ENVIRONMENTAL IMPACT ASSESSMENT PROCESS
AMENDED FINAL BASIC ASSESSMENT REPORT

PROPOSED WESLEY - PEDDIE 132KV POWER LINE FOR THE AUTHORISED UNCEDO LWETHU WIND ENERGY FACILITY, EASTERN CAPE PROVINCE

(DEA REF NO: 14/12/16/3/3/1/1174

Amended Final Basic Assessment
May 2015

Prepared for:

Just Energy (Pty) Ltd
10 Teubes Road
Kommetjie
7975

Prepared by:

Savannah Environmental Pty Ltd

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

environmental affairs

Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

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File Reference Number:	
Application Number:	
Date Received:	

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

Kindly note that:

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

11. Unless protected by law, all information in the report will become public information on receipt by the competent authority. Any interested and affected party should be provided with the information contained in this report on request, during any stage of the application process.
12. A competent authority may require that for specified types of activities in defined situations only parts of this report need to be completed.
13. Should a specialist report or report on a specialised process be submitted at any stage for any part of this application, the terms of reference for such report must also be submitted.
14. Two (2) colour hard copies and one (1) electronic copy of the report must be submitted to the competent authority.
15. Shape files (.shp) for maps must be included on the electronic copy of the report submitted to the competent authority.

PROJECT DETAILS

DEA Reference No.	:	14/12/16/3/3/1/1174
Title	:	Environmental Assessment Process Amended Final Basic Assessment Report for the Proposed Wesley – Peddie 132kV Power line for the authorised Uncedo Lwethu Wind Energy Facility, Eastern Cape Province
Authors	:	Geraldine Mogashane Tebogo Mapinga Karen Jodas
Applicant	:	Just Energy (Pty) Ltd
Report Status	:	Amended Final Basic Assessment Report
Submission date	:	May 2015

When used as a reference this report should be cited as: Savannah Environmental (2015) Amended Final Basic Assessment Report: Proposed Wesley – Peddie 132kV Power Line for the Authorised Wind Energy Facility, Eastern Cape Province

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SUMMARY AND OVERVIEW OF THE PROPOSED PROJECT

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

The current electricity imbalances in South Africa highlight the significant role that renewable energy can play in terms of power supplementation. Given that renewables can generally be deployed in a decentralised manner close to consumers, they offer the opportunity for improving grid strength and supply quality, while reducing expensive transmission and distribution losses. At present, South Africa is some way off from exploiting the diverse gains from renewable energy and from achieving a considerable market share in the industry. In order to meet the long-term goal of a sustainable renewable energy industry, a target of 17.8 GW of renewables by 2030 has been set by the Department of Energy (DoE) within the Integrated Resource Plan (IRP) 2010 and incorporated in the IPP Procurement Programme.

In 2010, a National Development Plan was drafted to address socio economic issues affecting development in South Africa. These issues were identified and placed under 18 different Strategic Integrated Projects (SIPs) to address the spatial imbalances of the past by addressing the needs of the poorer provinces and enabling socio-economic development. Amongst these is the green energy in support of South African Economy i.e. SIP 8. The SIP aims at supporting sustainable green energy initiatives on national scale through a diverse range of clean energy options as envisaged in the Integrated Resource Plan (IRP, 2010). The development of renewable energy projects is supported at a National government level.

1.1. Summary of the Proposed Development

Just Energy (Pty) Ltd was issued an environmental authorisation for the community based wind energy facility located on a site 5 km north-east of Wesley. The authorised project is phase 2 of the Riverbank Wind energy facility and it is referred to as Uncedo Lwethu Wind Energy Facility (DEA Ref no 12/12/20/1836/2). Through detailed feasibility studies it was determined that an alternative grid connection is required to connect the Uncedo Lwethu to the existing Eskom Peddie Substation, which is located approximately 30km north west of the authorised wind farm.

Just Energy is now proposing the construction of a 132kV overhead power line (approximately 30km in length) to connect the Uncedo Lwethu Wind Energy Facility to the Eskom Peddie Substation located within the Ngqushwa Local Municipality within the Eastern Cape Province. A new application for environmental authorisation has therefore been submitted and accepted by the Department of Environmental Affairs (DEA) (DEA Ref No: 14/12/16/3/3/1/1174) and pertains to the following infrastructure that triggers a Basic Assessment Process. The proposed development entails the following:

- The construction of the 132kV overhead power line; and
- Access roads for the construction of the power line.

Based on a pre-feasibility analysis undertaken by Arup and Thabile Engineering for Just Energy (dated July 2014, refer to Appendix J3), power line route alternatives (corridors approximately 300m in width) were considered for the proposed project. The following technical considerations were taken into account:

- Future development and obtaining current development plans from local municipality
- Land-use (agriculture /industrial) for present and future
- Technical crossings (road/rail/power lines/pipelines)
- Length of power line route which would be required to be constructed and number of bend points of the line
- Access roads for the construction of the power line.
- Number of properties to be traversed by each alternative (and the number of landowners with which negotiations would be required for a servitude)
- Cost versus benefit analysis for each option

Two alternative routes (corridors) were provided for further assessment through the Basic Assessment (refer to Figure 1). A corridor of 300m was assessed for the proposed power line route, within which the final servitude would be placed to avoid environmental sensitivities.

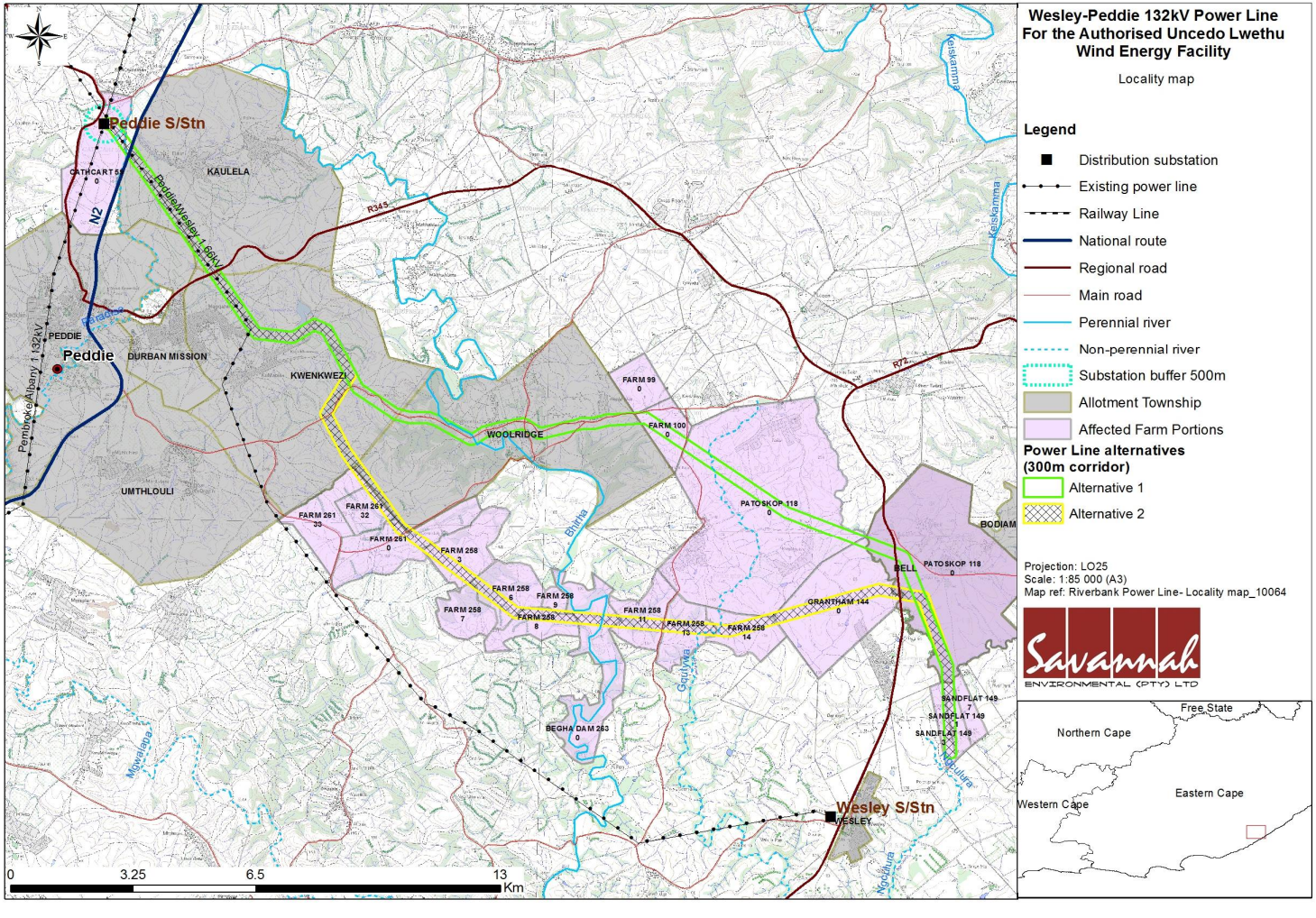

Figure 1: Locality map showing the proposed power line alternatives for the Uncedo Lwethu Wind Energy Facility. Refer to Appendix A for size A3 maps

1.2. Requirements for a Basic Assessment Process

In terms of the Environmental Impact Assessment (EIA) Regulations published in terms of Section 24(5) of the National Environmental Management Act (NEMA, Act No. 107 of 1998), Just Energy (Pty) Ltd requires authorisation for the construction and operation of the proposed power line. In terms of sections 24 and 24D of the National Environmental Management Act (No 107 of 1998), as read with the EIA Regulations of GN R543 and R546 a Basic Assessment process is triggered by the proposed project.

In terms of Section 24(1) of NEMA, the potential impact on the environment associated with these activities must be considered, investigated, assessed and reported on to the competent authority that has been charged by NEMA with the responsibility of granting environmental authorisations. As this is a proposed electricity generation project, the National Department of Environmental Affairs (DEA) is the competent authority[1] and the Eastern Cape Department of Economic Development and Environmental Affairs and Tourism (DEDEAT) will act as the commenting authority. An application for authorisation has been accepted by DEA for the proposed project and reference number **14/12/16/3/3/1/1174** was allocated to the project.

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

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

Just Energy (Pty) Ltd has appointed Savannah Environmental as the independent environmental consultant to undertake the required Basic Assessment process and to identify and assess all the potential environmental impacts associated with the proposed project and propose appropriate mitigation and management measures in an Environmental Management Programme (EMPr). Neither Savannah Environmental nor any of the specialist sub-consultants on this project are subsidiaries of or are affiliated to Just Energy (Pty) Ltd. In addition, Savannah Environmental does not have any interest in secondary developments that may arise out of the authorisation of the proposed project.

Savannah Environmental is a specialist environmental consulting company providing holistic environmental management services, including environmental impact assessment and planning to ensure compliance and evaluate the risk of development and the development and implementation of environmental management tools. Savannah Environmental benefits from the pooled resources, diverse skills and

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

experience in the environmental field held by its team that has been actively involved in undertaking environmental studies for a wide variety of projects throughout South Africa and neighbouring countries. Strong competencies have been developed in project management of environmental processes, as well as strategic environmental assessment and compliance advice, and the assessment of environmental impacts, the identification of environmental management solutions and mitigation/risk minimising measures.

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

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

» *Geraldine Mogashane* holds a National Diploma in Environmental Management. She has 7 months of experience consulting in the environmental field. Her key focus is on environmental impact assessments, public participation, and environmental management plans and programmes.

» *Tebogo Mapinga* is a Senior Environmental Consultant. She holds a BSc degree with over 7 years of experience in the environmental field in both public and private sectors. Her competencies lie in environmental impact assessments, compliance monitoring and public participation for small and large scale projects. She is currently in the process of completing her honours degree in Environmental Management.

» *Karen Jodas* is a registered Professional Natural Scientist and holds a Master of Science degree. She has 17 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.

» *Gabriele Wood* – the public participation consultant for this project, hold a BA Honours in Anthropology and has 6 years of experience in public participation and social consulting, including professional execution of public participation processes for a variety of projects and Environmental Impact Assessments (EIAs and BAs).

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

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

AMENDED FINAL BASIC ASSESSMENT REPORT

The Final Basic Assessment Report has been amended based on the request for clarification from the National Department of Environmental Affairs (DEA) dated the 27 November 2014. This Amended Basic Assessment Report provides clarification of all the issues raised by the DEA.

This Basic Assessment Report has been prepared by Savannah Environmental in order to assess the potential environmental impacts associated with the proposed 132kV power line for the authorised Uncedo Lwethu Wind Energy Facility, Eastern Cape Province. This process is being undertaken in support of an application for environmental authorisation to the National Department of Environmental Affairs (DEA).

Interested and Affected Parties (I&APs) have been notified in terms of Regulation 56(2) and 56(3)(g) of the EIA Regulations of June 2010, of the availability of the Amended Basic Assessment Report. The availability of the report for download (on the website- www.savannahsa.com) was communicated in writing to all registered interested and affected parties on the 15 May 2015. Comments on the Amended Final Basic Assessment Report have been requested to be submitted directly to the DEA, with a copy of these comments submitted to Savannah Environmental (refer to Appendix E2).

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BASIC ASSESSMENT PROCESS

The draft Basic Assessment Report was made available for a 30-day public review period from **24 April 2014 –27 May 2014**. The report was available for public review at the following locations:

» Ngqushwa Local Municipality (Erf 313 Main Road Peddie);
» www.savannahsa.com

The following public participation was conducted:

» A2 site notice were be placed at the start of the power line (Sandflat), the middle point and end of power line (Peddie Substation).
» A4 notices were be placed at the Ngqushwa Local Municipality office.
» Flyers were distributed amongst the Peddie and Sandflat local residents.
» A notification letter was 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.
» Adverts were be placed in Pondo News and Daily Dispatch newspapers.
» Meetings were held with representatives of the Ngqushwa Local Municipality and Sandflat landowners.

» A notification letter was sent out to registered I&APs, stakeholders and organs of state to inform them of the availability of the Draft Basic Assessment Report.

As required in terms of Regulation 56(3), the final Basic Assessment report was made available to registered interested and affected parties for comment and was also submitted to DEA, as the competent authority, for review and decision making.

This Amended Final Basic Assessment report addresses comments raised by the DEA on the Final Basic Assessment Report submitted in July 2014. In terms of Regulation 56(3), this the final Basic Assessment report has been made available to registered interested and affected parties for comment.

Table 1 below details the points of clarification from the DEA, and indicates how the information requested and/or amendments have been included in this Amended Final Basic Assessment Report. **The amendments have been underlined throughout this Amended FBAR.**

TABLE 1: POINTS OF CLARIFICATION REQUESTED BY DEA

No.	Points for clarity	Amendments made to address DEA requirements
a)	Application form » The EAP must amend the application form to include the specific applicability of Activity 11 and 18 of GN R.544, as the current application states that the construction of an access road "may be" required within watercourses. The EAP must be certain as to whether these activities will be required.	» Activities 11 and 18 of GN R.544 are triggered by the construction of access roads required for the construction of the power line. The application form has been amended and has been submitted to the DEA. Relevant project activities have been updated in this Amended FBAR. » Refer to Section D of this report for description of the environmental issues and potential impacts associated with listed activities applied for.
b)	Specialist Recommendations and Alternatives » The Avifaunal Sensitivity Area map (Appendix A) along the preferred power line route there are sensitive areas, which poses a threat to the natural environment, while alternative 2 appears to have the least sensitive areas than the preferred route. The EAP must provide a clear explanation as to why Alternative 2 was not assessed further. A full explanation must be provided for each alternative with a substantiated	» The avifauna sensitivity map indicating the sensitivities on Alternative 2 is included in Appendix A. » Alternative 2 runs through intact natural dense vegetation which supports a great diversity and density of birds. Alternative 2 is considered to be of high ecological sensitivity and unacceptable loss from an ecological impacts perspective would result from construction activities, and is

No.	Points for clarity	Amendments made to address DEA requirements
	motivation as to why the preferred alternative is considered as the most feasible and reasonable alternative for the proposed development.	therefore not considered a viable alternative for development. » Full descriptions of alternatives and motivation for the consideration of the alternatives has been addressed in Section A 2(a) of this report and the Ecological and Avifaunal Assessment in Appendix D.
c)	Pylon siting » The BAR and application form states that there is a "potential" construction of power line infrastructure or structures within 32 metres of a watercourse which triggers Activity 11 of GN R. 544. However, on page 89 of the Ecological environmental Management Plan states that "ensure that a buffer of at least 32m, preferably more, is maintained around all stream and drainage lines and their riparian vegetation to maintain the species diversity and buffering capacity of these plains surrounding riparian vegetation." This recommendation contradicts the activities that have been applied for. » The Department is concerned about the siting of pylons and roads in sensitive habitats. The EAP must provide clear explanation on how these pylons and roads will be located and constructed, especially in relation to listed activities 11 and 18.	» The description of the applicability of the listed activity has been amended in the application form and Section A 1b of this report. The activity is triggered by the construction of access road infrastructure. No power line infrastructure will be constructed within 32 m of a watercourse, as power line towers can be placed outside of these areas and the line can span the watercourse. Please refer to Section D of this report for description of the environmental issues and potential impacts associated with listed activity applied for. » It should be noted that the power line infrastructure (towers or pylons) will not be constructed within the 32 m from a watercourse, however, access roads would infringe on this 32 m buffer as access roads would be required during construction. » A clear explanation of how the pylons and roads will be located and constructed in relation to listed activities 11 and 18 has been provided in Technical reports in Appendix J4 of this report.
d)	Rerouting of the power line » The EAP must clarify on how the power line route near KwaHoyi will be re-routed to prevent damage to the Graveyards and the historic farmer homesteads site. » The EAP must also provide an explanation on how the power line will be re-routed at Wooldridge as the Heritage Study found it	» As part of the mitigation strategy, sections of the power line were realigned to avoid the historical homesteads at KwaNdaba. Additional bend points were introduced to avoid and keep the power line within safe distance from the historical homestead and graveyard within the KwaHoyi

No.	Points for clarity	Amendments made to address DEA requirements
	to be inappropriate for the power line to transverse straight through the settlement and it would also impact on the 'sense of place' of the graves.	area. » The section of the power line running through the Wooldridge area avoids the grave sites by ~100m and the clearance to dwellings is 10m, however the clearance to the dwellings will need to be carefully during the design phase. » This detail was included in the FBAR (dated July 2014) in Appendix J3 as part of the mitigation strategy. Refer to page 12-14 of the Feasibility Report in Appendix J3 as well as Section D of this report.

SECTION A: ACTIVITY INFORMATION

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

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

1. PROJECT DESCRIPTION

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

Just Energy (Pty) Ltd was issued with an environmental authorisation in October 2013 for the community based wind energy facility located 5 km north-east of Wesley. The project is phase 2 of the Riverbank Wind energy facility and it is referred to as Uncedo Lwethu Wind Energy Facility (DEA Ref no 12/12/20/1836/2). Through detailed feasibility studied it was determined that an alternative grid connection is required to connect the Uncedo Lwethu Wind Energy Facility to the existing Eskom Peddie Substation, located approximately 30km north west of the authorised wind farm.

Just Energy is proposing to construct a 132kV overhead power line (approximately 30km in length) to connect the Uncedo Lwethu Wind Energy Facility to the Eskom Peddie Substation and to construct access roads required for the construction of the power line located within the Ngqushwa Local Municipality in the Eastern Cape Province.

Based on a pre-feasibility analysis undertaken by Arup and Thabile Engineering for Just

Energy (dated August 2014, refer to Appendix J3), power line route alternatives were considered for the proposed project. The following technical considerations were taken into account:

- Future development and obtaining current development plans from local municipality
- Land-use (agriculture /industrial) for present and future
- Technical crossings (road/rail/power lines/pipelines)
- Length of power line route which would be required to be constructed and number of bend points of the line
- Access roads for the construction of the power line.
- Number of properties to be traversed by each alternative (and the number of landowners with which negotiations would be required for a servitude)
- Cost versus benefit analysis for each option

Two route alternatives were provided for further assessment through the Basic Assessment (refer to Figure 1). A corridor of 300m was assessed for the proposed power line route, within which the final servitude would be placed to avoid environmental sensitivities.

The two route alternative corridors for the construction of the proposed line are as follows:

- **Alternative 1 (preferred alternative):** The power line corridor starts on the farm Sandflat 149, within the authorised wind energy facility site, which is located approximately 5km north east of Wesley. From here it runs north for ~ 4.8km before it turns north-west near the small settlement of Tuwa and crosses the R72 towards KwaNdaba. The area is characterised by dense ground cover. From the R72 to Kwandaba the route traverses ploughed fields. The corridor includes at least two old homesteads to the north of KwaNdaba. From KwaNdaba, the route runs in a north-westerly direction towards Wooldridge over a series of hills and through the Gqutywa River valley. This section is characterised by dense thicket vegetation. Near Kwahoyi the route turns in a westerly direction and follows the gravel road along a ridge towards Wooldridge, passing small settlements adjacent to the gravel road. The corridor descends down into Bhirha River valley, and continues in a north westerly direction following the gravel road to the top of the plateau. Here the route departs from the gravel road towards the northern end of Feni where it turn sharply to the south west and continues between settlements and the Nkwekazi dam. The hill slopes are disturbed by soil erosion, borrow pits and contoured ploughed fields. From Feni the route turns north-west again towards the Peddie Substation and crosses the R345 and N2. The power line runs parallel to the existing 66kV line for approximately 6.5 km up to the Peddie Substation. This alternative was identified as the preferred alternative because of

its shorter distance, rendering it more financially feasible. This alternative is also the most technically feasible as the route is located close to or parallel to existing roads and power line servitudes.

Alternative 2: This alternative corridor starts on the farm Sandflat 149 which is located approximately 5km north east of Wesley. From here it runs north for about 4.8km before it turns north west near the small settlement of Tuwa and crosses the R72 towards KwaNdaba. At this point, the corridor diverges from Alternative 1 and runs in a westerly direction towards the south of Tuku. The route runs in a north-westerly direction through a series of high hills and the Gqutywa River valley. This section is characterised by dense thicket vegetation. This section of the route is 20km long and traverses multiple farms and the Bhirha River. The corridor rejoins the common alignment with Alternative 1 at the top of the plateau. Here the route departs from the gravel road towards the northern end of Feni where it turn sharply to the south west and continues between settlements and the Nkwekazi dam. The hill slopes are disturbed by soil erosion, borrow pits and contoured ploughed fields. From Feni the route turns north west again towards the Peddie Substation and crosses the R345 and N2. The power line runs parallel to the existing 66kV line for approximately 6.5 km up to the Peddie Substation. This route traverses areas characterised by natural dense vegetation.

Construction of a Power Line:

The Wesley - Peddie power line will be approximately 30km in length, and would be constructed within a servitude of approximately 36m in width. This would be within the 300m wide corridor assessed through this BAR. Power lines are constructed in the following simplified sequence:

Step 1: Survey the area;
Step 2: Final design and placement of the infrastructure;
Step 3: Vegetation clearance and construction of access roads (where required);
Step 4: Construction of foundations;
Step 5: Assembly and erection of infrastructure on site;
Step 6: Stringing of conductors;
Step 7: Rehabilitation of disturbed area and protection of erosion sensitive areas;
Step 8: Continued maintenance.

Construction of the proposed power line will take approximately 9 to 12 months to complete.

Power line towers (or pylons) are an average distance of 200m apart but can vary between 250m and 375m depending on the topography and terrain to be spanned. The self-supporting structure (suspension pole) is typically used along the straight sections of the power line, while the guyed intermediate or guyed suspension and

angle strain structures are used where there is a bend in the power line alignment. Construction of access roads to the tower positions and construction of tower foundations will be the most significant construction phase environmental impact requiring mitigation. The footprint of each tower will be approximately 10mx10m (100m²) depending on the final structure to be used (suspension pole or bend structure).

The servitude width for a 132kV power line is up to 36m. The minimum vertical clearance to buildings, poles and structures not forming part of the power line must be 3,8m, while the minimum vertical clearance between the conductors and the ground is 6,7m. The minimum distance between trees or shrubs and any bare phase conductor of a 132 kV power line must be 4m, allowing for the possible sideways movement and swing of both the power line conductor and the tree or shrub. On receipt of an approval of the final corridor by the environmental Authorities and after negotiations with landowners, the final definition of the centre line for the power line and co-ordinates of each bend in the line will be determined. Optimal tower sizes and positions will be identified and verified using a ground survey (in terms of the Environmental Management Programme (EMPr) requirements as well as the Construction Methodology statement in Appendix J4).

Operation Phase

The proposed power line will require routine maintenance work throughout the operation period. The power line servitude will be accessed using the R72 and R345 provincial roads and existing farm roads in the area and any access roads established during the construction phase. A servitude of 36m will be registered (a right of way) along the length of the power line. During this operation phase vegetation within the servitude will require management only if it impacts on the maintenance objectives of the power line.

Decommissioning Phase

The power line is expected to have a lifespan of more than 40 years (with maintenance) and the infrastructure would only be decommissioned once it has reached the end of its economic life or is no longer required. If economically feasible/desirable the decommissioning activities would comprise the disassembly of the individual components and removal from site. This phase would include the following decommissioning activities. The following decommissioning activities are expected to be undertaken:

a) Site Preparation

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

equipment.

b) Disassemble Components

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

c) Rehabilitation

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

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

Listed activity as described in GN R.544, 545 and 546	**Description of project activity**
GN 544, 18 June 2010, Activity 10 (i): The construction of facilities or infrastructure for the transmission and distribution of electricity - (i) outside urban areas or industrial complexes with a capacity of more than 33 but less than 275 kilovolts	***A 132 kV power line will be constructed (approximately 30km in length) outside an urban area between the Uncedo Lwethu Wind farm substation and the Eskom Peddie Substation.***
GN 544, 18 June 2010, Activity 11(xi): The construction of: (xi) infrastructure or structures covering 50 m^2 or more where such construction occurs within a watercourse or within 32 metres of a watercourse, measured from the edge of a watercourse, excluding where such construction will occur behind the development setback line.	***Access roads required for the construction and maintenance activities of the power line will be within 32 m of a watercourse. A low level crossing or culvert which does not impede flow or natural functioning of the non-perennial watercourse will be constructed.***
GN 544, 18 June 2010, Activity 18 (i) 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 from (i) a watercourse.	***The construction of access roads required for the construction and maintenance activities of the power line will require infilling or removal of 5m^3 or more of material into/from the watercourse for the placement of culverts.***
GN 546, 18 June 2010, Activity 4(a)ii(ee) The construction of a road wider than 4 metres with a reserve less than 13,5 metres in (a) Eastern Cape Province ii Outside urban areas, in (ee) Critical biodiversity areas as identified in	***The power line will require access roads wider than 4 metres outside of urban areas in a critical biodiversity area (CBA) as identified the Eastern Cape Biodiversity Conservation Plan. The larger study area is considered a CBA1***

Listed activity as described in GN R.544, 545 and 546	**Description of project activity**
systematic biodiversity plans adopted by the competent authority or bioregional plans.	***and CBA2 area.***
GN 546, 18 June 2010, Activity 12(b) The clearance of an area of 300 square metres or more of vegetation where 75% or more of the vegetative cover constitutes indigenous vegetation. (a) Within critical biodiversity areas identified in bioregional plans.	***The power line tower footprint will require the removal of vegetation of > 1.3ha, where 75% or more of the vegetative cover constitutes indigenous vegetation within a critical biodiversity area identified in the Eastern Cape Biodiversity Conservation Plan. Access roads will also require the removal of vegetation. The larger study area is considered a CBA1 and CBA2 area.***
GN 546, 18 June 2010, Activity 13 (a) The clearance of an area of 1 hectare or more of vegetation where 75% or more of the vegetative cover constitutes indigenous vegetation (a) Critical biodiversity areas and ecological support areas as identified in systematic biodiversity plans adopted by the competent authority	***The power line tower footprints will over the length of the line require the removal of vegetation of > 1.3ha, where 75% or more of the vegetative cover constitutes indigenous vegetation within a critical biodiversity area identified in the Eastern Cape Biodiversity Conservation Plan. Access roads will also require the removal of vegetation. The larger study area is considered a CBA1 and CBA2 area.***
GN 546, 18 June 2010 Activity 14(a)(i): The clearance of an area of 5 hectares or more of vegetation where 75% or more of the vegetative cover constitutes indigenous vegetation (a) In Eastern Cape: (i) All areas outside urban areas	***The development footprint of the power line and access roads will require clearing of more than 5ha of indigenous vegetation where 75% or more of the vegetative cover constitutes indigenous vegetation across the length of the power line. The power line is outside an urban area.***

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

Not applicable

Alternative 1		
Description	Lat (DDMMSS)	Long (DDMMSS)
Alternative 2		
Description	Lat (DDMMSS)	Long (DDMMSS)

Alternative 3		
Description	Lat (DDMMSS)	Long (DDMMSS)

In the case of linear activities:

» **Alternative 1 (preferred alternative):** The power line corridor starts on the farm Sandflat 149, within the authorised wind energy facility site, which is located approximately 5km north east of Wesley. From here it runs north for ~ 4.8km before it turns north-west near the small settlement of Tuwa and crosses the R72 towards KwaNdaba. The area is characterised by dense ground cover. From the R72 to Kwandaba the route traverses ploughed fields. The corridor includes at least two old homesteads to the north of KwaNdaba. From KwaNdaba, the route runs in a north-westerly direction towards Wooldridge over a series of hills and through the Gqutywa River valley. This section is characterised by dense thicket vegetation. Near Kwahoyi the route turns in a westerly direction and follows the gravel road along a ridge towards Wooldridge, passing small settlements adjacent to the gravel road. The corridor descends down into Bhirha River valley, and continuesin a north westerly direction following the gravel road to the top of the plateau. Here the route departs from the gravel road towards the northern end of Feni where it turn sharply to the south west and continues between settlements and the Nkwekazi dam. The hill slopes are disturbed by soil erosion, borrow pits and contoured ploughed fields. From Feni the route turns north-west again towards the Peddie Substation and crosses the R345 and N2. The power line runs parallel to the existing 66kV line for approximately 6.5 km up to the Peddie Substation. This alternative was identified as the preferred alternative because of its shorter distance, rendering it more financially feasible. This alternative is also the most technically feasible as the route is located close to or parallel to existing roads and power line servitudes.

» **Alternative 2:** This alternative corridor starts on the farm Sandflat 149 which is located approximately 5km north east of Wesley. From here it runs north for about 4.8km before it turns north-west near the small settlement of Tuwa and crosses the R72 towards KwaNdaba. At this point, the corridor diverges from Alternative 1 and runs in a westerly direction towards the south of Tuku. The route runs in a north-westerly direction through a series of high hills and the Gqutywa River valley. This section is characterised by dense thicket vegetation. This section of the route is 20km long and traverses multiple farms and the Bhirha River. The corridor re-joins the common alignment with Alternative 1 at the top of the plateau. Here the route departs from the gravel road towards the northern end of Feni where it turn sharply to the south west and continues between settlements and the Nkwekazi dam. The hill slopes are disturbed by soil erosion, borrow pits and contoured ploughed fields. From Feni the route turns north-west again towards the Peddie Substation and crosses the R345 and N2. The power line runs parallel to the existing 66kV line for

approximately 6.5 km up to the Peddie Substation. Alternative 2 runs through intact natural dense vegetation which supports a great diversity and density of birds. In addition, Alternative 2 is considered to be of high ecological sensitivity and unacceptable loss from an ecological impacts perspective would result from construction activities, and is therefore not considered a viable alternative for development. This route was considered to be fatally flawed from an ecological impacts perspective.

	Latitude (S):	**Longitude (E):**
Alternative A1-(preferred Alternative)		
• Starting point of the activity	33°18'10.67"S	27°22'1.75"E
• Middle/Additional point of the activity	33°13'26.77"S	27°13'9.24"E
• End point of the activity	32°44'22.82"S	25°55'23.12"E
Alternative A2		
• Starting point of the activity	33°18'10.67"S	27°22'1.75"E
• Middle/Additional point of the activity	33°16'22.31"S	27°15'55.53"E
• End point of the activity	32°44'22.82"S	25°55'23.12"E
Alternative A3 (if any)		
• Starting point of the activity		
• Middle/Additional point of the activity		
• End point of the activity		

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

A table has been attached as **Appendix J1** with co-ordinates for both of the proposed power line corridor alternatives.

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

b) Layout alternatives

There are no feasible and reasonable alternatives were identified for assessment within the power line corridor. The 300m wide corridor makes it possible to have deviations where it is deemed necessary.

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

The design of the power line is required to conform to Eskom's technical standards as it forms part of the national electricity supply network and must fit in with the existing network systems, technology and infrastructure. The choice of technology will be determined in consultation with Eskom. A single circuit structure would be constructed. A combination of both free standing lattice structures and mono-pole guyed structures would be required for the type of terrain the proposed power line will transverse (refer to appendix C). The power line must be constructed according to the authorised standards for a power line approved by Eskom Holdings SOC Ltd.

Alternative 1 (preferred alternative)
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)
.
Alternative 2
Alternative 3

e) No-go alternative

This is the option of not undertaking the proposed activities (i.e. the construction of the power line and associated infrastructure) and retaining the current status quo. This option will result in no impacts occurring on the biophysical environment as a result of to the proposed activities. The current land use for the proposed site is agriculture and livestock farming. Due to the linear nature of the proposed activity, it is likely to have an overall low impact on the current land use.

The proposed activities form part of the infrastructure required for the implementation of the approved Uncedo Lwethu Wind Energy Facility. In terms of the detailed planning for this facility, it has been determined that an alternative grid connection is required to connect the Uncedo Lwethu Wind Energy Facility to the Peddie Substation. The no-go option will result in the proposed power line not being constructed, and the wind farm project not being considered viable to construct. This would be a considerable loss to the Sandflat community, as the Uncedo Lwethu Wind Energy Facility is Phase 2 of the Riverbank Wind Energy Facility, which is one of the few true community-based renewable energy projects in South Africa.

Failure to add the proposed electricity to the national grid would most likely result in additional consumption of fossil fuels to achieve the same level of electrical generation at other locations in the country. This is because the electricity demand in South Africa is increasing and is placing increasing pressure on the country's existing power generation capacity. There is therefore a need for additional electricity generation options to be developed throughout the country.

The decision to expand South Africa's electricity generation capacity, and the mix of generation technologies is based on national policy and informed by on-going strategic planning undertaken by the national Department of Energy (DoE) and the National Energy Regulator of South Africa (NERSA). The support for renewable energy policy is guided by a rationale that South Africa has a very attractive range of renewable resources, particularly solar and wind and that renewable applications are in fact the least-cost energy service in many cases and more so when social and environmental costs are taken into account.

The generation of electricity from renewable energy in South Africa offers a number of socio-economic and environmental benefits. These benefits include:

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

» Resource saving: Conventional coal fired plants are major consumers of water during their requisite cooling processes. It is estimated that the achievement of the targets in the Renewable Energy White Paper will result in water savings of approximately 16.5 million kilolitres, where compared with wet cooled conventional power stations. This translates into revenue saving of R26.6 million. As an already water stressed nation, it is critical that South Africa engages in a variety of water conservation measures, particularly as the detrimental effects of climate change on water availability are experienced in the future.

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

» Pollution reduction: The release of by-products of fossil fuel burning for electricity generation has a particularly hazardous impact on human health, and contribute to ecosystem degradation.

» Climate friendly development: The uptake of renewable energy offers the opportunity to address energy needs in an environmentally responsible manner, contributing to the mitigation of climate change through the reduction of greenhouse gas emissions. South Africa as a nation is estimated to be responsible for 1% of global GHG emissions and is currently ranked 9th worldwide in terms of per capita CO2 emissions.

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

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

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

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

» Protecting the natural foundations of life for future generations: Actions to reduce our disproportionate carbon footprint can play an important part in ensuring our role in preventing dangerous anthropogenic climate change; thereby securing the natural foundations of life for generations to come.

At present, South Africa is some way off from exploiting the diverse gains from renewable energy and from achieving a considerable market share in the renewable energy industry. South Africa's electricity supply remains heavily dominated by coal based power generation, with the country's significant renewable energy potential largely untapped to date.

The support for renewable energy policy is guided by the need to address climate change as well as a rationale that South Africa has a very attractive range of renewable resources, particularly solar and wind and that renewable applications are in fact the least-cost energy service in many cases - and more so when social and environmental costs are taken into account. The development of renewable energy as part of South Africa's electricity generation mix is supported by National Policy through the Integrated Resource Plan (IRP) 2010.

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

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

3. PHYSICAL SIZE OF THE ACTIVITY

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

Alternative:	Size of the activity:
Alternative SS1[2] (technically preferred activity alternative)	m^2
Alternative SS22 (if any)	m^2
Alternative SS33 (if any)	m^2

or, for linear activities:

Alternative:	Length of the activity:
Alternative A1 (technically preferred activity alternative)	~32.6km
Alternative A2 (if any)	34.5km
Alternative A3 (if any)	m

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

Alternatives – Power line:	Size of servitude:
Alternative A1 (technically preferred activity alternative)	36m (300m wide corridor assessed)
Alternative A2 (if any)	36m (300m wide corridor assessed)
Alternative A3 (if any)	m^2

4. SITE ACCESS

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

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

Describe the type of access road planned:

The site can be accessed via R72 in Wesley and the R345 in Peddie. Existing gravel roads can be used to access the power line servitude. New access roads may however be required in some areas, depending on the final power line route alignment.

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

5. LOCALITY MAP

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

- an accurate indication of the project site position as well as the positions of the alternative sites, if any;
- indication of all the alternatives identified;
- closest town(s;)
- road access from all major roads in the area;
- road names or numbers of all major roads as well as the roads that provide access to the site(s);
- all roads within a 1km radius of the site or alternative sites; and
- a north arrow;
- a legend; and
- locality GPS co-ordinates (Indicate the position of the activity using the latitude and longitude of the centre point of the site for each alternative site. The co-ordinates should be in degrees and decimal minutes. The minutes should have at least three decimals to ensure adequate accuracy. The projection that must be used in all cases is the WGS84 spheroid in a national or local projection).

An A3 Locality Map is attached in **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.

An A3 Layout Map is attached in **Appendix A.**

7. SENSITIVITY MAP

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

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

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

An A3 Sensitivity Map is attached in **Appendix A.**

8. SITE PHOTOGRAPHS

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

Colour photographs for the start, middle and end of the power line are included within **Appendix B**.

9. FACILITY ILLUSTRATION

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

A facility illustration is attached within **Appendix C**.

10.ACTIVITY MOTIVATION

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

1. Is the activity permitted in terms of the property's existing land use rights?	**YES ✓**		Please explain
The activity is a linear infrastructure that will cross various properties. A servitude will be required to be registered across the properties.			
2. Will the activity be in line with the following?			
(a) Provincial Spatial Development Framework (PSDF)	**YES ✓**		Please explain
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 Wesley - Peddie power line will connect the authorised Uncedo Lwethu Wind Energy Facility to the Peddie Substation, facilitating the strengthening of electricity supply to the Eskom grid and the Peddie area.			
(b) Urban edge / Edge of Built environment for the area		**NO ✓**	Please explain
The proposed power line is located outside urban areas, approximately 5 km from the town of Wesley and 4 km from the town of Peddie. The proposed development corridors are outside the urban edge.			

(c) Integrated Development Plan (IDP) and Spatial Development Framework (SDF) of the Local Municipality (e.g. would the approval of this application compromise the integrity of the existing approved and credible municipal IDP and SDF?).		NO ✓	Please explain
The study area for the proposed power line falls within the Ngqushwa Local Municipality. Electricity, amongst other municipal services, is highlighted in the IDP as a priority issue warranting attention. The municipality is also investigating the use of alternative renewable energy as a way to combat electricity supply and backlogs. The project will not compromise the IDP objectives but will rather assist in reaching these targets as the power line will assist in supporting the local electricity supply through strengthening of power supply to the Peddie Substation.			
(d) Approved Structure Plan of the Municipality	**YES ✓**		Please explain
The municipality is aware of the Uncedo Lwethu Wind Energy Facility, and supported the original Riverbank Wind Farm application. The municipality aims at ensuring that citizens have access to basic services such as electricity and this project will address such issues in the local municipality as it will facilitate the connection of the Uncedo Lwethu Wind Energy Facility.			
(e) An Environmental Management Framework (EMF) adopted by the Department (e.g. Would the approval of this application compromise the integrity of the existing environmental management priorities for the area and if so, can it be justified in terms of sustainability considerations?)		**NO ✓**	Please explain
The Amathole District Municipality and Ngqushwa Local Municipality do not have EMFs. However the proposed site falls within a Critical Biodiversity Area CBA 1 and CBA 2. Care will be taken to minimise any impacts on the biodiversity that may arise from the development. The proposed project will not compromise the existing environmental management priorities.			
(f) Any other Plans (e.g. Guide Plan)		**NO ✓**	Please explain
None			

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)?		**NO✓**	Please explain
The main purpose of the power line is to connect the Uncedo Lwethu Wind Farm to the electricity grid. The current land use of the proposed site is agricultural and livestock farming. This project is not specifically considered within the existing approved SDF. However due to the linear nature of the activity, the existing land use can still be maintained.			
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.)		**NO✓**	Please explain
The main purpose of the power line is to connect the Uncedo Lwethu Wind Farm to the electricity grid. The proposed activity is not necessarily a direct societal priority for the community. However, the wind farm development will benefit the local community through job creation, skills development opportunities and training, which will in turn reduce poverty levels that the area is currently facing; and strengthen electricity supply for the area.			
5. Are the necessary services with adequate capacity currently available (at the time of application), or must additional capacity be created to cater for the development? (Confirmation by the relevant Municipality in this regard must be attached to the final Basic Assessment Report as Appendix I.)	**YES ✓**		Please explain
The Eskom grid infrastructure in the facility has the capacity to accommodate the power from Uncedo Lwethu Wind Energy Facility. The construction of the power line infrastructure will not place additional pressure on the local area or Municipality during construction or operational phase of the project.			

6. Is this development provided for in the infrastructure planning of the municipality, and if not what will the implication be on the infrastructure planning of the municipality (priority and placement of services and opportunity costs)? (Comment by the relevant Municipality in this regard must be attached to the final Basic Assessment Report as Appendix I.)	**YES ✓**		Please explain
The proposed project is to be developed by a private developer. It therefore does not fall within the infrastructure planning of the municipality. The construction of the power line infrastructure will not place additional pressure on the Municipality's infrastructure during construction or operation. The project will not have any implications for the municipality but will assist them in their infrastructural planning priorities through assistance with the provision of increased electricity capacity.			
7. Is this project part of a national programme to address an issue of national concern or importance?	**YES ✓**		Please explain
The current electricity imbalances in South Africa highlight the significant role that renewable energy can play in terms of power supplementation. Given that renewables can generally be deployed in a decentralised manner close to consumers, they offer the opportunity for improving grid strength and supply quality, while reducing expensive transmission and distribution losses. At present, South Africa is some way off from exploiting the diverse gains from renewable energy and from achieving a considerable market share in the industry. In order to meet the long-term goal of a sustainable renewable energy industry, a target of 17.8 GW of renewables by 2030 has been set by the Department of Energy (DoE) within the Integrated Resource Plan (IRP) 2010 and incorporated in the IPP Procurement Programme. This energy will be produced from various renewable energy technologies including wind energy facilities. In order to integrate the power generated at the Uncedo Lwethu Wind Energy facility into the electricity grid, the power line is required to be connected to the Peddie Substation.			
8. Do location factors favour this land use (associated with the activity applied for) at this place? (This relates to the contextualisation of the proposed land use on this site within its broader context.)	**YES ✓**		Please explain
The Uncedo Lwethu Wind Energy facility is an authorised facility. The location of this facility is therefore fixed. In terms of Eskom's requirements, the wind energy facility is required to connect to the Peddie Substation. The proposed power line corridors are considered to be the most feasible locations for this infrastructure, taking technical and environmental (social and biophysical) issues into consideration.			

9. Is the development the best practicable environmental option for this land/site?	**YES ✓**		Please explain
The power line in a linear development within a servitude of ~36m over a distance of ~30km. The land use for the extent of the line is mixed, including agriculture and livestock farming, as well as existing roads. The Uncedo Lwethu Wind Energy Facility is an authorised facility. The location of this facility is therefore fixed. In terms of Eskom's requirements, the wind energy facility is required to connect to the Peddie Substation. The proposed power line corridors are considered to be the most feasible locations for this infrastructure, taking technical and environmental (social and biophysical) issues into consideration. The assessment of impacts within this Basic Assessment conclude that the development of the 132kV power line within the corridor investigated will have medium to low environmental impacts.			
10. Will the benefits of the proposed land use/development outweigh the negative impacts of it?	**YES ✓**		Please explain
» The negative environmental impacts for the project include: * Clearing of natural vegetation for the proposed footprint area, increasing the potential for soil erosion and the long-term loss of natural vegetation. » Most of these impacts can be managed and mitigated as outlined in the Impact Assessment and Environmental Management Programme. » Positive impacts of the proposed project include: * Connection of the Uncedo Lwethu Wind Farm to the national grid, and providing the Sandflat community the opportunity for ownership of a viable renewable energy project. * Connection of the Uncedo Lwethu Wind Farm to the national grid, thereby facilitating the diversification of power generation technologies which comprise the country's power generation mix. * Stimulation of the local economy through the supply of a reliable electricity supply, which will assist in the generation of provision of services. *It is considered reasonable that the benefits of the proposed land use/development will outweigh the negative impacts.*			
11. Will the proposed land use/development set a precedent for similar activities in the area (local municipality)?		**NO ✓**	Please explain
The proposed power line is associated with an approved wind energy facility. Any other similar activities in the area would depend on the feasibility of developing additional wind energy facilities in this area (thus requiring power lines).			

12. Will any person's rights be negatively affected by the proposed activity/ies?		**NO ✓**	Please explain
The proposed corridors run close to rural settlements. Site notices have been placed close to those settlements to inform them of the project. The 300m corridor allows for appropriate final placement of the power line so as to not negatively affect persons' rights.			
13. Will the proposed activity/ies compromise the "urban edge" as defined by the local municipality?		**NO ✓**	Please explain
The proposed project is located approximately 5 km north east of the town of Wesley and 5km north east of the town of Peddie. The site is outside of the urban edge and will not impact on the urban edge or edge of built environment in any way.			
14. Will the proposed activity/ies contribute to any of the 17 Strategic Integrated Projects (SIPS)?		**NO**	Please explain
The proposed activity is part of the authorised Uncedo Lwethu Wind Energy Facility. Although the wind energy facility may, once a preferred bidder, contribute to SIP 8, the proposed activity on its own does not.			
15. What will the benefits be to society in general and to the local communities?			Please explain
The main purpose of the power lines is to connect the authorised Uncedo Lwethu Wind Energy Facility to the electricity grid. As the wind energy facility will need to be built and operated, this will create employment opportunities for members of local communities. The increased economic benefit to the local community will improve the sustainability of the area and reduce the unemployment rate. In addition, a community trust will be established during the operational phase of the wind energy facility in terms of the requirements of the Department of Energy. This will benefit the local community. Furthermore, the project has committed to fund socio economic development and enterprise development initiatives.			
16. Any other need and desirability considerations related to the proposed activity?			Please explain
The area is in need of infrastructure which will benefit the municipal economy. Strengthening of the Eskom grid is also considered to be beneficial.			
17. How does the project fit into the National Development Plan for 2030?			Please explain
One of the plans for National Development Plan for 2030 is the transition to low carbon energy through speeding up and expanding renewable energy. This project will fit into this vision since it aims on increasing electricity supply through carbon-free methods. The proposed project will facilitate the connection of wind energy facility to the electricity grid, which will assist in reaching the South Africa socio-economic development needs.			

18. Please describe how the general objectives of Integrated Environmental Management as set out in section 23 of NEMA have been taken into account.
The general objectives of Integrated Environmental Management have been taken into account for this Basic Assessment report by means of identifying, predicting and evaluating the actual and potential impacts on the environment, socio-economic conditions and cultural heritage component. The risks, consequences, alternatives as well as options for mitigation of activities have also been considered with a view to minimise negative impacts, maximise benefits, and promote compliance with the principles of environmental management.
19. Please describe how the principles of environmental management as set out in section 2 of NEMA have been taken into account.
The principles of NEMA have been considered in this assessment through compliance with the requirements of the relevant legislation in undertaking the assessment of potential impacts, as well as through the implementation of the principle of sustainable development where appropriate mitigation measures have been recommended for impacts which cannot be avoided. In addition, the successful implementation and appropriate management of this proposed project will aid in achieving the principle of minimisation of pollution and environmental degradation. This process has been undertaken in a transparent manner and all effort has been made to involve interested and affected parties, stakeholders and relevant Organs of State such that an informed decision regarding the project can be made by the Regulating Authority.

11.APPLICABLE LEGISLATION, POLICIES AND/OR GUIDELINES

List all legislation, policies and/or guidelines of any sphere of government that are applicable to the application as contemplated in the EIA regulations, if applicable:

Table 1.1: Applicable Legislation, Policies and/or Guidelines

Legislation	*Applicable Requirements*	*Relevant Authority*	*Compliance requirements*
	National Legislation		
National Environmental Management Act (Act No. 107 of 1998)	» NEMA requires, inter alia, that: ∗ Development must be socially, environmentally, and economically sustainable. ∗ Disturbance of ecosystems and loss of biological diversity are avoided, or, where they cannot be altogether avoided, are minimised and remedied. ∗ A risk-averse and cautious approach is applied, which takes into account the limits of current knowledge about the consequences of decisions and actions. » EIA Regulations have been promulgated in terms of Chapter 5. Activities which may not commence without an environmental authorisation are identified within these Regulations. » In terms of S24(1) of NEMA, the potential impact on the environment associated with these listed activities must be considered, investigated, assessed and reported on to the competent authority charged by NEMA with granting of the relevant	» National Department of Environmental Affairs » Eastern Cape DEDEAT	» The Final BA Report is to be submitted to the DEA for review and decision making. » The EC DEDEAT will act as the commenting authority.

Legislation	*Applicable Requirements*	*Relevant Authority*	*Compliance requirements*
	environmental authorisation. » In terms of GNR 543 of 18 June 2010, a Basic Assessment Process is required to be undertaken for the proposed project.		
National Environmental Management Act (Act No. 107 of 1998)	» A project proponent is required to consider a project holistically and to consider the cumulative effect of potential impacts. » 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 a project is avoided, stopped or minimised.	» National Department of Environmental Affairs	» While no permitting or licensing requirements arise directly, the holistic consideration of the potential impacts of the proposed project has found application in the BA process. » The implementation of mitigation measures are included as part of the Draft EMP and will continue to apply throughout the life cycle of the project.
National Environmental Management: Biodiversity Act (Act No. 10 of 2004)	» In terms of the Biodiversity Act, the developer has a responsibility for: * The conservation of endangered ecosystems and restriction of activities according to the categorisation of the area (not just by listed activity as specified in the EIA regulations). * The application of appropriate environmental management tools to ensure integrated environmental management of activities.	» National Department of Environmental Affairs » Eastern Cape DEDEAT	» 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. Should the applicant carry out any activities that endanger the listed species then a permit will have to be applied for.

Legislation	*Applicable Requirements*	*Relevant Authority*	*Compliance requirements*
	* Limit further loss of biodiversity and conserve endangered ecosystems. » In terms of S57, a person may not carry out a restricted activity involving a specimen of a listed threatened or protected species without a permit issued in terms of Chapter 4. In this regard the Minister of Environmental Affairs has published a list of critically endangered, endangered, vulnerable, and protected species in GNR 151 in Government Gazette 29657 of 23 February 2007 and the regulations associated therewith in GNR 152 in GG29657 of 23 February 2007, which came into effect on 1 June 2007. » In terms of S75, (1) The control and eradication of a listed invasive species must be carried out by means of methods that are appropriate for the species concerned and the environment in which it occurs. (2) Any action taken to control and eradicate a listed invasive species must be executed with caution and in a manner that may cause the least possible harm to biodiversity and damage to the environment. (3) The methods employed to control and		

Legislation	*Applicable Requirements*	*Relevant Authority*	*Compliance requirements*
	eradicate a listed invasive species must also be directed at the offspring, propagating material and re-growth of such invasive species in order to prevent such species from producing offspring, forming seed, regenerating, or re-establishing itself in any manner. » 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 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. » In terms of GNR 1477 of 2009: Draft National List of Threatened Ecosystems published under S52(1)(a) of the Act provides for the listing of threatened or protected ecosystems based on national criteria. The list of threatened terrestrial ecosystems supersedes the information regarding terrestrial ecosystem status in the National Spatial Biodiversity Assessment (2011).		

Legislation	*Applicable Requirements*	*Relevant Authority*	*Compliance requirements*
	» GNR1187 Amendment of Critically Endangered, Endangered, Vulnerable and Protected Species List published under S56(1)of the Act.		
National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008)	» The purpose of this Act is to reform the law regulating waste management in order to protect health and the environment by providing for the licensing and control of waste management activities. To set standards for waste management on the project » The Minister may by notice in the Gazette publish a list of waste management activities that have, or are likely to have, a detrimental effect on the environment. » In terms of the regulations published in terms of this Act (GN 921 of 29 November 2013), a Basic Assessment or Environmental Impact Assessment is required to be undertaken for identified listed activities. » Any person who stores waste must at least take steps, unless otherwise provided by this Act, to ensure that (a) The containers in which any waste is stored, are intact and not corroded or in any other way rendered unlit for the	» National Department of Environmental Affairs » Eastern Cape DEDEAT	» As no waste disposal site is to be associated with the proposed project, no permit is required in this regard. » Waste handling, storage and disposal during construction and operation is required to be undertaken in accordance with the requirements of this Act, as detailed in the EMPr. » The volumes of waste to be generated and stored on the site during construction and operation of the power line will not require a waste license (provided these remain below the prescribed thresholds).

Legislation	*Applicable Requirements*	*Relevant Authority*	*Compliance requirements*
	safe storage of waste; (b) Adequate measures are taken to prevent accidental spillage or leaking; (c) The waste cannot be blown away; (d) Nuisances such as odour, visual impacts and breeding of vectors do not arise; and (e) Pollution of the environment and harm to health are prevented.		
National Environmental Management: Air Quality Act (Act No. 39 of 2004)	» S18, S19 and S20 of the Act allow certain areas to be declared and managed as "priority areas" » Declaration of controlled emitters (Part 3 of Act) and controlled fuels (Part 4 of Act) with relevant emission standards » The Act provides that an air quality officer may require any person to submit an atmospheric impact report if there is reasonable suspicion that the person has failed to comply with the Act.	» National Department of Environmental Affairs » Eastern Cape DEDEAT	» While no permitting or licensing requirements arise from this legislation, this Act will find application during the construction phase of the project. it is expected that there will be short term dust generation and emissions from vehicles and machinery
National Water Act (Act No. 36 of 1998)	» Under S21 of the act, water uses must be licensed unless such water use falls into one of the categories listed in S22 of the Act or falls under the general authorisation. » In terms of S19, the project proponent must ensure that reasonable measures are taken throughout the	» National Department of Water Affairs » Provincial Department of Water Affairs	» A General Authorisation or a Water Use License would be required for river and/or wetland crossings.

Legislation	*Applicable Requirements*	*Relevant Authority*	*Compliance requirements*
	life cycle of this project to prevent and remedy the effects of pollution to water resources from occurring, continuing, or recurring.		
Environment Conservation Act (Act No. 73 of 1989)	» National Noise Control Regulations (GN R154 dated 10 January 1992)	» National Department of Environmental Affairs » Local Authorities	» There is no requirement for a noise permit in terms of the legislation. » Any noisy activities carried out during the construction phase that could present an intrusion impact to the local community should be limited to 6:00am to 6:00pm Monday to Friday and 13:00 on Saturday (excluding public holidays). » Should these specific activities need to be undertaken outside of these times, the surrounding communities will need to be notified and appropriate approval will be obtained from the DEA and the Local Municipality.
National Heritage Resources Act (Act No. 25 of 1999)	» S38 states that Heritage Impact Assessments (HIAs) are required for certain kinds of development including » The construction of a road, power line, pipeline, canal or other similar linear development or barrier exceeding 300 m in length; » Any development or other activity which will change the character of a site exceeding 5 000 m^2 in extent	» South African Heritage Resources Agency » EC Provincial Heritage Resources Authority	» A permit may be required should heritage sites be unearthed on site during the construction phase.

Legislation	*Applicable Requirements*	*Relevant Authority*	*Compliance requirements*
	» The relevant Heritage Authority must be notified of developments such as linear developments (i.e. roads and power lines), bridges exceeding 50 m, or any development or other activity which will change the character of a site exceeding 5 000 m^2; or the re-zoning of a site exceeding 10 000 m^2 in extent. This notification must be provided in the early stages of initiating that development, and details regarding the location, nature and extent of the proposed development must be provided. » Standalone HIAs are not required where an EIA is carried out as long as the EIA contains an adequate HIA component that fulfils the provisions of S38. In such cases only those components not addressed by the EIA should be covered by the heritage component.		
National Forests Act (Act No. 84 of 1998)	» In terms of S15(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	» Department of Agriculture, Forestry and Fisheries	» A permit would need to be obtained for any protected trees that may be affected.

Legislation	*Applicable Requirements*	*Relevant Authority*	*Compliance requirements*
	license granted by the Minister to an (applicant and subject to such period and conditions as may be stipulated". » GN 1042 provides a list of protected tree species.		
National Veld and Forest Fire Act (Act 101 of 1998)	» Provides requirements for veldfire prevention through firebreaks and required measures for fire-fighting. Chapter 4 places a duty on landowners to prepare and maintain firebreaks, and Chapter 5 places a duty on all landowners to acquire equipment and have available personnel to fight fires. » In terms of S12 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. » In terms of S13 the firebreak would need to be wide and long enough to have a reasonable chance of preventing the fire from spreading, not causing erosion, and is reasonably free of inflammable material. » In terms of S17, the applicant must have such equipment, protective clothing, and trained personnel for extinguishing fires.	» Department of Agriculture, Forestry and Fisheries	» While no permitting or licensing requirements arise from this legislation, this act will find application during the operational phase of the project in terms of fire prevention and management.
Hazardous Substances Act	» This Act regulates the control of	» Department of Health	» It is necessary to identify and list all the

Legislation	*Applicable Requirements*	*Relevant Authority*	*Compliance requirements*
(Act No. 15 of 1973)	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. » Group I and II: Any substance or mixture of a substance that might by reason of its toxic, corrosive etc., nature or because it generates pressure through decomposition, heat or other means, cause extreme risk of injury etc., can be declared to be Group I or Group II hazardous substance; » Group IV: any electronic product; » Group V: any radioactive material. » The use, conveyance, or storage of any hazardous substance (such as distillate fuel) is prohibited without an appropriate license being in force.		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.

Legislation	*Applicable Requirements*	*Relevant Authority*	*Compliance requirements*
	Provincial Legislation		
Nature Conservation Ordinance (Act No. 19 of 1974)	» Article 63 prohibits the picking of certain fauna (including cutting, chopping, taking, and gathering, uprooting, damaging, or destroying). » Schedule 1 and 2 list endangered and protected animals respectively » Schedule 3 lists endangered flora and Schedule 4 lists protected flora. » Articles 26 to 47 regulate the use of wild animals.	» Eastern cape DEDEAT	» Permitting or licensing requirements may arise from this legislation for the proposed activities to be undertaken for the proposed project.

12.WASTE, EFFLUENT, EMISSION AND NOISE MANAGEMENT

a) Solid waste management

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

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

Non-recyclable waste will be transported to the nearest registered waste disposal facility for appropriate disposal.

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

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

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

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

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

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

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

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

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

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

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

b) Liquid effluent

Will the activity produce effluent, other than normal sewage, that will be disposed of in a municipal sewage system? **NO ✓**

If YES, what estimated quantity will be produced per month? m^3

Will the activity produce any effluent that will be treated and/or disposed of on site? **NO ✓**

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

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

If YES, provide the particulars of the facility:

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

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

c) Emissions into the atmosphere

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

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

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

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

d) Waste permit

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

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

e) Generation of noise

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

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

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

Noise may be generated by vehicular movement during construction, but would not exceed acceptable limits.

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,	Other	**The activity**

			dam or lake		**will not use water** ✓

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

14.ENERGY EFFICIENCY

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

Not applicable.

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

Not applicable.

SECTION B: SITE/AREA/PROPERTY DESCRIPTION

Important notes:

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

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

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

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

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

Property description/ physical address:

Province	Eastern Cape Province
District Municipality	Amathole District Municipality
Local Municipality	Ngqushwa Local Municipality
Ward Number(s)	Ward 6, 7 and 11
Farm Name & Portion number	Refer to Appendix J2
SG Code	Refer to Appendix J2

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. A full list is attached within Appendix J.

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

Agricultural land (cultivation and livestock farming).

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.

Power line

Alternative A1:

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

Alternative A2

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

Alternative A3 (if any):

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

2. LOCATION IN LANDSCAPE

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

Power Line Alternative A1 and Alternative A2

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

3. GROUNDWATER, SOIL AND GEOLOGICAL STABILITY OF THE SITE

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

Power line:

	Alternative A1:		**Alternative A2**		**Alternative S3 (if any):**	
Shallow water table (less than 1.5m deep)		**NO** ✓		**NO** ✓	YES	NO
Dolomite, sinkhole or doline areas		**NO** ✓		**NO** ✓	YES	NO

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

Power line Alternative A1 and Alternative A2

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✓ (access roads)**

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. A specialist was consulted and the specialist report is included in Appendix D.

5. SURFACE WATER

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

Power line Alternative A1 and Alternative A2

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

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

Both power line corridors run through a hilly landscape deeply incised by the Bhirha and Gqutywa Rivers (non-perennial drainage lines).

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:

Power line Alternative A1 and Alternative A2

Natural area ✓	Dam or reservoir	Polo fields
Low density residential	Hospital/medical centre	Filling station [H]
Medium density residential	School	Landfill or waste treatment site
High density residential	Tertiary education facility	Plantation
Informal residential[A]✓	Church	**Agriculture ✓**
Retail commercial & warehousing	Old age home	**River, stream or wetland ✓**
Light industrial	Sewage treatment plant[A]	Nature conservation area
Medium industrial [AN]	Train station or shunting yard [N]	Mountain, koppie or ridge
Heavy industrial [AN]	Railway line [N]	Museum
Power station	Major road (4 lanes or more) [N]	Historical building
Office/consulting room	Airport [N]	Protected Area

Military or police base/station/compound	Harbour	Graveyard
Spoil heap or slimes dam[A]	Sport facilities	Archaeological site
Quarry, sand or borrow pit	Golf course	Other:

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

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 fall within any of the following:

Alternative A1 and Alternative A2

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

If the answer to any of these questions was YES, a map indicating the affected area must be included in Appendix A.
A map indicating the Critical Biodiversity Area (as per provincial conservation plan) is 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:	**YES✓**	

Several sensitive heritage sites (Graves and homesteads) were identified within the assessed corridor.

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:

Apart from a few stone tool occurrences of mainly weathered Middle Stone Age stone tools observed along the power line route no other archaeological sites/materials of any significance were observed. However, it is possible that sites/materials are covered by soil and vegetation and may only be exposed during the construction of the power lines. The field investigation confirmed that the power line corridors traverse several historic farmer homestead sites, a graveyard and graves. A mitigation strategy has been development which will avoid the sensitive heritage sites that were identified were possible. A heritage sensitivity map is attached in Appendix A and a Heritage report is attached in Appendix D2

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 figures in the Ngqushwa Local Municipality are very high and according to Global Insights (2006) are calculated at 78%. The table below provides a comparative summary showing NLM as having the highest unemployment rate (more than 20% above the Eastern Cape average). The number of households earning less than R1500/month is estimated at 66.8% which is very high but comparable to the rest of the province.

	UNEMPLOYMENT	HH INCOME <R1500/month
Eastern Cape	53.5	65.2
Amathole	52.7	67.0
Mbashe	75.8	71.6
Mnquma	65.4	76.0
Great Kei	38.2	76.0
Amahlathi	59.4	73.5
Buffalo City	44.8	55.0
Ngqushwa	78.0	66.8
Nkonkobe	65.9	77.8
Nxuba	57.4	61.8

Source: Amathole Growth and Development Summit Socio-Economic Profile 2007

Economic profile of local municipality:

Agriculture and tourism sectors were identified in the 2006/07 IDP review as being a major sources of generating income in the Ngqushwa area. The municipality has some agricultural enterprises that need to be promoted under the auspices of local economic development. In keeping with provincial and district statistics, the majority (47%) of the population of Ngqushwa are employed in the public sector or community services, which is an unlikely base for employment expansion. The wholesale and retail trade, repairs, hostels and restaurants and the domestic sector are the second and third largest employers, accounting for 10% each.

Level of education:

The area is characterised by poor literacy levels and low education levels. 31% of the population has no schooling, while 29% have a primary school education or lower. 36% have some high school education with only 10% of this number completing matric. Only 4% of the population has post matric qualifications. Ngqushwa is served by 99 primary schools, 37 secondary schools and 86 pre-primary schools. .

b) Socio-economic value of the activity

What is the expected capital value of the activity on completion?	R40 million

What is the expected yearly income that will be generated by or as a result of the activity?	The power line will allow for the connection of the wind farm to the grid. The local community will benefit from socio-economic and enterprise development. No income will be earned from the power line directly, but rather from the power which is to transmit to the Eskom grid.	
Will the activity contribute to service infrastructure?	**YES ✓**	
Is the activity a public amenity?		**NO ✓**
How many new employment opportunities will be created in the development and construction phase of the activity/ies?	~20	
What is the expected value of the employment opportunities during the development and construction phase?	Unknown at this stage	
What percentage of this will accrue to previously disadvantaged individuals?	Unknown at this stage	
How many permanent new employment opportunities will be created during the operational phase of the activity?	Unknown at this stage	
What is the expected current value of the employment opportunities during the first 10 years?	N/A	
What percentage of this will accrue to previously disadvantaged individuals?	N/A	

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 map has been included in Appendix A.

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 high biodiversity and presence of many unique species, and the presence of drainage lines and high biodiversity contribute to the CBA (Critical Biodiversity Area) status of large parts of the study area. The larger study area is considered as a CBA 1 and CBA 2 areas, primarily due to its function as a catchment area to downstream estuaries.

b) Indicate and describe the habitat condition on site

Alternative A1:

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 ✓	**60%**	The study area is situated in the Albany Thicket Biome and Albany Centre of Endemism. The vegetation units covering the majority of the study area is Great Fish Thicket and Albany Coastal Belt with smaller areas of Bhisho Thornveld. The Albany Coastal Belt vegetation within the study area occurs on gently to moderately undulating plains from the Hamburg/Wesley area. It consists of dense short grasslands with occasional individual or denser stands of *Acacia karroo* trees or high shrubs. The sandier areas are dominated by pure grasslands, whereas thornveld becomes more prominent on more finely textured soils, especially further inland where this Coastal Belt gradually merges into the Great Fish Thicket vegetation (Mucina & Rutherford 2006).
Near Natural (includes areas with low to moderate level of alien invasive plants) ✓	**10%**	Small stands of *Eucalyptus*, *Agave* or other alien invasives are evident – possibly planted in the past for various purposes. Areas that no longer appear to be used for grazing and/or cultivation are being invaded by *Acacia karroo* and *Pteronia incana* and may eventually revert back to mixed shrublands.

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).
Degraded (includes areas heavily invaded by alien plants)	%	
Transformed ✓ (includes cultivation, dams, urban, plantation, roads, etc)	**30%**	The corridor consists of cultivated land, roads and informal settlements.

Alternative A2:

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 ✓	**75%**	The study area is situated in the Albany Thicket Biome and Albany Centre of Endemism. The vegetation units covering the majority of the study area is Great Fish Thicket and Albany Coastal Belt with smaller areas of Bhisho Thornveld. The Albany Coastal Belt vegetation within the study area occurs on gently to moderately undulating plains from the Hamburg/Wesley area. It consists of dense short grasslands with occasional individual or denser stands of *Acacia karroo* trees or high shrubs. The sandier areas are dominated by pure grasslands, whereas thornveld becomes more prominent on more finely textured soils, especially further inland where this Coastal Belt gradually merges into the Great Fish Thicket vegetation (Mucina & Rutherford 2006).
Near Natural (includes areas with low to moderate level of alien invasive plants) ✓	**15%**	Small stands of *Eucalyptus*, *Agave* or other alien invasives are evident – possibly planted in the past for various purposes. Areas that no longer appear to be used for grazing and/or cultivation are being invaded by *Acacia karroo* and *Pteronia incana* and may eventually revert back to mixed shrublands.
Degraded (includes areas heavily invaded by	%	

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).
alien plants)		
Transformed ✓ (includes cultivation, dams, urban, plantation, roads, etc)	**10%**	The corridor consists of cultivated land, internal access roads and informal settlements.

c) Complete the table to indicate:

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

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

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

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

The corridor alternatives are situated in the Albany Thicket Biome and Albany Centre of Endemism. The vegetation units covering the majority of the study area is Great Fish Thicket and Albany Coastal Belt, with smaller areas of Bhisho Thornveld. Vegetation along incised drainage lines and larger tributaries of the Paradise, Ngculura, Gqutywa and Bhirha Rivers have typically dense riparian thickets along their banks. The many drainage lines and high biodiversity, including many unique, endemic species, contribute to the CBA (Critical Biodiversity Area) status of large parts of the study area. Broadly defined, CBAs are areas that contain terrestrial and aquatic features in the landscape that are critical for conserving biodiversity and maintaining ecosystem functioning.

The Albany Coastal Belt vegetation within the study area occurs on gently to moderately undulating plains from the Hamburg/Wesley area. It consists of dense short grasslands with occasional individual or denser stands of *Acacia karroo* trees or high shrubs. The sandier areas are dominated by pure grasslands, whereas thornveld becomes more prominent on more finely textured soils, especially further inland where this Coastal Belt gradually merges into the Great Fish Thicket vegetation (Mucina & Rutherford 2006). The woody vegetation has a relatively high diversity of smaller trees and shrubs with occasional stands of tall *Erythrina caffra* trees. The herbaceous layer is dominated by *Brachiaria serrata, Cynodon dactylon, Eragrostis capensis, Eragrostis curvula, Setaria sphacelata* and *Themeda triandra*. Smaller herbs such as *Oxalis* species and *Centella asiatica* are common. In general there is also a high diversity of geophytes and other herbs present within the grass layer. Although only 1% of this vegetation type is currently conserved in private, local authority and provincial nature reserves, and about 17% has been transformed, overall the vegetation type is considered as least threatened. However, it is estimated that considerable expanses of this vegetation type may already be degraded (Mucina & Rutherford, 2006).

Further inland along the study area, starting in the larger river valleys and steeper slopes, vegetation of the Great Fish Thicket starts to dominate. This thicket is highly diverse and can consist of short, medium or tall thicket types, where both the woody tree and shrub- and the succulent components are well developed. A large number of the higher vegetation is spinescent. One of the most conspicuous species of this thicket within the study area is the tall *Euphorbia triangularis*. Thickets are generally dense, but species composition can vary immensely between localities, depending on specific soil, slope and land-use history characteristics. Within the tall thicket, a high diversity of low-growing herbs, succulents and geophytes can be found, of which several species are endemic. Likewise, several epiphytic species, including orchids and

creepers, using the taller vegetation as host or support to obtain access to sunlight can be found (Mucina & Rutherford, 2006).

Currently, Great Fish River Thicket is still regarded as least threatened, as not much has been altered and about 10% is protected in private and statutory reserves. Within the study area, however, larger areas have been transformed by past and present land-use practices, where larger expanses of thicket within the communal area have been cleared and transformed into either cultivated lands or grazing areas (Mucina & Rutherford, 2006).

The occurrence of Bhisho Thornveld is relatively limited within the study area, occurring mainly on undulating to moderately steep slopes, often along shallow incised drainage lines. In pristine condition, it is an open shrubland dominated by *Acacia karroo* with a dense grass understorey, dominated by *Themeda triandra, Digitaria* and *Sporobolus* species. Continuous overgrazing leads to the thickening of the *Acacia* layer, as well as an increase in woody dwarf shrubs (Mucina & Rutherford, 2006).

At present, this vegetation is still regarded as least threatened, although about 20% has already been transformed and approximately 2% is conserved in private and statutory game reserves (Mucina & Rutherford, 2006).

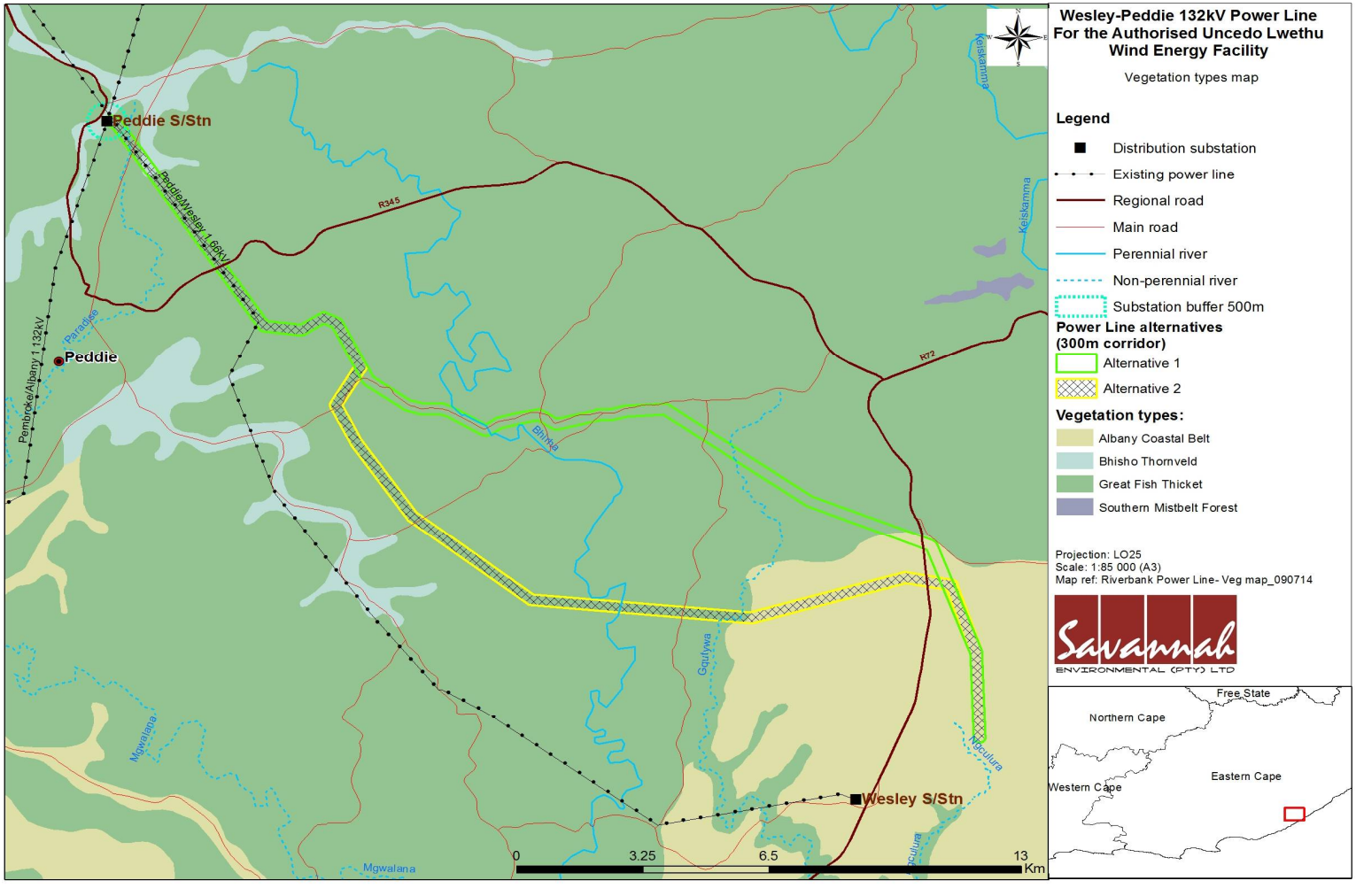

Figure 2: Map showing the vegetation types along the Wesley-Peddie power line corridor alternatives. Refer to Appendix A for size A3 map.

SECTION C: PUBLIC PARTICIPATION

1. ADVERTISEMENT AND NOTICE

Publication name	Pondo News	Daily Dispatch
Date published	09 May 2014	05 May 2014
Site notices:	**Latitude**	**Longitude**
Position 1:	33°13'32.16"S	27°14'2.18"E
Position 2:	33°17'35.95"S	27°20'59.24"E
Position 3:	33° 9'4.71"S	27° 7'16.09"E
Date placed	09 April 2014	

Proof of the placement of the relevant advertisements and notices is included 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.

The public consultation process has included the publishing of notices regarding the proposed project as well as the distribution of notification letters to identified I&APs. A meeting was held with the Nqgushwa Local Municipality and affected land owners on the 9th and 10th of April 2014. Minutes of meetings are attached in Appendix E6.

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

Title, Name and Surname	Affiliation/ key stakeholder status	Contact details (tel number or e-mail address)
Mr Owen Ndidi	Eastern Cape Environmental Network	
Philip Wilkinson	Wildlife and Environmental Society of Southern Africa	
Mr Sipho Justice Sithole	Telkom	
Mr Mcoseledi Ntando	Land owner	
Mr Zamile Mapuma	Land owner	
Ms Joyce Mapuma	Land owner	

Ms Ntombentsha Makhedama	Land owner	
Nene Songxaba	Eskom	
Dali Lukhozi	Eskom	
Eddie Leach	Eskom	

Proof that the key stakeholder received written notification of the proposed activities is included 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

Meetings were held with various members of the Sandflat community (landowners) and Ngquahwa Local Municipality of the 9th and 10th of April 2014. The minutes of the meetings are included in **Appendix E6**. All comments received during the public review period of the Draft Basic Assessment report, as well as responses provided are captured and recorded within the Comments and Response Report attached as **Appendix E7** in this report.

Summary of main issues raised by I&APs	Summary of response from EAP
The total length of the proposed power line	The preferred alternative is approximately 32 km.
Are you offering jobs	No, this is a notification of a basic assessment process. Interested and affected parties such as yourself can register on the database and receive information with regards to the project.
Please inform the client of Uncedo Lwethu wind farm that the SACAA has not issued any consent to this wind farm	The consent was issued prior to the Riverbank Wind Energy Facility project being separated to two phases. .
A way leave has to be submitted to SANRAL for consideration when a power line is erected overhead or parallel to national roads.	This response from SANRAL is acknowledged. The response has been submitted to the project developer to be considered during project implementation
An applicant must submit a non-consumptive water use license should he carry out any activities that might impact on watercourse crossings.	This response from DWA is acknowledged, all the required water use licenses will be applied once the proposed project receives environmental authorisation and the wind energy facility is selected as preferred bidder.

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.

Meetings were held with various members of the Sandflat community (landowners) and Ngquahwa Local Municipality of the 9th and 10th of April 2014. The minutes of the meetings are included in **Appendix E6.** Comments received have been attached within **Appendix E7** of this report.

5. AUTHORITY PARTICIPATION

Authorities and organs of state identified as key stakeholders:

Organs of State detail is attached within **Appendix E**, and not repeated here. Refer to **Appendix E**.

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

Proof that the Authorities and Organs of State received written notification of the proposed activities is included 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.

6. CONSULTATION WITH OTHER STAKEHOLDERS

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

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

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

Copies of any correspondence and all minutes of any meetings held are included in **Appendix E6.** The meetings held were as follows:

Date	Person	Organisation
09 April 2014	Mr Dumisani Mzili	Ngqushwa Local Municipality
	Mr S Mnweba	Ngqushwa Local Municipality
	Cllr Mapuma	Nnqushwa Local Municipality
	Cllr A Ndanda	Ngqushwa Local Municipality
	Mr R Mkontwana	Ngqushwa Local Municipality
	Mlwandile mzama	Peddie community
	Lindelwa Dywili	Peddie Community
	Ntombizakhe Mahala	Peddie Community
	Nomakaya Nikani	Peddie Community
	Ntombizanele Zake	Peddie Community
10 April 2014	Mr L. Mapuma	Sandflat 149 community
	Mr Z. Mapuma	Sandflat 149 community
	Mr N. Ntando	Sandflat 149 community
	Ms N Makhedama	Sandflat 149 community

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.

» 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

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

- Construction of the 132kV power line (assessment of a 300m wide corridor); and
- Construction of associated infrastructure such as access roads, a temporary laydown area, etc.

The extent of the infrastructure required is as follows:

- 132kV power line (36m wide servitude and up to 30 km in length);
- Temporary laydown area;
- Access road (up to 4m wide).

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

Provide a summary and anticipated significance of the potential direct, indirect and cumulative impacts that are likely to occur as a result of the planning and design phase, construction phase, operational phase, decommissioning and closure phase, including impacts relating

to the choice of site/activity/technology alternatives as well as the mitigation measures that may eliminate or reduce the potential impacts listed. This impact assessment must be applied to all the identified alternatives to the activities identified in Section A (2) of this report.

Power line: A1 and A2

Activity	Impact summary	Significance Before mitigation	Proposed mitigation
ALTERNATIVE 1			
PLANNING AND DESIGN PHASE			
Use of vehicles during field survey	***Direct impacts:***		
	» Roads and vegetation damage	Medium	Make use of existing access roads only
	Indirect impacts:		
	N/A	N/A	N/A
	Cumulative impacts:		
	N/A	N/A	N/A
Construction of power line - erection of power line towers/pylons	***Direct impacts:*** » Loss of natural vegetation, and » Loss of large trees and species of conservation concern.	Medium	Undertake pre-construction walk-through footprint investigations for protected flora and burrowing terrestrial vertebrates.
	Indirect impacts:		
	N/A	N/A	N/A
	Cumulative impacts:		
	N/A	N/A	N/A
	» Destruction of natural bird habitat on and near site; and » Increased Bird mortality.	Medium	Undertake pre-construction avifaunal walkthrough of the final power line route.

Activity	Impact summary	Significance Before mitigation	Proposed mitigation
	Indirect impacts:		
	N/A	N/A	N/A
	Cumulative impacts:		
	N/A	N/A	N/A
	Direct Impact The potential impact of the construction of the power line foundations and service roads on above and below ground sensitive heritage sites/materials.		Undertake pre-construction heritage walkthrough of the final power line route.
CONSTRUCTION PHASE			
Construction of access/construction tracks.	***Direct impacts:***		
	» loss of natural vegetation, » loss of large trees and species of conservation concern, » increase in runoff and erosion of dispersive soils	*Alternative 1:* High - pre mitigation Low - post mitigation *Alternative 2*: High- pre mitigation Medium- post mitigation	» Avoid: ∗ cutting down trees or cutting through larger bush clumps within grasslands ∗ loss of species of conservation concern by implementing a meticulous Search and Rescue program where especially all smaller geophytes and succulents, e.g. *Haworthia* and *Bergeranthus* species, will be removed and relocated to prevent them being crushed by moving vehicles and other construction activities ∗ All the necessary permits should be obtained before any plants are removes ∗ damage to natural vegetation by using existing roads and tracks as far as possible and aim to stay as close as possible to existing servitudes and already disturbed areas » Reinforce portions of access routes that are prone to

Activity	Impact summary	Significance Before mitigation	Proposed mitigation
			erosion, create structures underneath where water would accumulate to allow free drainage where necessary » Prevent leakage of oil or other chemicals » Monitor the establishment of alien invasive species and remove as soon as detected, before regenerative material can be formed » Rehabilitate all disturbed areas after construction and maintain a jeep-track for maintenance only in sections of the power line that cannot be accessed by any nearby road.
	Fauna will be impacted by the development as a result of construction activities and human presence at the site.	Medium	» Any fauna directly threatened by the construction activities should be removed to a safe location by the ECO or other suitably qualified person. » The person carrying out the removal and relocation of fauna must have a competency certificate received from the attendance of a reptile husbandry and handling courses. » The collection, hunting or harvesting of any plants or animals at the site should be strictly forbidden. Personnel should not be allowed to wander off the construction site. » If the site must be lit at night for security purposes, this should be done with low-UV type lights (such as most LEDs), which do not attract insects. » All hazardous materials should be stored in the appropriate manner to prevent contamination of the site. Any accidental chemical, fuel or oil spills that

Activity	Impact summary	Significance Before mitigation	Proposed mitigation
			occur at the site should be cleaned up in the appropriate manner as related to the nature of the spill. » Storage areas should be bunded. » No unauthorized persons should be allowed onto the site. » All construction vehicles should adhere to a low speed limit to avoid collisions with susceptible species such as snakes and tortoises.
	Disturbance and the construction activities are likely to result in habitat degradation, impact on biodiversity as well as deter fauna from moving through the area	Low	» Hardened surfaces should be kept to a minimum. » Roads should be as narrow as possible and as short as possible. A natural surface such as gravel would be preferable to a tarred or concrete road, except in very steep areas where it would be difficult to prevent erosion of natural surfaces. » Should a service road beneath the power line be required, this should be restricted to a track and a formal cleared road should not be necessary, especially through the rocky hills and drainage lines. » Vegetation should be allowed to remain alongside or encroach on the roads as much as possible. » Temporary lay-down areas should be in previously transformed areas or areas that will be used by the

Activity	Impact summary	Significance Before mitigation	Proposed mitigation
			development. » Regular monitoring for erosion during construction to ensure that no erosion problems have developing as result of the construction disturbance. » All erosion problems observed to be associated with the project should be rectified as soon as possible, using the appropriate erosion control structures and revegetation techniques
	Dust production and dust pollution of grazing plants	low	» Vehicles and equipment must be serviced regularly and maintained in a good operating condition. » Storage of contaminants must be limited to low quantities and done under strict industry standards. » There must be strict control over the safe usage of vehicles and equipment to minimise vehicle accidents and damage to vehicles by rocks and boulders which may cause spillages » All vehicles should be covered in tarpaulins
	The potential impact of the construction of the power line foundations and service roads on above and below ground sensitive heritage sites/materials.	Low	» As part of the mitigation strategy, sections of the power line must be realigned to avoid the historical homesteads at KwaNdaba. Additional bend points introduced would avoid and keep the power line within safe distance from the historical homestead and graveyard within the KwaHoyi area. » The section of the power line running through the Wooldridge area avoids the grave sites by ~100m and the clearance to dwellings is 10m, however the clearance to the dwellings will need to be carefully during the design phase.

Activity	Impact summary	Significance Before mitigation	Proposed mitigation
			» A pre-construction walkthrough of the final power line is recommended, specifically through the Woolridge area. » If any human remains (or any other concentrations of archaeological heritage material) are exposed during construction, all work must cease and it must be reported immediately to the nearest museum/archaeologist or to the Eastern Cape Provincial Heritage Resources Authority, so that a systematic and professional investigation can be undertaken. Sufficient time should be allowed to investigate and to remove/collect such material. Recommendations will follow from the investigation
	Creation of employment and business opportunities	Low	» Maximise the use of local labour for low – semi skilled jobs far as possible.
	Construction on sensitive visual receptors in close proximity to the proposed power line.	Low	» Ensure that vegetation is not unnecessarily removed during the construction period. » Reduce the construction period through careful logistical planning and productive implementation of resources. » Plan the placement of lay-down areas and temporary construction equipment camps in order to minimise vegetation clearing (i.e. in already disturbed areas) wherever possible. » Restrict the activities and movement of construction workers and vehicles to the immediate construction site and existing access roads.
	Indirect impacts:		

Activity	Impact summary	Significance Before mitigation	Proposed mitigation
	Irreplaceable loss of archaeological heritage resources.	Low	» N/A
	Creation of employment and business opportunities	Low	» The developer should implement a training and skills development programme for locals during the first 5 years of the operational phase. The aim of the programme should be to maximise the number of South African's and locals employed during the operational phase of the project.
	Disturbance of birds on site and in surrounding area	Medium	» Provide protection for sensitive habitats and any breeding sensitive species close to site » Conduct an avifaunal walkthrough be done as part of the site specific environmental management plan for this project
	Cumulative impacts:		
	» possible erosion of areas lower adjacent to construction and maintenance tracks, possible contamination of lower-lying drainage lines due to oil or other spillage, » possible spread and establishment of alien invasive species	Low-Medium	» Cumulative impacts of developments on population viability of species can be reduced significantly if new developments are kept as close as possible to existing developed areas or, where such is not possible, different sections of a development be kept as close together as possible.
	Irreplaceable loss of archaeological heritage resources.	Low	» N/A
	The development together with other project in close proximity serves to increase the potential for job creation.	Low	» N/A
» Construction of power line -	***Direct impacts:***		
	Removal of vegetation, denudation and	Medium - Pre	» AVOID:

Activity	Impact summary	Significance Before mitigation	Proposed mitigation
erection of power line towers/pylons	compaction of soils, creation of runoff zone loss of natural vegetation, loss of large trees and species of conservation concern, increase in runoff and erosion of dispersive soils	mitigation Low - post mitigation	* cutting down trees or cutting through larger bush clumps within grasslands * loss of species of conservation concern by implementing a meticulous Search and Rescue program where especially all smaller geophytes and succulents, e.g. Haworthia and Bergeranthus species, will be removed and relocated to prevent them being crushed by moving vehicles and other construction activities * damage to natural vegetation by using existing roads and tracks as far as possible and aim to stay as close as possible to existing servitudes and already disturbed areas » All prerequisite permits must be obtained before the disturbance or removal of plants » align the design to avoid pylon positions on slopes steeper than 17° » place pylons as far as possible out of the drainage lines and their associated riparian areas » prevent spillage of construction material, including lubricants, cement-based products, on and beyond the area affected » Monitor the establishment of alien invasive species and remove as soon as detected, before regenerative material can be formed » Rehabilitate all disturbed areas after construction
	Dust production and dust pollution of grazing plants	Low	» Apply dust control measures, e.g. water spraying or use of commercial dust suppressant.

Activity	Impact summary	Significance Before mitigation	Proposed mitigation
	Contamination and degradation of the soil due to spillages of oil, petrol, diesel and other contaminants used by vehicles and equipment on the site or stored on the site	Low	» Vehicles and equipment must be serviced regularly and maintained in a good operating condition. » Storage of contaminants must be limited to low quantities and done under strict industry standards. » There must be strict control over the safe usage of vehicles and equipment to minimise vehicle accidents and damage to vehicles by rocks and boulders which may cause spillages.
	The potential impact of the construction of the power line tower foundations and service roads on above and below ground historic farmer heritage sites, excluding graves	Medium –pre mitigation Low post mitigation	» If there are concentrations of archaeological heritage material, pylon positions must be place at between 20-50 metres on either side of the sites. The sites must be fenced-off to prevent construction vehicles from damaging the features. » If any human remains (or any other concentrations of historic farmer heritage material) are exposed during construction, all work must cease and it must be reported immediately to the nearest museum/archaeologist or to the Eastern Cape Provincial Heritage Resources Authority, so that a systematic and professional investigation can be undertaken. Sufficient time should be allowed to investigate and to remove/collect such material. Recommendations will follow from the investigation
	Indirect impacts:		
	Destruction of natural bird habitat on and near site	Medium	» Provide protection for sensitive habitats » Conduct avifaunal walk through to identify these areas
	Cumulative impacts:		
	Possible accelerated erosion of surrounding	low	» N/A

Activity	Impact summary	Significance Before mitigation	Proposed mitigation
	areas, no major cumulative impact on vegetation expected		
	Electrocution of birds whilst perched or roosting on pylons or towers	Medium	» Use bird friendly pole structures. The pole structures must be designed to accommodate large birds. » Conduct avifaunal walk through to identify any high risk areas » Eskom has guidelines and standards for the construction of 'bird friendly' pole and pylon structures. These should be adhered to. It is recommended that a monopole structure be used, with the standard Eskom Bird Perch installed on all pole tops to provide safe perching substrate for birds, well clear of all dangerous hardware. Large eagles and storks occur in the area and therefore pole structures must be designed to accommodate these large birds
	Collision of birds with overhead cables	Medium – pre mitigation Low - post mitigation	» Install anti bird collision line marking devices on high risk sections of power line » Conduct avifaunal walk through to identify these high risk areas » The high risk sections of this power line must be installed with suitable, Eskom approved anti bird collision line marking devices. The most common bird marking devices include Bird Flight Diverters and Bird Flappers, both of which are very effective, however in South Africa, Bird Flappers have proven to be more so. Either Eskom or Just Energy (whoever maintains the line) will be responsible for ensuring that these devices are in working order, and replacing them.

Activity	Impact summary	Significance Before mitigation	Proposed mitigation
OPERATION PHASE			
» Maintenance of power line ; » Use of vehicle during maintenance.	***Direct impacts:***		
	Maintenance or repair activities could impact intact vegetation and individuals of listed or protected plant species.	Low	» Site access should be controlled and only authorised staff and contractors should be allowed on-site. » Notice boards stating that fauna and flora may not be collected, harvested etc. should be placed at the entrances to the site. This information must be placed in both English and isiXhosa. » Any maintenance activities should avoid listed plant species and strive to keep the disturbance footprint as limited as possible. » No herbicides should be used and if vegetation clearing needs to take place, this should be done by hand. » Although it is not likely to be required, if any taller vegetation needs to be cut beneath the power line to comply with the Eskom requirements, this should be done by hand and protected species should be avoided where possible. Alternatively, it may be possible to reduce the height of some species by cutting the trees back and allowing them to resprout without destroying them. As the growth rate of important species is very slow, this would not need to be occur very often. Appropriate permits must be obtained before any protected species is pruned or destroyed.
	Damage to roads	Low	» All staff must make use of existing roads
	Potential visual impact on the intrinsic value and sense of place	Low	» Maintain the general appearance of the power line servitude as a whole.

Activity	Impact summary	Significance Before mitigation	Proposed mitigation
	Visual impact on residents of homesteads and settlements in close proximity to the proposed power line	Low	» Maintain the general appearance of the servitude as a whole.
	Indirect impacts		
	The presence of the power line, and associated infrastructure will impact fauna as a result of some permanent habitat loss as well as from increased levels of human activity likely to be associated with the operation and maintenance of the infrastructure.	Low	» All maintenance vehicles should adhere to a low speed limit to avoid collisions with susceptible species such as snakes and tortoises.
	The presence of the infrastructure and the alterations to the habitat will disrupt the connectivity of the landscape for some fauna which may avoid passing through the area and the residual disturbance from the construction phase will leave the site vulnerable to alien plant invasion and erosion.	Medium	» Hardened surfaces should be kept to a minimum » Any new roads required should be as narrow as possible and as short as possible. A natural surface such as gravel would be preferable to a tarred or concrete road. » Vegetation should be allowed to remain alongside or encroach on the roads as much as possible. » Regular monitoring for erosion post-construction to ensure that no erosion problems have developed as result of the past disturbance. » All erosion problems observed should be rectified as soon as possible, using the appropriate erosion control structures and re-vegetation techniques. » Regular monitoring for alien plant invasion, which is likely to occur in previously disturbed areas or in areas receiving runoff from the hardened surfaces of the infrastructure. » Appropriate measures should be implemented to

Activity	Impact summary	Significance Before mitigation	Proposed mitigation
			remove alien vegetation within the development footprint.
	Cumulative impacts:		
	All of the above impacts will also occur at a cumulative level, although collision of birds with the power line will be of most concern. The cumulative impact of the construction of new electrical and energy infrastructure in this area is not thought to be too significant as there is not an extensive network of power lines in this region and so the construction of the proposed development should not add cumulative impacts	Medium without mitigation Low with mitigation	» Install anti bird collision line marking devices on high risk sections of power line.
DECOMMISSIONING AND CLOSURE PHASE			
» Disassemble power line component according to regulatory requirements » Impacts associated with erosion and alien vegetation invasion. » Disturbed areas will be rehabilitated	***Direct impacts:***		
	The major social impacts associated with the decommissioning phase are linked to the loss of jobs, in addition, the social impacts associated with final decommissioned are likely to be limited due to the relatively small number of permanent employees affected. Impacts associated with erosion and alien vegetation invasion.	Low	» The potential impacts associated with the decommissioning phase can also be effectively managed with the implementation of a retrenchment and downscaling programme. With mitigation, the impacts are assessed to be Low (negative). » Avoid establishment of soil seed bank that would take decades to remove. Remove all alien plants in the project area.
	Indirect impacts:		
	Impacts associated with erosion and alien	Low	Establish an on-going monitoring programme to detect

Activity	Impact summary	Significance Before mitigation	Proposed mitigation
	vegetation invasion.		and quantify any aliens that may become established
	Cumulative impacts:		
	N/A	N/A	N/A

Activity	Impact summary	Significance Before mitigation	Proposed mitigation

ALTERNATIVE 2			
PLANNING AND DESIGN PHASE			
Use of vehicles during field survey	***Direct impacts:***		
	Roads and vegetation damage	Medium	Make use of existing access roads were feasible.
	Indirect impacts:		
	N/A	N/A	N/A
	Cumulative impacts:		
	N/A	N/A	N/A
Construction of power line - erection of power line towers/pylons	***Direct impacts:*** » Loss of natural vegetation, and » Loss of large trees and species of conservation concern.	Medium	Undertake pre-construction walk-through footprint investigations for protected flora and burrowing terrestrial vertebrates.
	Indirect impacts:		
	N/A	N/A	N/A

	Cumulative impacts:		
	N/A	N/A	N/A
	» Destruction of natural bird habitat on and near site; and » Increased Bird mortality.	Medium	Undertake pre-construction avifaunal walkthrough of the final power line route.
	Indirect impacts:		
	N/A	N/A	N/A
	Cumulative impacts:		
	N/A	N/A	N/A
	Direct Impact The potential impact of the construction of the power line foundations and service roads on above and below ground sensitive heritage sites/materials.		Undertake pre-construction heritage walkthrough of the final power line route.
CONSTRUCTION PHASE			
Construction of access/construction tracks	***Direct impacts:***		
	» loss of natural vegetation, » loss of large trees and species of conservation concern, » increase in runoff and erosion of dispersive soils	High - pre mitigation	» AVOID: ∗ cutting down trees or cutting through larger bush clumps within grasslands ∗ loss of species of conservation concern by implementing a meticulous Search and Rescue program where especially all smaller geophytes and succulents, e.g. *Haworthia* and *Bergeranthus* species, will be removed and relocated to prevent them being crushed by moving vehicles and other construction activities ∗ damage to natural vegetation by using existing roads and tracks as far as possible and aim to stay as close as possible to existing servitudes and already disturbed areas » Reinforce portions of access routes that are prone to

			erosion, create structures underneath where water would accumulate to allow free drainage where necessary » Prevent leakage of oil or other chemicals » Monitor the establishment of alien invasive species and remove as soon as detected, before regenerative material can be formed Rehabilitate all disturbed areas after construction and maintain a jeep-track for maintenance only in sections of the power line that cannot be accessed by any
	Fauna will be impacted by the development as a result of construction activities and human presence at the site.	Medium	» Any fauna directly threatened by the construction activities should be removed to a safe location by the ECO or other suitably qualified person. » The collection, hunting or harvesting of any plants or animals at the site should be strictly forbidden. Personnel should not be allowed to wander off the construction site. » If the site must be lit at night for security purposes, this should be done with low-UV type lights (such as most LEDs), which do not attract insects. » All hazardous materials should be stored in the appropriate manner to prevent contamination of the site. Any accidental chemical, fuel or oil spills that occur at the site should be cleaned up in the appropriate manner as related to the nature of the spill. » No unauthorized persons should be allowed onto the site. » All construction vehicles should adhere to a low speed limit to avoid collisions with susceptible species such as snakes and tortoises.

	Disturbance and the construction activities are likely to result in habitat degradation, impact on biodiversity as well as deter fauna from moving through the area	Low	» Hardened surfaces should be kept to a minimum » Roads should be as narrow as possible and as short as possible. A natural surface such as gravel would be preferable to a tarred or concrete road, except in very steep areas where it would be difficult to prevent erosion of natural surfaces. » Should a service road beneath the power line be required, this should be restricted to a track and a formal cleared road should not be necessary, especially through the rocky hills and drainage lines. » Vegetation should be allowed to remain alongside or encroach on the roads as much as possible. » Temporary lay-down areas should be in previously transformed areas or areas that will be used by the development. » Regular monitoring for erosion during construction to ensure that no erosion problems have developing as result of the construction disturbance. » All erosion problems observed to be associated with the project should be rectified as soon as possible, using the appropriate erosion control structures and re-vegetation techniques
	The potential impact of the construction of the power line foundations and service roads on above and below ground pre-colonial archaeological heritage sites/materials	Low	» If any human remains (or any other concentrations of archaeological heritage material) are exposed during construction, all work must cease and it must be reported immediately to the nearest museum/archaeologist or to the Eastern Cape Provincial Heritage Resources Authority, so that a systematic and professional investigation can be undertaken. Sufficient time should be allowed to investigate and to remove/collect such material.

			Recommendations will follow from the investigation
	Creation of employment and business opportunities	Low	» Maximise the use of local labour for low – semi skilled jobs far as possible.
	Construction on sensitive visual receptors in close proximity to the proposed power line.	Low	» Ensure that vegetation is not unnecessarily removed during the construction period. » Reduce the construction period through careful logistical planning and productive implementation of resources. » Plan the placement of lay-down areas and temporary construction equipment camps in order to minimise vegetation clearing (i.e. in already disturbed areas) wherever possible. » Restrict the activities and movement of construction workers and vehicles to the immediate construction site and existing access roads.
	Indirect impacts:		
	Irreplaceable loss of archaeological heritage resources.	Low	» N/A
	Creation of employment and business opportunities	Low	» The developer should implement a training and skills development programme for locals during the first 5 years of the operational phase. The aim of the programme should be to maximise the number of South African's and locals employed during the operational phase of the project.
	Cumulative impacts:		
	» possible erosion of areas lower adjacent to construction and maintenance tracks, possible contamination of lower-lying drainage lines due to oil or other spillage, » possible spread and establishment of alien	Low-Medium	» Cumulative impacts of developments on population viability of species can be reduced significantly if new developments are kept as close as possible to existing developed areas or, where such is not possible, different sections of a development be kept as close

	invasive species		together as possible.
	Irreplaceable loss of archaeological heritage resources.	Low	» N/A
	The development together with other project in close proximity serves to increase the potential for job creation.	Low	» N/A
» Construction of power line - erection of power line towers/pylons	***Direct impacts:***		
	Removal of vegetation, denudation and compaction of soils, creation of runoff zone loss of natural vegetation, loss of large trees and species of conservation concern, increase in runoff and erosion of dispersive soils	Medium Pre mitigation Low post mitigation	» AVOID: * cutting down trees or cutting through larger bush clumps within grasslands * loss of species of conservation concern by implementing a meticulous Search and Rescue program where especially all smaller geophytes and succulents, e.g. *Haworthia* and *Bergeranthus* species, will be removed and relocated to prevent them being crushed by moving vehicles and other construction activities * damage to natural vegetation by using existing roads and tracks as far as possible and aim to stay as close as possible to existing servitudes and already disturbed areas » align the design to avoid pylon positions on slopes steeper than 17° » place pylons as far as possible out of the drainage lines and their embankments » do not use the drainage lines or their banks as access points for construction activities » prevent spillage of construction material, including lubricants, cement-based products, on and beyond the area affected » Monitor the establishment of alien invasive species

			and remove as soon as detected, before regenerative material can be formed » Rehabilitate all disturbed areas after construction
	Dust production and dust pollution of grazing plants	Low	» Apply dust control measures, e.g. water spraying or use of commercial dust suppressant.
	Contamination and degradation of the soil due to spillages of oil, petrol, diesel and other contaminants used by vehicles and equipment on the site or stored on the site	Low	» Vehicles and equipment must be serviced regularly and maintained in a good operating condition. » Storage of contaminants must be limited to low quantities and done under strict industry standards. » There must be strict control over the safe usage of vehicles and equipment to minimise vehicle accidents and damage to vehicles by rocks and boulders which may cause spillages.
	The potential impact of the construction of the power line tower foundations and service roads on above and below ground historic farmer heritage sites, excluding graves	Medium –pre mitigation Low post mitigation	» If concentrations of archaeological heritage material Pylon positions must be place at between 20-50 metres on either side of the sites. The sites must be fenced-off to prevent construction vehicles from damaging the features. » If any human remains (or any other concentrations of historic farmer heritage material) are exposed during construction, all work must cease and it must be reported immediately to the nearest museum/archaeologist or to the Eastern Cape Provincial Heritage Resources Authority, so that a systematic and professional investigation can be undertaken. Sufficient time should be allowed to investigate and to remove/collect such material. Recommendations will follow from the investigation
	Indirect impacts:		
	Destruction of natural bird habitat on and near	Medium	» Provide protection for sensitive habitats

	site		» Conduct avifaunal walk through to identify these areas
	Cumulative impacts:		
	possible accelerated erosion of surrounding areas, no major cumulative impact on vegetation expected	Low	» N/A
OPERATION PHASE			
» Maintenance of power line ; » Use of vehicle during maintenance.	***Direct impacts:***		
	Maintenance or repair activities could impact intact vegetation and individuals of listed or protected plant species.	Low	» Site access should be controlled and only authorised staff and contractors should be allowed on-site. » Notice boards stating that fauna and flora may not be collected, harvested etc. should be placed at the entrances to the site. » Any maintenance activities should avoid listed plant species and strive to keep the disturbance footprint as limited as possible. » No herbicides should be used and if vegetation clearing needs to take place, this should be done by hand. » Although it is not likely to be required, if any taller vegetation needs to be cleared beneath the power line to comply with the Eskom requirements, this should be done by hand and protected species should be avoided where possible. Alternatively, it may be possible to reduce the height of some species by cutting the trees back and allowing them to resprout without destroying them. As the growth rate of important species is very slow, this would not need to be occur very often. Appropriate permits must be obtained before any protected species is pruned or destroyed.
	Electrocution of birds whilst perched or roosting	Medium	» Use bird friendly pole structures

	on pylons or towers		» Conduct avifaunal walk through to identify any high risk areas » Eskom has guidelines and standards for the construction of 'bird friendly' pole and pylon structures. These should be adhered to. It is recommended that a monopole structure be used, with the standard Eskom Bird Perch installed on all pole tops to provide safe perching substrate for birds, well clear of all dangerous hardware. Large eagles and storks occur in the area and therefore pole structures must be designed to accommodate these large birds
	Collision of birds with overhead cables	Medium – pre mitigation Low - post mitigation	» Install anti bird collision line marking devices on high risk sections of power line » Conduct avifaunal walk through to identify these high risk areas » The high risk sections of this power line must be installed with suitable, Eskom approved anti bird collision line marking devices. The most common bird marking devices include Bird Flight Diverters and Bird Flappers, both of which are very effective, however in South Africa, Bird Flappers have proven to be more so. Either Eskom or Just Energy (whoever maintains the line) will be responsible for ensuring that these devices are in working order, and replacing them if not
	Damage to roads	Low	» All staff must make use of existing roads
	Potential visual impact on the intrinsic value and sense of place	Low	» Maintain the general appearance of the power line servitude as a whole.
	Visual impact on residents of homesteads and settlements in close proximity to the proposed power line	Low	» Maintain the general appearance of the servitude as a whole.
	Indirect impacts		

	The presence of the power line, and associated infrastructure will impact fauna as a result of some permanent habitat loss as well as from increased levels of human activity likely to be associated with the operation and maintenance of the infrastructure.	Low	» The collection, hunting or harvesting of any plants or animals at the site should be strictly forbidden. » No unauthorised persons should be allowed onto the site. » All maintenance vehicles should adhere to a low speed limit to avoid collisions with susceptible species such as snakes and tortoises.
	The presence of the infrastructure and the alterations to the habitat will disrupt the connectivity of the landscape for some fauna which may avoid passing through the area and the residual disturbance from the construction phase will leave the site vulnerable to alien plant invasion and erosion.	Medium	» Hardened surfaces should be kept to a minimum » Any new roads required should be as narrow as possible and as short as possible. A natural surface such as gravel would be preferable to a tarred or concrete road. » Vegetation should be allowed to remain alongside or encroach on the roads as much as possible. » Regular monitoring for erosion post-construction to ensure that no erosion problems have developed as result of the past disturbance. » All erosion problems observed should be rectified as soon as possible, using the appropriate erosion control structures and re-vegetation techniques. » Regular monitoring for alien plant invasion, which is likely to occur in previously disturbed areas or in areas receiving runoff from the hardened surfaces of the infrastructure. » Appropriate measures should be implemented to remove alien vegetation within the development footprint.
	Disturbance of birds on site and in surrounding area	Medium	» Provide protection for sensitive habitats and any breeding sensitive species close to site » Conduct an avifaunal walkthrough be done as part of the site specific environmental management plan for

			this project.
	Cumulative impacts:		
	All of the above impacts will also occur at a cumulative level, although collision of birds with the power line will be of most concern. The cumulative impact of the construction of new electrical and energy infrastructure in this area is not thought to be too significant as there is not an extensive network of power lines in this region and so the construction of the proposed development should not add cumulative impacts	Medium without mitigation Low with mitigation	» Install anti bird collision line marking devices on high risk sections of power line.
DECOMMISSIONING AND CLOSURE PHASE			
» Disassemble power line component according to regulatory requirements » Impacts associated with erosion and alien vegetation invasion. » Disturbed areas will be rehabilitated	***Direct impacts:***		
	The major social impacts associated with the decommissioning phase are linked to the loss of jobs, in addition, the social impacts associated with final decommissioned are likely to be limited due to the relatively small number of permanent employees affected. Impacts associated with erosion and alien vegetation invasion.	Low	» The potential impacts associated with the decommissioning phase can also be effectively managed with the implementation of a retrenchment and downscaling programme. With mitigation, the impacts are assessed to be Low (negative). » Avoid establishment of soil seed bank that would take decades to remove. Remove all alien plants in the project area.
	Indirect impacts:		
	Impacts associated with erosion and alien vegetation invasion.	Low	Establish an on-going monitoring programme to detect and quantify any aliens that may become established
	Cumulative impacts:		
	N/A	N/A	N/A

NO-GO Option

This is the option of not undertaking the proposed activities (construction of the power line) and retaining the current status quo of the site. This option will result in limited or no impacts occurring on the biophysical environment due to the proposed activities. However, If the project does not proceed, there will still be a need for alternative energy projects to supplement the current power requirements of the country. There will be no opportunities for temporary and permanent employment created through this project. The no-go option is therefore not preferred.

PLANNING AND DESIGN PHASE			
	Direct impacts:		
	Lost opportunity for renewable energy. The no-go option would result in the power line not being constructed and as a result the Uncedo Lwethu Wind energy facility will not be connected to the national grid. This will result in the lost opportunity for South Africa to supplement its current energy needs with clean, renewable energy. *Impact on local community* The no-go option would also result in the loss of the benefits to the local community and economy associated with the project development and creation of employment opportunity	Medium	Implement the project in order to strengthen the electricity grid
	Indirect impacts:		
	Continued impacts on climate change due to use of conventional power generation sources to meet the electricity demand in the country	Medium	Implement the project in order to strengthen the electricity grid
	Cumulative impacts:		

	Contributing to further unemployment and unsustainable ways to produce electricity	Medium	Implement construction of project in order to strengthen the electricity grid through renewable resource

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

» 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 (A1 (technically preferred) and A2)

In order to connect the Uncedo Lwethu Wind Energy Facility to the national electricity grid, Just Energy (Pty) Ltd is proposing the establishment of the Wesley - Peddie 132 kV power line to link the Uncedo Lwethu Wind Farm to the Eskom electricity grid via the existing Peddie Substation. Just Energy (Pty) Ltd is proposing the following essential infrastructure:

- The proposed construction of a 132 kV power Line from the Uncedo Lwethu Wind Energy Facility to the Peddie Substation.
- Access roads along the servitude for construction and operational purposes.

The environmental sensitivity map for the power line is depicted below in Figure 3. In summary, the following conclusions were drawn from the specialist studies undertaken (refer to Appendix D):

Ecology: Several protected and red-data species occur on the site. The loss of the majority of red data and other smaller species of conservation concern can be avoided either by carefully designing the proposed development to avoid some of the more sensitive habitats they occur in, minimise the actual footprint area or relocate the affected specimens.

Six different vegetation units were identified within the proposed corridors.
The lower stream Riparian Vegetation has a high sensitivity with several species (fauna and flora) restricted to particular habitats. This vegetation unit is more prominent along the lower reaches (i.e. closer to the coast) of larger streams, where there is permanent water present in the stream and soils are a bit sandier.

The drainage line Thickets has high sensitivity and a medium conservation value. Further inland in the study area, landscapes becomes strongly undulating, with many of the steeper slopes incised by drainage lines of various sizes and steepness. Drainage lines down steeper slopes generally are dominated by drier, more succulent thickets and are of ephemeral nature only.

The Semi Natural grassland has a low sensitivity. The still presence of smaller patches of higher shrubs and occasional low trees, together with occasional terracing to stop erosion, shows that these grasslands resulted from the clearing of either mixed shrublands or tall succulent thicket, depending on the specific locality.

Eragrostis – Helichrysum species grassland has a medium to low sensitivity. This vegetation is most prominent on the slightly undulating plains closer to the coast. Grasslands are low but relatively dense, with a notable and diverse forb component. .

The mixed shrublands have a medium to low sensitivity. This vegetation is relatively variable, often also forming a transition between grasslands and tall succulent thicket. In general it is found on the more gentle slopes and upper plateaus within the study region

The Tall succulent Thicket has a high sensitivity and new disturbance e should be avoided as far as possible. This vegetation is more typical of the unique Albany thicket

Servitudes have to be cleared of excess vegetation at regular intervals in order to allow access to the line for maintenance, to prevent vegetation from intruding into the legally prescribed clearance gap between the ground and the conductors and to minimise the risk of fire under the line which can result in electrical flashovers.

Any kind of clearing or disturbance to the thicket will have ecological impacts and consequences. For this reason, the grid connection with the shortest possible distance over this kind of thicket and natural terrain has been considered to be the preferred alignment. Alternative 1 runs through an area with an existing road network where the natural vegetation has been disturbed. Therefore, ***Alternative 1 is nominated as the preferred corridor***, as it impacts on ecology can be mitigated to an acceptable level, and also supports the consolidation of linear infrastructure (power line and road infrastructure) to a single corridor.

Avifauna: During the construction phase and on-going maintenance of power lines some habitat destruction and/or alteration inevitably takes place. This happens with the construction of access roads, and the clearing of servitudes. These activities can impact on birds breeding, foraging and roosting in or in close proximity of the servitude through modification of habitat. Alternative 1 runs through an existing road network where the natural vegetation has been disturbed. Alternative 2 runs through intact natural dense vegetation which supports a great diversity and density of birds. ***Alternative 1 is nominated as the preferred corridor*** as it impacts on avifauna can be mitigated to an acceptable level, and also supports the consolidation of linear infrastructure (power line and road infrastructure) to a single corridor.

Heritage: Construction of the power line tower foundations and service roads may impact on remains which are buried, but these impacts will be limited and restricted to the local area. The construction of the tower foundations will also only disturb small areas and the negative impact on possible pre-colonial archaeology heritage sites/materials may be relatively small. Other projects such as the construction of service roads will disturb larger areas and may expose sites/materials on a larger scale. In both cases further disturbances of sites/materials can be limited by mitigation. There is ***no preference*** regarding a preferred corridor.

As part of the mitigation strategy, sections of the power line were realigned to avoid the historical homesteads at KwaNdaba. Additional bend points were introduced to avoid and keep the power line within safe distance from the historical homestead and graveyard within the KwaHoyi area. The section of the power line running through the Wooldridge area avoids the grave sites by ~100m and the clearance to dwellings is 10m, however the clearance to the dwellings will need to be carefully during the design phase. This mitigation strategy would therefore render ***Alternative 1 as the preferred alternative*** from a heritage perspective (refer to page 12-14 of the Feasibility Report in Appendix J3).

The following conclusions have been drawn:

» **Ecology:** The development of the power line will result in vegetation loss and disturbances to fauna. The high biodiversity and presence of many unique species, and the numerous many drainage lines and high biodiversity contribute to the CBA (Critical Biodiversity Area) status of large parts of the study area. The impact on ecology is expected to be of **high significance in sensitive areas**. The majority of the impacts can be further **reduced to low significance with effective management of power line site**. For the plant species of special concern, it is recommended that these species are identified within the development footprint and rescued before construction commences. The transformation of land due to the construction of access roads to the tower positions along power line Alternative 1 will be limited due to the relatively short distance of the proposed power line from existing access roads.

» **Avifauna:** The proposed site has drainage lines which serve as flight paths for numerous bird species, as well as ridges where raptors often hunt, making use of updrafts. The most sensitive section of the planned route is in the central region, where natural vegetation is fairly intact and other environmental factors and the landscape culminate in a high bird diversity and density. The proposed power line will possibly affect populations of bird species in terms of collision and electrocution mortality risk, which can be reduced through appropriate and approved mitigation measures. Therefore, if no mitigation is implemented, the impacts on birds as a result of the 132kV power line may have a **medium significance**. With the implementation of mitigation measures, this impact can be **reduced to low**

significance. Responsible implementation of the required mitigation measures should therefore reduce impacts to sustainable levels.

» **Heritage:** Apart from a few occasional weathered Middle Stone Age stone tools observed along the power line route no other archaeological sites/materials of any significance were observed. However, it is possible that sites/materials are covered by soil and vegetation and may only be exposed during the construction of the power line. In general, the proposed power line is of **low** archaeological significance. The power line corridor traverses historic farmer homestead sites, a graveyard and graves. Although direct impacts on marked graves and graveyards are not expected, buffer zones of between 20m to 50m must be implemented to prevent any possible damage to them during construction work. The implementation of the mitigation strategy (refer to Appendix J3) will significantly reduce the impacts of the power line on the sensitive heritage structures.

» **Social and land use:** The power line will have a positive impact through the creation of employment and transfer of skills to the local people. It is not expected that the proposed infrastructure will significantly alter the outcome of the visual impacts associated with the Uncedo Lwethu Wind Farm and existing power lines. Social and visual impacts of the power line will be of a **low significance.**

The cumulative environmental impacts associated with the power line as well as the authorised wind energy facility are discussed below.

» **Cumulative impacts on Vegetation:** The power line forms part of a larger authorised wind energy facility and the development of this infrastructure would contribute to some extent towards cumulative habitat loss and transformation in the area. The overall impact of the power line on the broader landscape are expected to be of a **low significance.** As the habitat within the site is widely available in the area and there are no broad-scale processes that are likely to be significantly affected by the development.

» **Cumulative impacts on Avifauna:** The impact of the power line as per the avifauna impact assessment depicts the **cumulative impacts as medium**. The priority species that occur (or are likely to occur) at the proposed site all have large distribution ranges causing the cumulative impact to be localised and not regional, and therefore of **medium significance**.

» **Cumulative Impacts on Soils**: The soil present on the site is susceptible to erosion. The construction of the wind energy facility and power line can have an impact on soils due to losses through erosion. The potential cumulative impact on soils is rated as having a **low to medium significance** with the implementation of mitigation measures.

» **Heritage:** Construction of the power line tower foundations and service roads may impact on remains which are buried, but these impacts will be limited and restricted to the local area. Further disturbances of sites/materials can be limited by mitigation. Cumulative impacts on heritage resources would be **low.**

- **Visual**: The addition of the power line is not expected to add significantly to the impact associated with the wind energy. Therefore, the cumulative visual impacts will be **low.**
- **Social and land use:** The power line may have positive and negative social impacts. The development of the Uncedo Lwethu Wind Energy Facility and the associated power line will have a **positive and negative social impact of low significance.**

Through the implementation of the EMPr (refer Appendix G), it is expected that impacts expected to be associated with the construction and operation of the proposed power line can be mitigated to acceptable levels.

It is the conclusion of the Environmental Assessment Practitioner that the construction of the Wesley – Peddie 132kV power line within corridor **Alternative 1** is considered acceptable from an environmental perspective provided the recommended mitigation measures are implemented. Alternative 1 also supports the consolidation of linear infrastructure (power line and road infrastructure) to a single corridor. The transformation of land due to the construction of access roads to the tower positions along power line Alternative 1 will be limited due to the relatively short distance of the proposed power line from existing access roads. Based on the nature and extent of the proposed project, the potential impacts associated with the proposed power line can be mitigated to an acceptable level.

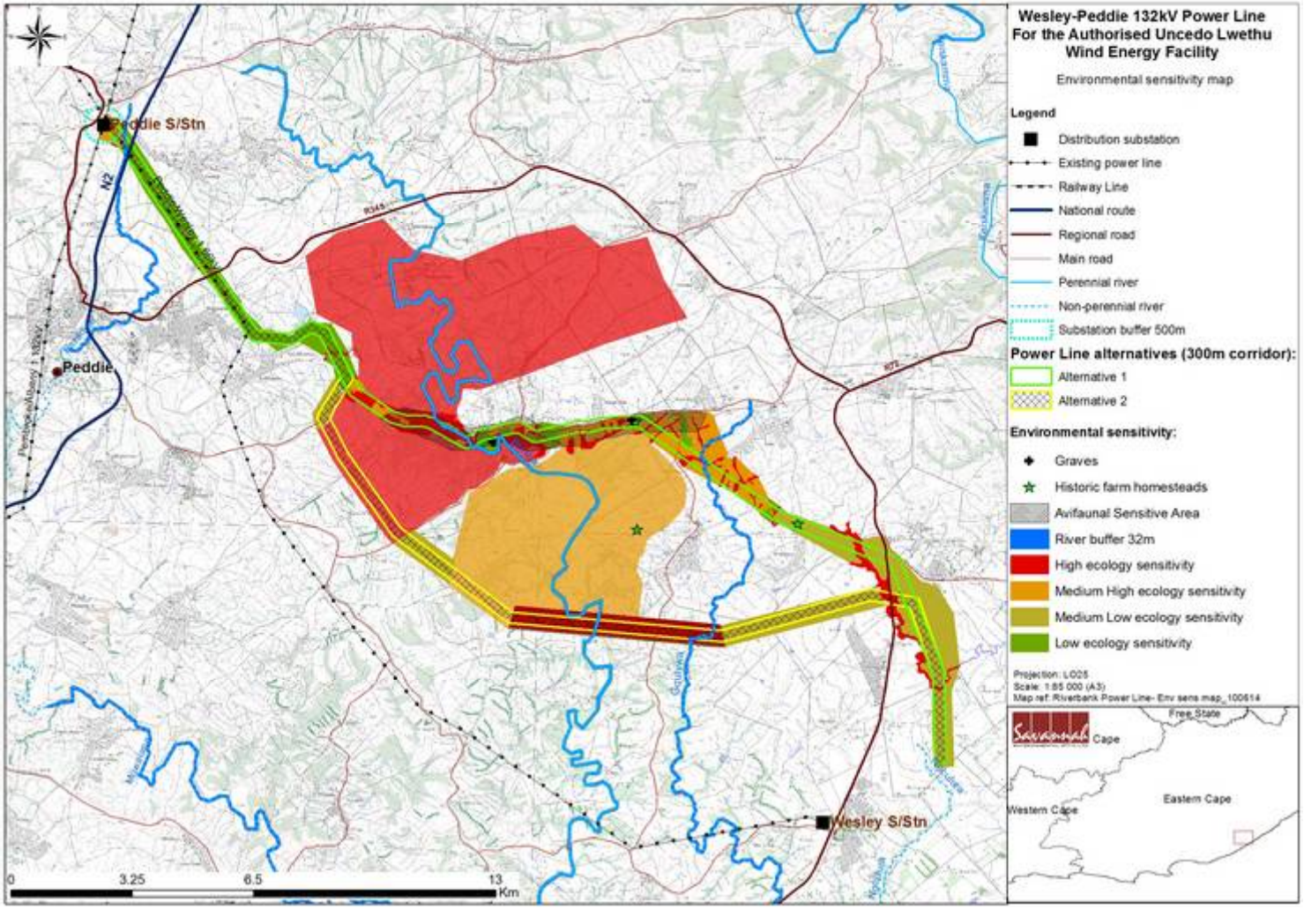

Figure 3: Map depicting the environmental sensitivity of the proposed corridor alternatives. Refer to Appendix A for A3 size maps.

Alternative C: N/A

Alternative C: N/A

No-go alternative (compulsory)

The no-go option will result in the proposed power line not being constructed. Which means the authorised Uncedo Lwethu Wind Energy facility will not connect to the national grid. Failure to add the electricity to the national grid would most likely result in additional consumption of fossil fuels to achieve the same level of electrical generation at other locations in the country. This is because the electricity demand in South Africa is increasing and is placing increasing pressure on the country's existing power generation capacity. There is therefore a need for additional electricity generation options to be developed throughout the country.

At present, South Africa is some way off from exploiting the diverse gains from renewable energy and from achieving a considerable market share in the renewable energy industry. South Africa's electricity supply remains heavily dominated by coal based power generation, with the country's significant renewable energy potential largely untapped to date.

The support for renewable energy policy is guided by the need to address climate change as well as a rationale that South Africa has a very attractive range of renewable resources, particularly solar and wind and that renewable applications are in fact the least-cost energy service in many cases - and more so when social and environmental costs are taken into account. The development of renewable energy as part of South Africa's electricity generation mix is supported by National Policy through the Integrated Resource Plan (IRP) 2010.

The 'do nothing' alternative will not assist the South African government in addressing climate change, in reaching the set targets for renewable energy as detailed in the IRP, nor will it assist in supplying the increasing electricity demand within the country. In addition the Gauteng Province power supply will be deprived of an opportunity to benefit from the additional generated power being evacuated directly into the Provinces' grid. This is considered to be a lost opportunity on a national scale. **The 'do nothing alternative is, therefore, not a preferred alternative**

SECTION E: RECOMMENDATION OF PRACTITIONER

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

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

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

There are no insurmountable environmental or social constraints identified through this Basic Assessment process that would prevent the construction of the proposed Wesley – Peddie power line with corridor Alternative 1. Alternative 1 corridor alignment is preferred due to its shorter length, alignment with existing roads and power line servitudes, and the environmental impacts from an ecological and avifauna perspective can be mitigated to an acceptable level.

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

Construction:

» All relevant practical and reasonable mitigation measures detailed within this report and EMPr must be implemented.
» The implementation of this EMPr for all life cycle phases of the proposed project is considered key in achieving the appropriate environmental management standards as detailed in this report.
» An independent Environmental Control Officer (ECO) should be appointed to monitor compliance with the specifications of the EMP for the duration of the construction period.
» A walk-through survey of the final power line tower positions should be undertaken by an ecologist, avifaunal and heritage specialists to determine any additional site-specific mitigation which should be implemented.
» All declared alien plants must be identified and managed in accordance with the Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983), the

implementation of a monitoring programme in this regard is recommended.

» Existing tracks/roads should be used as far as possible, and construction activities should be limited to the authorised site.
» During construction, unnecessary disturbance to habitats should be strictly controlled and the footprint of the impact should be kept to a minimum.
» Disturbed areas should be rehabilitated as soon as possible once construction is complete in an area.
» An avifauna walkthrough survey should be undertaken to determine the spans which should be protected through bird diverters. The high risk sections of this power line must be installed with suitable, Eskom approved anti bird collision line marking devices
» Contractors must be informed before construction starts on the possible types of heritage sites and cultural material they may encounter and the procedures to follow when they find sites.
» Develop and implement a search and rescue plan for protected species and species of special concern.
» Develop and implement a storm water management plan.
» Ensure bird-friendly tower designs are implemented to minimise the risk of electrocutions.
» Fit overhead power line with appropriate flappers to increase the visibility thereof to avifauna.
» The developer should obtain all necessary permits prior to the commencement of construction.

Operation Phase:

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

» Maintenance of erosion control measures.
» On-going monitoring of the development sites to detect and restrict the spread of alien plant species.
» Notes of electrocution and collision events must be sent to a qualified avifauna specialist for the recommendation of further mitigation measures if necessary.

Is an EMPr attached?	YES	

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

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

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

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

KAREN JODAS

_____

NAME OF EAP

_____ _____

SIGNATURE OF EAP DATE

SECTION F: APPENDICES

The following appendixes must be attached:

Appendix A: A3 Maps

Appendix B: Site Photographs

Appendix C: Facility Illustration(s)

Appendix D: Specialist(s)
- » *Appendix D1: Ecological and Avifaunal Impact Assessment Report*
- » *Appendix D2: Heritage Report*

Appendix E: Record of Public Involvement Process
- » *Appendix E1: Adverts and Notices*
- » *Appendix E2: Stakeholder Letter*
- » *Appendix E3: Comments Received*
- » *Appendix E4: Proof from Authorities:*
- » *Appendix E5: Registered I&APs*
- » *Appendix E6: Minutes of Meetings*
- » *Appendix E7: Comments and Response report*

Appendix F: Impact Assessment

Appendix G: Draft Environmental Management Programme

Appendix H: Details of EAP and Expertise

Appendix I: Specialist Declarations

Appendix J: Additional Information
- » *Appendix J1: Power line Coordinate*
- » *Appendix J2: Farm Portions*
- » *Appendix J3: Feasibility report*
- » *Appendix J4:Siting and construction of Pylons and the construction of Roads Technical reports*