 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.

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.

Coordinates of the four corners of the proposed substation development footprint site have been attached in **Appendix A**.

b) Layout alternatives

As with the selection of the site alternatives, the consideration of layout alternatives are constrained on the basis of the approved wind energy facility layout plan and optimised grid connection factors. The substation site is also situated outside of the identified areas of higher ecological sensitivity. Layout alternatives for substations are constrained as the area to be transformed cannot deviate significantly from the standard design for 33/132kV substations (with a dimension of up to 200m X 250m) as required by Eskom’s building standards. There are therefore no layout alternatives.

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 technology alternatives are applicable. The choice of technology does not (significantly) affect the environmental impact of the proposed development in any way. Facility illustrations are attached in **Appendix C**.

Alternative 1
Alternative 2
Alternative 3

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

No other feasible alternatives were identified.

Alternative 1 (preferred alternative)
Design alternatives:
Alternative 2
Alternative 3

e) No-go alternative

The option of not constructing the proposed on-site project substation within the approved Iziduli Emoyeni Wind Farm Facility is assessed as the “no go alternative” in this Basic Assessment Report (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:

Alternative A1³ (preferred activity alternative)
 Alternative A2 (if any)
 Alternative A3 (if any)

Size of the activity:

200m X 250 m (50,000m ² or 5 ha)
m ²
m ²

or, for linear activities:

Alternative A1 (preferred activity alternative)
 Alternative A2 (if any)
 Alternative A3 (if any)

Length of the activity:

N/A
N/A
N/A

³ “Alternative A..” refer to activity, process, technology or other alternatives.

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

Alternative:	Size of the site/servitude:
Alternative 1	200m X 250m
Alternative 2	N/A
Alternative A3 (if any)	N/A

4. SITE ACCESS

Does ready access to the site exist?

	NO ✓
500m – 600m	

If NO, what is the distance over which a new access road will be built

Describe the type of access road planned:

A gravel access road is situated adjacent to the proposed substation site which runs parallel to and within 250m from the R350 road. The project site is within 900m from the junction of the access road and the R350 as shown in the image below. A short internal access road of approximately 500 – 600m will be required to be constructed from the gravel road to the substation site entrance.



Photograph of access point at the junction of the R350 and gravel access road (which continues behind farm gate)

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. See Appendix A.

A site plan showing the position of the access roads (existing and proposed), as well as an indication of the road in relation to the site is included within **Appendix A**.

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 kilometres, 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).

An A3 Locality Map is attached 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.

A detailed site plan(s) is attached within **Appendix A**.

7. SENSITIVITY MAP

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

- watercourses;
- the 1:100 year flood line (where available or where it is required by DWA);
- ridges;
- cultural and historical features;

- areas with indigenous vegetation (even if it is degraded or infested with alien species); and
- critical biodiversity areas.

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

A sensitivity map the proposed substation is attached 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.

Colour photographs have been taken from the centre of the proposed on-site substation site. Annotated photographs are included in **Appendix B**.

9. FACILITY ILLUSTRATION

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

A preliminary facility illustration is shown in **Appendix C**. Note that the illustration provided was prepared for another similar project but is a good example of the type of facility that will be constructed for the Iziduli Emoyeni project (similar layout, size and components).

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
Windlab received an environmental authorisation for the proposed Iziduli Emoyeni Wind Farm Facility (previously known as Amakhala Emoyeni Wind Farm Facility Phase 4) on 28 August 2012 from the National Department of Environmental Affairs (DEA Ref: 12/12/20/1754/4). The Iziduli Emoyeni Wind Farm Facility was previously part of the greater project concept known as the Amakhala Emoyeni Wind Farm Facility. This			

<p>Amakhala Emoyeni Wind Farm Facility was split into four phases (in order to align with the REIPPPP requirements restricting a project capacity size to 140MW). The proposed on-site substation is situated on Portion Remainder of the Farm Brakkefonteyn 218 which was encompassed in the Environmental Authorisation for the Iziduli Emoyeni Wind Farm Facility.</p>		
<p>2. Will the activity be in line with the following?</p>		
<p>(a) Provincial Spatial Development Framework (PSDF)</p>	<p>YES ✓</p>	<p>Please explain</p>
<p>One of the key development issues within the PSDF for Eastern Cape Province is to address electricity supply. The PSDF aims at assisting Eskom in being able to plan according to an agreed long term spatial development scenario and build capacity in those areas where development is to be promoted. The proposed Iziduli Emoyeni Wind Farm Facility on-site substation will assist to connect the electricity generated by the Wind Farm Facility into the national grid.</p>		
<p>(b) Urban edge / Edge of Built environment for the area</p>	<p>NO ✓</p>	<p>Please explain</p>
<p>The Project area is located between Cookhouse and Bedford within the Blue Crane Route Local Municipality approximately 10km southwest of Bedford in the Eastern Cape. The site does not fall within the urban edge and will not impact on the urban edge in any way.</p>		
<p>(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?).</p>	<p>Yes ✓</p>	<p>Please explain</p>
<p>The Project will not compromise IDP objectives but will rather assist in reaching these as the IDP of the Blue Crane Route Local Municipality aims to ensure that all formal households have access to reliable and affordable electricity as well as streetlights, which supports safety and access for emergency services. This Project will assist in supporting the local electricity supply.</p>		
<p>(d) Approved Structure Plan of the Municipality</p>	<p>YES ✓</p>	<p>Please explain</p>
<p>The municipality is aware of the approved Iziduli Emoyeni Wind Farm Facility. The proposed on-site substation which forms part of the Wind Farm Facility's grid connection supports this approved project and does not compromise the structure of the municipal plan.</p>		

<p>(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?)</p>		<p>NO ✓</p>	<p>Please explain</p>
<p>There is no EMF which encompasses the study area.</p>			
<p>(f) Any other Plans (e.g. Guide Plan)</p>	<p>YES</p>	<p>NO</p>	<p>Please explain</p>
<p>The relevant conservation plan is the Eastern Cape Biodiversity Conservation Plan and the Addo Biodiversity Plan. In terms of these two plans, the substation location does not fall within a CBA.</p>			
<p>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)?</p>	<p>YES ✓</p>		<p>Please explain</p>
<p>The main purpose of the proposed on-site substation is to enable the connection of the authorised Iziduli Emoyeni Wind Farm Facility to the national grid. This Project is not specifically considered within the existing approved SDF.</p>			
<p>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.)</p>	<p>YES ✓</p>		<p>Please explain</p>
<p>The main purpose of the proposed on-site substation is to enable the connection of the authorised Iziduli Emoyeni Wind Farm Facility to the national grid. The Project will enable the up to 84MW Wind Farm Facility to connect to the electricity grid, which will have a positive economic impact at a local and regional scale as required by the competitive REIPPPP.</p>			
<p>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.)</p>	<p>YES ✓</p>		<p>Please explain</p>
<p>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.</p>			

<p>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.)</p>		<p>NO ✓</p>	<p>Please explain</p>
<p>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.</p>			
<p>7. Is this project part of a national programme to address an issue of national concern or importance?</p>		<p>YES ✓</p>	<p>Please explain</p>
<p>Within a policy framework, the development of renewable energy in South Africa is supported by the White Paper on Renewable Energy (November 2003). In order to meet the long-term goal of a sustainable renewable energy industry, a goal of 17,8GW of renewables by 2030 has been set by the Department of Energy (DoE) within the Integrated Resource Plan (IRP) 2010. The energy will be produced mainly from wind, solar, biomass, and small-scale hydro (with wind and solar comprising the bulk of the power generation capacity). This amounts to ~42% of all new power generation being derived from renewable energy forms by 2030. This is however dependent on the assumed learning rates and associated cost reductions for renewable options.</p> <p>In order to integrate the power generated by the Iziduli Emoyeni Wind Farm Facility into the national grid, the Wind Farm Facility is requires an on-site substation for transforming the power produced to a voltage that can be transported and exported to the national grid via one of the proposed power lines (applied for in a separate BA process).</p>			
<p>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.)</p>		<p>YES ✓</p>	<p>Please explain</p>
<p>The Iziduli Emoyeni Wind Farm Facility is authorised. The location of this Wind Farm Facility is therefore already determined. The proposed on-site substation site will enable this Wind Farm Facility to connect to the national grid. The location for the proposed on-site substation is identified as the preferred location within the authorised Wind Farm Facility in relation to the Wind Farm Facility layout and other grid connection infrastructure, and is therefore the only feasible option.</p>			
<p>9. Is the development the best practicable environmental option for this land/site?</p>		<p>YES ✓</p>	<p>Please explain</p>
<p>The Iziduli Emoyeni Wind Farm Facility is an authorised facility. The proposed</p>			

<p>substation site is considered to be the most appropriate for this infrastructure, taking technical and environmental (social and biophysical) issues into consideration. The specialist studies undertaken as part of this Basic Assessment conclude that the development of the on-site substation will have medium - low environmental impacts. The substation will be situated in an area defined by renewable energy and is considered to be the best practicable environmental option for its function on the site.</p>		
<p>10. Will the benefits of the proposed land use/development outweigh the negative impacts of it?</p>	<p>YES ✓</p>	<p>Please explain</p>
<p>The specialist studies undertaken as part of this Basic Assessment conclude that the development of the substation will have low to medium environmental impacts. The proposed project will facilitate the connection of the Wind Farm Facility to the national grid thereby facilitating the transport of renewable energy. This will have a positive impact at a local, regional and national level. Since the current land use is predominantly sheep farming, due to the limited footprint of the on-site substation the benefits of the Project will outweigh the negative impacts.</p>		
<p>11. Will the proposed land use/development set a precedent for similar activities in the area (local municipality)?</p>	<p>NO ✓</p>	<p>Please explain</p>
<p>The proposed substation is associated with the approved Iziduli Emoyeni Wind Farm Facility. The surrounding area is already largely impacted by electricity generation and transport infrastructure. The proposed on-site substation will not differ from the infrastructure already present in the area and will follow a precedent which has already been set.</p>		
<p>12. Will any person's rights be negatively affected by the proposed activity/ies?</p>	<p>NO ✓</p>	<p>Please explain</p>
<p>A private landowner will be affected by the proposed Project. The landowner has been consulted by the applicant and the environmental team and is aware of the proposed Project and Wind Farm Facility. No person's rights will be negatively affected.</p>		
<p>13. Will the proposed activity/ies compromise the "urban edge" as defined by the local municipality?</p>	<p>NO ✓</p>	<p>Please explain</p>
<p>The proposed Project is located approximately 25 km south of the town of Bedford. The site is outside of the urban edge and will not impact on the urban edge or edge of built environment in any way.</p>		
<p>14. Will the proposed activity/ies contribute to any of the 17 Strategic Integrated Projects (SIPS)?</p>	<p>YES ✓</p>	<p>Please explain</p>
<p>Once a preferred bidder under the REIPPPP of the DOE, the Iziduli Emoyeni Wind Farm Facility of which the on-site substation will form part, will be considered a SIP under SIP8 and SIP9. The Iziduli Emoyeni Wind Farm Facility development will produce green energy (up to 84MW) on a national scale. The Iziduli Emoyeni Wind Farm Facility will also promote economic development by creating jobs and local content, enterprise development and other socio-economic development. The local community will directly benefit from the revenue of the project as shareholder of the Wind Farm Facility.</p>		

<p>During the construction and operation of the Wind Farm Facility of which the proposed on-site substation will form part, skilled and unskilled job opportunities will be available for members of local communities.</p>	
<p>15. What will the benefits be to society in general and to the local communities?</p>	<p>Please explain</p>
<p>The on-site substation will form part of the Iziduli Emoyeni Wind Farm Facility. The REIPPPP through which the Wind Farm Facility will be evaluated requires economic development commitments from onshore Wind Farm Facility's. The main economic development beneficiaries of approved projects are currently communities living within a 50 km radius of renewable energy facilities.</p> <p>Wind Farm Facility's in South Africa will create skilled and unskilled jobs, particularly during the construction period. Under the REIPPPP, projects are incentivised to maximise the direct job creation opportunities, particularly for people in the communities surrounding the project.</p> <p>Wind Farm Facility's tend to be constructed in rural areas with small communities and limited infrastructure and social amenities. A wind farm would create indirect jobs in accommodation, catering and other services that would support a wind farm and cater for the material and social needs of wind farm workers.</p> <p>Localisation is considered one of the major contributors to job creation and general improvement of the economy of South Africa. Localisation through the construction of new manufacturing facilities to build wind turbine towers and other turbine components in South Africa is currently progressing.</p> <p>Wind energy can provide technical skills to South Africans and thus improve the technical skills profile of the country and the regions where wind energy facilities are located. Through the REIPPPP, developers' own initiatives and through support from international donor agencies, a number of young South Africans are being trained on various aspects of wind farm construction and operation.</p> <p>The surrounding communities of successful projects under the REIPPPP are required to have an equity stake in the project, which are either funded by financier or by the other equity partners. Community ownership of an operating Wind Farm Facility is generally conducted via abroad-based community trust, with the surrounding</p>	

<p>communities as beneficiaries of the dividends paid to shareholders in the project company. The dividend revenue will be invested in community development initiatives as outlined in the community trust deeds.</p> <p>In this way, successful REIPPPP projects are required to invest a percentage of gross revenue in socio economic development and enterprise development, primarily in the surrounding communities but in some cases beyond a 50 km radius of the project. A number of critical infrastructure and social programmes could be developed to support and enrich the areas in which the wind facilities are installed.</p> <p>These projects, if successfully implemented, have the potential to transform for the better key development areas of South Africa and would assist South Africa meet its development goals while meeting its carbon emission reduction targets as per international protocols.</p>	
16. Any other need and desirability considerations related to the proposed activity?	Please explain
<p>The on-site substation forms part of the electrical infrastructure of the Iziduli Emoyeni Wind Farm Facility that will produce (renewable) energy. The Project will contribute to the transport of the power to the national grid once the Wind Farm Facility is approved and built under the REIPPPP. Due to the competitive nature of the Programme, the price of the electricity will be one of the cheapest in compared to more conventional energy production.</p>	
17. How does the project fit into the National Development Plan for 2030?	Please explain
<p>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 Farm Facility development of which the onsite substation will form part, will assist in reducing the carbon footprint, as it will be transporting energy produced via turbines from wind and it will facilitate the infrastructure growth in the area including job creation, local content, enterprise development and other socio-economic benefits.</p>	
18. Please describe how the general objectives of Integrated Environmental Management as set out in section 23 of NEMA have been taken into account.	
<p>The general objectives of Integrated Environmental Management have been taken into account for this Basic Assessment report by means of identifying, predicting and evaluating the actual and potential impacts on the environment, socio-economic conditions and cultural heritage.</p>	

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 1: List all legislation, policies and/or guidelines for the proposed on-site substation for the authorised Iziduli Emoyeni Wind Farm Facility

Legislation	Applicable Requirements	Relevant Authority	Compliance Requirements
National Legislation			
National Environmental Management Act (Act No 107 of 1998)	<p>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.</p> <p>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.</p> <p>In terms of GNR 544 and 546 of June 2010 a Basic Assessment Process is required to be undertaken for the proposed project.</p>	<ul style="list-style-type: none"> » National Department of Environmental Affairs » Eastern Cape DEDEAT 	<p>The listed activities triggered by the proposed onsite substation have been identified and assessed in the EIA process being undertaken (i.e. Basic Assessment).</p> <p>This Basic Assessment report will be submitted to the competent and commenting authority in support of the application for authorisation.</p>
National Environmental Management Act (Act No 107 of 1998)	<p>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.</p> <p>In terms of NEMA, it has become the legal duty of a project proponent to consider a project holistically, and to consider the cumulative effect of a variety of impacts.</p>	Department of Environmental Affairs	While no permitting or licensing requirements arise directly by virtue of the proposed Project, this section has found application during the Basic Assessment process through the consideration of potential impacts (cumulative, direct, and indirect). It will continue to apply throughout the life cycle of the Project.

Legislation	Applicable Requirements	Relevant Authority	Compliance Requirements
Environment Conservation Act (Act No 73 of 1989)	National Noise Control Regulations (GN R154 dated 10 January 1992)	<ul style="list-style-type: none"> » Department of Environmental Affairs » Local Authorities 	Noise impacts are expected to be associated with the construction phase of the project only and are not likely to present a significant intrusion to the local community. Therefore is no requirement for a noise permit in terms of the legislation.
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.	<ul style="list-style-type: none"> » Department of Water Affairs and sanitation » Eastern Cape DEDEAT 	No Water Use License is expected to be required as the Project site is situated outside of the regulated area of watercourses.
National Water Act (Act No 36 of 1998)	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.	<ul style="list-style-type: none"> » National Department of Water and sanitation » Eastern Cape DEDEAT 	This section of the Act will apply with respect to the potential impact on drainage lines, 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. Requirements for Environmental Management Programmes and Environmental Management Plans are set out in S39 of the Act.	Department of Mineral Resources	<p>As no borrow pits are expected to be required for the construction of the on-site substation, no mining permit or right is required to be obtained.</p> <p>Consent in terms of Section 53 of the MPRDA may be required to ensure that the proposed land use is not contrary to the provisions of the Act.</p>
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."	Department of Environmental Affairs	No permitting or licensing requirements arise from this legislation.

Legislation	Applicable Requirements	Relevant Authority	Compliance Requirements
	Declaration of controlled emitters (Part 3 of Act) and controlled fuels (Part 4 of Act) with relevant emission standards. GN R 827 – National Dust Control Regulations prescribes general measures for the control of dust in all areas	Department of Environmental Affairs	Describes the measures for control and monitoring of dust, including penalties.
National Heritage Resources Act (Act No 25 of 1999)	<ul style="list-style-type: none"> » S38 states that Heritage Impact Assessments (HIAs) are required for certain kinds of development including <ul style="list-style-type: none"> • 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 m² 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 m²; or the re-zoning of a site exceeding 10 000 m² 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 	<ul style="list-style-type: none"> » South African Heritage Resources Agency » EC PHRA 	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. An HIA has been undertaken as part of the Basic Assessment Process to identify potential heritage sites.

Legislation	Applicable Requirements	Relevant Authority	Compliance Requirements
	<p>an EIA is carried out as long as the EIA contains an adequate HIA component that fulfils the provisions of S38. In such cases only those components not addressed by the EIA should be covered by the heritage component.</p>		
<p>National Environmental Management: Biodiversity Act (Act No 10 of 2004)</p>	<p>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.</p> <p>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.</p> <p>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</p>	<p>Department of Environmental Affairs</p>	<p>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.</p>

Legislation	Applicable Requirements	Relevant Authority	Compliance Requirements
	<p>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).</p>		
<p>Conservation of Agricultural Resources Act (Act No 43 of 1983)</p>	<p>Regulation 15 of GNR1048 provides for the declaration of weeds and invader plants. Weeds are described as Category 1 plants, while invader plants are described as Category 2 and Category 3 plants. These regulations provide that Category 1, 2 and 3 plants must not occur on land and that such plants must be controlled by the methods set out in Regulation 15E.</p>	<p>Department of Agriculture</p>	<p>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.</p>
<p>National Forests Act (Act No. 84 of 1998)</p>	<p>» In terms of S5(1) no person may cut, disturb, damage or destroy any protected tree or possess, collect, remove, transport, export, purchase, sell donate or in any other manner acquire or dispose of any protected tree or any 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”.</p>	<p>National Department of Forestry</p>	<p>A permit would need to be obtained for any protected trees that are affected by the development. No such protected trees were identified along within the footprint of the on-site substation</p>

Legislation	Applicable Requirements	Relevant Authority	Compliance Requirements
	<p>» GN 1042 provides a list of protected tree species.</p>		
<p>National Veld and Forest Fire Act (Act 101 of 1998)</p>	<p>In terms of S21 the applicant would be obliged to burn firebreaks to ensure that should a veldfire occur on the property, that it does not spread to adjoining land.</p> <p>In terms of S12 the applicant must ensure that the firebreak is wide and long enough to have a reasonable chance of preventing the fire from spreading, not causing erosion, and is reasonably free of inflammable material.</p> <p>In terms of S17, the applicant must have such equipment, protective clothing, and trained personnel for extinguishing fires.</p>	<p>Department of Water Affairs and Sanitation</p>	<p>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.</p>
<p>Hazardous Substances Act (Act No 15 of 1973)</p>	<p>This Act regulates the control of substances that may cause injury, or ill health, or death due to their toxic, corrosive, irritant, strongly sensitising or inflammable nature or the generation of pressure thereby in certain instances and for the control of certain electronic products. To provide for the rating of such substances or products in relation to the degree of danger; to provide for the prohibition and control of the importation, manufacture, sale, use, operation, modification, disposal or dumping of such substances and products.</p> <p>» Group I and II: Any substance or mixture</p>	<p>Department of Health</p>	<p>It is necessary to identify and list all the Group I, II, III, and IV hazardous substances that may be on the site and in what operational context they are used, stored or handled. If applicable, a license is required to be obtained from the Department of Health.</p>

Legislation	Applicable Requirements	Relevant Authority	Compliance Requirements
	<p>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</p> <ul style="list-style-type: none"> » Group IV: any electronic product; and » Group V: any radioactive material. <p>The use, conveyance, or storage of any hazardous substance (such as distillate fuel) is prohibited without an appropriate license being in force.</p>		
<p>National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008)</p>	<p>The Minister may by notice in the <i>Gazette</i> publish a list of waste management activities that have, or are likely to have, a detrimental effect on the environment.</p> <p>The Minister may amend the list by –</p> <ul style="list-style-type: none"> » Adding other waste management activities to the list. » Removing waste management activities from the list. » Making other changes to the particulars on the list. <p>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</p>	<p>National Department of Water and Environmental Affairs (hazardous waste)</p> <p>Eastern Cape Department of Environmental Affairs (general waste)</p>	<p>As no waste disposal site is to be associated with the proposed project, no permit is required in this regard.</p> <p>Waste handling, storage and disposal during construction and operation is required to be undertaken in accordance with the requirements of the Act, as detailed in the EMPr (refer to Appendix G).</p> <p>The volumes of waste to be generated and stored on the site during construction and operation of the facility will not require a waste license.</p>

Legislation	Applicable Requirements	Relevant Authority	Compliance Requirements
	<p>(Category A and B) while Category C Activities must be undertaken in accordance with the necessary norms and standards.</p> <p>Any person who stores waste must at least take steps, unless otherwise provided by this Act, to ensure that:</p> <ul style="list-style-type: none"> » The containers in which any waste is stored, are intact and not corroded or in » any other way rendered unfit for the safe storage of waste. » Adequate measures are taken to prevent accidental spillage or leaking. » The waste cannot be blown away. » Nuisances such as odour, visual impacts and breeding of vectors do not arise; and » Pollution of the environment and harm to health are prevented. 		
<p>National Road Traffic Act (Act No 93 of 1996)</p>	<ul style="list-style-type: none"> » 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 	<ul style="list-style-type: none"> » South African National Roads Agency Limited (national roads) » Provincial Department of Transport 	<ul style="list-style-type: none"> » 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

Legislation	Applicable Requirements	Relevant Authority	Compliance Requirements
	<p>imposed on abnormally heavy loads are discussed in relation to the damaging effect on road pavements, bridges, and culverts.</p> <p>» 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.</p>		<p>configuration and height when loaded, some of the substation components may not meet specified dimensional limitations (height and width).</p>
<i>Provincial Legislation/ Policies / Plans</i>			
<p>Eastern Cape Provincial Growth and Development Programme</p>	<p>Section 5 of the PGDP (2004-2014) identifies six strategic objective areas of the PGDP. Of these the infrastructure programme is of relevance to the study. The report notes that development of infrastructure, especially in the former homelands, is a necessary condition to eradicate poverty.</p>	<p>Eastern Cape Department of Economic Development & Environmental Affairs (DEDEAT)</p>	<p>Infrastructure development, in turn, must have strong growth promotion effects on the agriculture, manufacturing and tourism sectors by improving market access and by “crowding in” private investment. Poverty alleviation should also be promoted through labour-intensive and community based construction methods.</p>
<p>Nature Conservation Ordinance (Act No. 19 of 1974)</p>	<p>» Article 63 prohibits the picking of certain fauna (including cutting, chopping, taking, and gathering, uprooting, damaging, or</p>	<p>» Eastern Cape DEDEAT</p>	<p>Permitting or licensing requirements may arise from this legislation for the proposed activities to be undertaken</p>

Legislation	Applicable Requirements	Relevant Authority	Compliance Requirements
	destroying). » Schedule 3 lists endangered flora and Schedule 4 lists protected flora. » Articles 26 to 47 regulate the use of wild animals.		for the proposed project.
Cacadu District Municipality Integrated Development Plan	The strategic priorities that are relevant to the project are as follows: » Identification of Economic Opportunities » Provision and Maintenance of Infrastructure » Enhancement of Skills and Education Systems » Sustainable Resource Management and Use	Cacadu District Municipality	The IDP development priorities highlighted in the Cacadu IDP are as follows: » Priority 1: Infrastructure Investment » Priority 2: Capacity Building and Support to Local Municipalities » Priority 3: Economic Development » Priority 4: Community 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 ✓	
Minimal waste to be generated by the activity	

If YES, what estimated quantity will be produced per month?

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 ✓
n/a	

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? m³

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 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 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?

NO ✓

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

14. ENERGY EFFICIENCY

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

The proposed on-site substation will form part of the electrical infrastructure of a wind energy facility (Wind Farm Facility). Energy efficiency is pursued through the design of the Wind Farm Facility.

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

The on-site substation will form part of the electrical infrastructure of a wind energy facility. This facility will produce alternative energy.

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
District Municipality	Cacadu District Municipality
Local Municipality	Blue Crane Route Local Municipality
Ward Number(s)	1
Farm name and number	Remainder of the Farm Brakkefonteyn 218
Portion number	Portion 0
SG Code	C1000000000021800000

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

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

The property is currently zoned for agriculture and will be rezoned for renewable energy development purposes prior to construction.

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

Is a change of land-use or a consent use application required?

NO ✓

1. GRADIENT OF THE SITE

Indicate the general gradient of the site.

Alternative S1:

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

Alternative S2 (if any):

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

Alternative S3 (if any):

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

2. LOCATION IN LANDSCAPE

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

2.1 Ridgeline 2.2 Plateau 2.3 Side slope of hill/mountain	2.4 Closed valley 2.5 Open valley 2.6 Plain	2.7 Undulating plain / low hills 2.8 Dune 2.9 Seafront
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

3. GROUNDWATER, SOIL AND GEOLOGICAL STABILITY OF THE SITE

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

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

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

4. GROUNDCOVER

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

Substation site

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

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

An Ecological assessment has been completed for the proposed substation - refer to Appendix D1.

5. SURFACE WATER

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

Perennial River		NO✓	
Non-Perennial River (nearest is within 1.6km)		NO✓	
Permanent Wetland (nearest is within 1.5km)		NO✓	
Seasonal Wetland		NO✓	
Artificial Wetland		NO✓	
Estuarine / Lagoonal wetland		NO✓	

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

The nearest watercourse and wetland are situated 1.6 and 1.5km away from the substation development footprint site.

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 land uses:

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:

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:

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

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

Both the critical biodiversity area and the National Protected Area Expansion Strategy (NPAES) site occurs well outside of the study area and do not affect the site of the proposed on-site substation.

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

7. CULTURAL/HISTORICAL FEATURES

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

NO ✓

The majority of the historical built environment, graveyards and other features are concentrated at settlements along the main gravel roads and in the valleys. In general the substation development is a fair distance from these heritage features (~1km and more) and the development will not have directly impact on those features. However, these structures are an integral part of the cultural landscape and are sensitive to damage.



Image of labourers settlement occurring within 1km from the proposed on-site substation site

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:

Will any building or structure older than 60 years be affected in any way?

NO ✓

Is it necessary to apply for a permit in terms of the National Heritage Resources Act, 1999 (Act 25 of 1999)?

NO ✓

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

8. SOCIO-ECONOMIC CHARACTER

a) Local Municipality

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

Level of unemployment:

Unemployment within the Municipality is estimated at 42.7% (2007) which is above the Eastern Cape average of ~32% (Eastern Cape State of the Environment Report, 2004), while ~42% of the population are listed as 'not economically active'. The largest sectors in terms of employment within the municipality in 2001 were Agriculture (~40%), Community Service (~27%), Households (14%), trade (5%) Construction (~3%) and Manufacturing (~3%). The 2001 Census data listed 41% as Undetermined.

Economic profile of local municipality:

The population the Blue Crane Route Municipality is estimated at 40 000 (Community Survey, 2007) with an annual growth rate of ~2.4% per annum (Blue Crane Route Local Municipality IDP, 2007-2012). The population constitutes approximately 9.7% of the greater Cacadu District. The population density within the Municipality is estimated at 406 people/km (Community Survey, 2007). The majority of the population (~69%) lives in the urban nodes while ~31% live in rural villages or homesteads (Blue Crane Route Local Municipality IDP, 2007-2012).

The age profile of the population reveals that approximately 44% of the population falls within the economically active age bracket 15 to 65 years of age. The dependency ratio is, however, is 1.78 which means that every working individual supports 2 non-working/unemployed individual.

These demographics are reflected in the dominant languages within the Municipality, with 45% of the population being Afrikaans speaking, 49% isiXhosa speaking and 6% English speaking.

Level of education:

The level of education within the Municipality is relatively low. Just over 20% of the population (~ 1 in 50) has no schooling, while 27% have some primary school, only 9.5% have finished primary school, 25.6% have some high school and 11.7% have a grade 12 qualification. Approximately 5.2% of those with a Grade 12 qualification go on to obtain an education at University/Technikon level.

b) Socio-economic value of the activity

What is the expected capital value of the activity on completion?	The Wind Farm Facility of which the on-site substation forms part will result in a CAPEX of approx R2.5billion	
What is the expected yearly income that will be generated by or as a result of the activity?	The Wind Farm Facility of which the on-site substation forms part will result in an expected yearly income of approx R400 million/year.	
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?	The Wind Farm Facility of which the on-site substation forms part will result in approx 230-470 and 9-45 job opportunities during construction and operation respectively	
What is the expected value of the employment opportunities during the development and construction phase?	Unsure at this stage.	
What percentage of this will accrue to previously disadvantaged individuals?	Unsure at this stage.	
How many permanent new employment opportunities will be created during the operational phase of the activity?	Unsure at this stage..	
What is the expected current value of the employment opportunities during the first 10 years?	Unsure at this stage.	
What percentage of this will accrue to previously disadvantaged individuals?	Unsure 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.

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)	The area proposed for the onsite substation forms part of the Addo Biodiversity Sector Plan ecological support areas (refer to Appendix A)

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	98%	The proposed substation site is situated in an area of medium ecological sensitivity within the Bedford Dry Grassland vegetation type. The grassland is relatively short and contains a dwarf shrubby component of karroid origin.
Near Natural (includes areas with low to moderate level of alien invasive plants)	2%	The site does not currently harbour alien plants in significant densities. There are localised concentrations of Eucalyptus around homesteads and other species that occur sporadically in the landscape. Alien invasions are therefore not a major issue in the study area at the moment, but the presence of a diffuse disturbance over a wide area could lead to the spread of a number of species that are present in the area. The habitats most likely to be affected are watercourses and grasslands.
Degraded (includes areas heavily invaded by alien plants)	0%	
Transformed (includes cultivation,	0%	

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).
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 un-channelled wetlands, flats, seeps, pans, and artificial wetlands)		Estuary	Coastline
	Endangered				
	Vulnerable				
	Least Threatened ✓	NO ✓	NO ✓	NO ✓	NO ✓

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

Terrestrial ecosystem: The project site falls within the Albany Thicket Biome, at the interface between the Albany Thicket and the Sub-escarpment Grassland Bioregions. The natural vegetation of the substation site is dominated by Bedford Dry Grassland (undulating terrain with short, open, dry grassland with scattered Acacia Karroo woodland).

The area features open, hilly grassland (in many areas covered by a high density of termite mounds), grading into wooded and succulent-rich thicket vegetation along the drainage lines (located outside of the substation site).

Drainage systems: The larger wind energy facility study area is dominated by undulating hills, found within the middle portions of the Koonap / Great Fish River catchment. Several small drainage lines are evident within the region. Water resources within the study area were classified as follows:

- » Upper foothill drainage lines, with no visible channels, with limited inundation,

- and only contains small amounts of surface run-off during high rainfall events.
- » Lower foot hill streams, with visible channels, narrow riparian zones and small pools.
 - » Depression / pan wetland types
 - » Farm dams

According to the surface water study undertaken, the proposed substation site is ~1.5km away from the nearest wetland and ~1.6km from the nearest watercourse and no direct impact on water resources is anticipated.

Red data species: According to the Final EIA Report for the greater Amakhala Emoyeni Wind Farm Facility, there are four plant species recorded in the quarter degree grids that are listed on the Red List that could potentially occur in habitats that are available in the approved wind energy facility study area. There are nine mammal species of conservation concern, including one species classified as Endangered, which could occur in available habitats in the approved wind energy facility study area. Red data species are expected to be confined to the Great Fish vegetation biome and not in the Bedford Dry Grassland where the substation site occurs. A walkthrough study is required to determine the presence of endangered species at the substation site prior to construction.

SECTION C: PUBLIC PARTICIPATION

1. ADVERTISEMENT AND NOTICES

Publication name	The Herald Somerset Budget	
Date published	06 February 2015 05 February 2015	
Site notice position	Latitude	Longitude
	32°56'39.13"S	26° 7'34.96"E
Date placed	18 January 2015	

Include proof of the placement of the relevant advertisements and notices in **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.543.

- » A2 site notices were placed on a farm gate/fence of the Remainder of the Farm Brakkefonteyn 218.
- » A4 notices were placed at the public libraries and local municipality office/s.
- » A notification letter has been sent to Interested and Affected Parties (I&APs), stakeholders and organs of state informing them of the proposed project and inviting them to become involved in the Basic Assessment process.
- » Meetings were held with affected landowners prior to releasing the Draft Basic Assessment Report for public review. *(Due to the limited scale of the project and the limited number of properties affected, it has been considered that this approach would be the most appropriate to enable participation and capturing of any issues).*
- » Notification letters were sent to I&APs inviting I&APs to comment on the draft Basic Assessment Report.
- » During the review period of the DBAR, telephonic follow ups were made with the affected landowner, and no issues/concerns were raised.
- » An advert was placed in one regional and one local newspaper to notify the public of the availability of the Draft Basic Assessment Report for review.

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

- » e-mail delivery reports;
- » registered mail receipts;
- » courier waybills;

- » signed acknowledgements of receipt; and/or
- » or any other proof as agreed upon by the competent authority.

3. ISSUES RAISED BY INTERESTED AND AFFECTED PARTIES

Summary of main issues raised by I&APs	Summary of response from EAP
Stormwater management and erosion control measures	An Environmental Management Programme for the proposed project has been drafted to address ways to manage soil erosion and stormwater effectively within the project development footprint.

4. COMMENTS AND RESPONSE REPORT

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

All comments received during the review period of the draft Basic Assessment report, as well as responses provided has been captured and recorded within the Comments and Response Report attached as **Appendix E3** in the final Basic Assessment Report.

5. AUTHORITY PARTICIPATION

Authorities and organs of state identified as key stakeholders:

- | |
|---|
| <ul style="list-style-type: none"> • Eastern Cape Department of Economic Development & Environmental Affairs (DEDEA) • Department of Agriculture, Forestry & Fisheries • Department of Water and Sanitation • Department of Energy • Eastern Cape Department of Roads and Public Works • Eastern Cape Department of Rural Development & Agrarian Reform • Blue Crane Route Local Municipality • Sarah Baartman District Municipality • Eastern Cape Provincial Heritage Resources Agency • Square Kilometre Array (SKA): South Africa • BirdLife South Africa • Eskom |
|---|

Include proof that the Authorities and Organs of State received written notification of the proposed activities as **Appendix E4**.

In the case of renewable energy projects, Eskom and the SKA Project Office must be included in the list of Organs of State. Refer to **Appendix E4**.

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.

No deviations from the public participation process are applicable.

A list of registered I&APs is included as **Appendix E5**.

Copies of any correspondence and minutes of any meetings held are included in **Appendix E6 & E7**.

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 Iziduli Emoyeni on-site substation is provided in the table overleaf.

Activity	Impact summary	Significance	Proposed mitigation
Alternative 1 (preferred alternative)			
<p>Impact on indigenous natural vegetation and fauna</p>	<p>Direct impacts: The impact will be limited to the substation development footprint as well as the short section of access road required.</p>	<p>Medium - Low</p>	<p>Keep areas affected by construction activities to a minimum.</p> <p>Remove topsoil and redistribute that not used in rehabilitation activities to mimic the micro-topography of the original vegetation to stop erosion.</p> <p>Remove all succulent and bulbous plants directly affected by the proposed development, and replant onto the redistributed topsoil.</p> <p>Prevent leakage of oil or other chemicals or pollutants.</p> <p>Monitor the establishment of alien invasive species and remove as soon as detected, whenever possible before regenerative material can be formed.</p> <p>Align the design to avoid pylon positions and road placement on slopes steeper than 20°.</p> <p>Place pylons as far as possible out of the drainage lines and their embankments.</p> <p>Do not use the drainage lines or their banks as access points for construction activities.</p> <p>After decommissioning, remove all foreign material, rip to loosen topsoil, aim to recreate a high surface roughness resembling the initial vegetation, and undertake active re-vegetation.</p>
	<p>Indirect impacts: Impacts on vegetation</p>	<p>Low</p>	<p>Avoid or minimise clearance of natural vegetation</p>

Activity	Impact summary	Significance	Proposed mitigation
	outside of substation development area		
	<p>Cumulative impacts: From a cumulative perspective loss of vegetation will occur, causing the impacts of the activity to be greater.</p>	Low-Medium	Minimise area of disturbance as far as possible.
Impact on Protected Plants	<p>Direct impacts: Removal of protected plants identified within project site</p>	Low	A permit for the clearance and destruction of protected species must be obtained for the project.
	<p>Indirect impacts: Unintentional impact on protected plants outside of project footprint</p>	Low	Identify sensitive species within and around substation site prior to construction Avoid or minimise clearance of natural vegetation
	<p>Cumulative impacts: Impacts due to alien invasions and damage to watercourses may possibly cause damage to habitats where protected trees could grow. This may exacerbate this impact.</p>	Low	Limit disturbance of vegetation as far as possible.
Impact as a result of soil loss, erosion and degradation	<p>Direct impacts: Loss of topsoil due to poor construction practices</p>	Low	<ul style="list-style-type: none"> » Minimise size of construction area » Keep to existing and new access road to be constructed, where practical, to minimise impacts on undisturbed ground and ensure erosion mitigation measures are to rehabilitate potential erosion. » Separate topsoil from subsoil during storage over the construction period » Reinforce portions of access routes that are prone to erosion, create

Activity	Impact summary	Significance	Proposed mitigation
			structures underneath where water would accumulate to allow free drainage where necessary, create structures or low banks to drain the access road rapidly during rainfall events, yet preventing erosion of the track and surrounding areas » Implement effective erosion control measures.
	Indirect impacts: Erosion of adjacent areas	Low	Rehabilitate soil and vegetation in construction areas as soon as construction is completed in an area.
	Cumulative impacts: The cumulative impact of soil degradation over the greater area is not significant as the area is largely untouched but could progress if not managed correctly	Low	Develop and implement soil erosion management plan and integrate with Wind Farm Facility Environmental Management Plan.
Impact on surface water resources	Direct impacts: Construction activities within regulated area of a watercourse or water resource	Low	Ensure that all substation construction activities including access roads avoid watercourses within the authorised Wind Farm Facility site
	Indirect impacts: Sedimentation of watercourses due to erosion	N/A	Compile a comprehensive storm-water management plan Rehabilitate any disturbed areas immediately to stabilise landscapes Water velocity must be reduced and diffused before water is returned to natural systems Erosion features must be immediately stabilised, if they develop.
	Cumulative impacts: Sedimentation of	N/A	None required.

Activity	Impact summary	Significance	Proposed mitigation
	watercourses due to erosion		
<i>Establishment/ spread of declared weeds and alien invader plants</i>	<i>Direct impacts:</i> There is a weak potential for alien plants to spread or become established following disturbance on site. The presence of a diffuse disturbance over a wide area could, however, lead to the spread of species that are present in the area.	Medium to high	Control any alien plant species on site immediately to avoid establishment of soil seed bank that would take decades to remove. Remove all alien plants in the project development area. Develop and implement an alien invasive management plan.
	<i>Indirect impacts:</i> Spread of alien invasives outside of site	Low	Establish an on-going monitoring programme to detect and quantify any aliens that may become established
	<i>Cumulative impacts:</i> Soil erosion, habitat loss and increased frequency of veld fires may lead to additional disturbance that will result in alien species becoming established.	Low	Develop and implement an alien invasive management plan.

Activity	Impact summary	Significance	Proposed mitigation
Impact on Birds	Direct impacts Noise generated by maintenance activities may disturb priority species, causing behavioural changes or otherwise affecting nesting success or foraging efficiency.	Low	No mitigation available.
	Indirect impacts Disturbance of species in the broader area.	Low	No mitigation available.
	Cumulative impacts: Minimal cumulative impacts	Low	No mitigation available.
Visual impact	Direct Visual disturbance in the landscape	Low to none as the existing and planned infrastructure (wind energy facilities and accompanied infrastructure)	Impacts relating to construction can be minimised through limiting vegetation clearance and appropriate management of activities on the site.

Activity	Impact summary	Significance	Proposed mitigation
		in the area will be more significant visually	
	Indirect	None	None
	Cumulative Impacts: The substation could potentially be seen by users of the R350 but the view will be distracted by the wind turbines in the area.	Low	None possible.
Social Impacts	Direct » Increase skills » Increased fire risk » Intrusions of strangers to the area	Low	» Social enhancement measures as per the Social and Economic Development and Enterprise Development commitments of the Iziduli Emoyeni Wind Farm Facility of which the on-site substation forms part. » The health and safety plan for the Iziduli Emoyeni Wind Farm Facility should be observed and all management measures in terms thereof observed for the construction of the substation
	Indirect impacts	N/A	N/A
	Cumulative Impacts	N/A	N/A
Alternative 2: N/A			
	<i>Direct impacts:</i>		
	<i>Indirect impacts:</i>		
	<i>Cumulative impacts:</i>		
	<i>Direct impacts:</i>		
	<i>Indirect impacts:</i>		

Activity	Impact summary	Significance	Proposed mitigation
	<i>Cumulative impacts:</i>		
Alternative 3: N/A			
	<i>Direct impacts:</i>		
	<i>Indirect impacts:</i>		
	<i>Cumulative impacts:</i>		
	<i>Direct impacts:</i>		
	<i>Indirect impacts:</i>		
	<i>Cumulative impacts:</i>		
No-go alternative:			
<p>This is the option of not constructing the proposed 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 Iziduli Emoyeni Wind Farm Facility cannot be connected to the electricity grid. This will result in a lost opportunity for renewable energy production within the country, and will impact on the local community i.e. loss in job opportunities creation, revenue benefits and other socio-economic benefits that would stimulate the local economic development.</p>			
Impacts on biodiversity	<p>Direct impacts: No development will imply that no vegetation will be cleared for development purposes. The project site is however not situated within a vegetation type of conservation concern.</p>	Low	None.

Activity	Impact summary	Significance	Proposed mitigation
	Indirect impacts: As vegetation will be avoided there will be no indirect impacts	None	None required
	Cumulative impacts: As vegetation clearing will be avoided there will be no cumulative impacts	N/A	None required
Impacts on the social environment	Direct impacts: Lost opportunity for renewable energy The no-development option would result in the lost opportunity for South Africa to produce more renewable energy. Impact on local community The No-Development option would also result in the loss of economic development benefits for both the local and the national community	High	Implement project to enable connection of the authorized Iziduli Emoyeni Wind Farm Facility to the national grid.
	Indirect impacts:	N/A	N/A
	Cumulative impacts:	N/A	N/A

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

2. ENVIRONMENTAL IMPACT STATEMENT

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

Alternative 1 (preferred alternative)

This section provides a summary of the environmental assessment and conclusions drawn for the proposed Iziduli Emoyeni on-site substation within the authorised Iziduli Emoyeni Wind Energy Facility. 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 from the previous assessments and studies in the area) and presents an informed conclusion regarding the environmental impacts associated with the proposed substation. The following conclusions can be drawn from the specialist studies undertaken within this Basic Assessment:

Ecology: The overall impact on ecological processes and functioning as a result of the construction and operation of the proposed substation is likely to be of low significance.

Avifauna: The proposed construction of the proposed substation will have a low impact on avifauna.

Heritage: The impacts to heritage resources by the proposed substation are considered to be of low significance as the heritage sites identified are located well outside of the proposed impact area.

Visual: The visual impact will be negligible in comparison to the authorised wind turbines, power lines and other associated infrastructure of the Wind Farm Facility's in the area.

Cumulative Impacts: Cumulative impacts from substations will result from the 3 authorised substations added to this proposed substation. As the area is already characterised by the wind energy facility (in respective phases), the cumulative impact is not expected to be significant.

Based on the findings of current and past studies undertaken, in terms of environmental constraints and opportunities identified through the various EIA and Basic Assessment processes, no environmental fatal flaws were identified to be associated with the wind energy facility or grid connection infrastructure.

The significance levels of the majority of identified negative impacts for all alternatives investigated can generally be reduced to acceptable levels by implementing the recommended mitigation measures. 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.

A number of issues requiring mitigation have been highlighted in the impact assessment (Appendix F). In response to these potential environmental impacts, environmental specifications for the management of these issues / impacts are detailed within the draft Environmental Management Programme (EMPr) included within Appendix G.

No Go Alternative (Compulsory)

Also referred to as the 'Do nothing' option, this refers to the applicant not constructing the proposed substation. In this scenario the potential positive and negative environmental and social impacts as described in this Basic Assessment Report will not occur and the status quo will be maintained.

Should the project not proceed, the land use of the area will change regardless, as the Iziduli Emoyeni Wind Farm Facility has already been authorised. Should the project not proceed, the authorised Wind Farm Facility will not be able to connect to the electricity grid which would result in a lost opportunity in terms of the contribution of renewable energy from this Wind Farm Facility for the country. The proposed substation is directly related to the technical viability of this Wind Farm. As a result the potential local and regional socio-economic and environmental benefits expected to be associated with the Authorised Iziduli Emoyeni Wind Farm Facility would not be realised.

- » **Increased energy security:** The current electricity crisis in South Africa highlights the significant role that renewable energy can play in terms of power supplementation. In addition, given that renewables can often be deployed in a decentralised manner close to consumers, they offer the opportunity for improving grid strength and supply quality, while reducing expensive transmission and distribution losses.
- » **Exploitation of South Africa's significant renewable energy resource:** At present, valuable national resources including biomass by-products, solar radiation and wind power remain largely unexploited. The use of these energy flows will strengthen energy security through the development of a diverse energy portfolio.

The no-development option will therefore not be beneficial to the landowner or the broader community.

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)?



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

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

There are no insurmountable environmental or social constraints that prevent the establishment of the proposed construction of the on-site substation for the authorised Iziduli Emoyeni Wind Farm Facility.

The construction of the proposed substation should be implemented according to the EMPr to adequately mitigate and manage potential impacts associated with construction activities. The construction activities and relevant rehabilitation of disturbed areas should be monitored against the approved EMPr, the Environmental Authorisation and all other relevant environmental legislation. Relevant conditions to be adhered to include:

Mitigation - Design, Construction, and Decommissioning Phases:

- » 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.
- » If concentrations of archaeological heritage material, human remains or fossil material are uncovered, all work must cease immediately and be reported to SAHRA so that systematic and professional investigation/ excavation can be undertaken.
- » Existing tracks/roads should be used as far as possible, and construction activities should be limited to the authorised site. Any new access roads required to be carefully planned and constructed to minimise the impacted area and prevent unnecessary degradation of soil.
- » Unnecessary disturbance to habitats should be strictly controlled and the footprint of the impact should be kept to a minimum.
- » An on-going monitoring programme should be established to detect, quantify and eradicate any alien species.
- » Restrict the activities and movement of construction workers and vehicles to the

immediate construction site and existing access roads.

- » Reduce and control construction dust through the use of approved dust suppression techniques as and when required (i.e. whenever dust becomes apparent).
- » Rehabilitate all disturbed areas, construction areas, roads, slopes etc. immediately after the completion of construction works. If necessary, an ecologist should be consulted to assist or give input into rehabilitation specifications.
- » Social benefits in terms of training, skills development and the use of local labour. These skills can be transferable to other employment sectors and would result in further sustainable benefits.
- » The Local Municipality and community representatives and affected and neighbouring property owners should be kept informed of the progress, decisions taken with regards to the development and construction schedules.

Mitigation - 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:

- » Maintain roads to forego erosion and to suppress dust.
- » Monitor rehabilitated areas, and implement remedial action as and when required.
- » Restrict maintenance activities to the substation.

Is an EMPr attached?

YES ✓

The EMPr must be attached as **Appendix G**.

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

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

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

Karen Jodas

NAME OF EAP

SIGNATURE OF EAP

DATE

SECTION F: APPENDICES

The following appendixes must be attached:

Appendix A: Maps

Appendix B: Photographs

Appendix C: Facility illustration(s)

Appendix D: Specialist reports

Appendix E: Public Participation

Appendix F: Impact Assessment

Appendix G: Environmental Management Programme (EMPr)

Appendix H: Details of EAP and expertise and CVs

Appendix I: Specialist's declaration of interest