Correspondence received from I&APs after the release of the Draft EIA Report

Proposed development of 300 MW Kap Vley Wind Energy Facility near Kleinzee, Northern Cape

Our Ref:

an agency of the
Department of Arts and Culture

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Enquiries: Natasha Higgitt
Tel: 021 462 4502
Email: nhiggitt@sahra.org.za
CaseID: 11654

Date: Thursday May 24, 2018
Page No: 1

Final Comment

In terms of Section 38(4), 38(8) of the National Heritage Resources Act (Act 25 of 1999)

Attention: Mr Corne van der Westhuizen
juwi Renewable Energies South Africa (Pty) Ltd

juwi Renewable Energies (Pty) Ltd (hereinafter referred to as "juwi") proposes to construct and operate a 300 MW Wind Energy Facility (WEF) and associated electrical infrastructure (subject to a separate Basic Assessment Process). The proposed Kap Vley WEF will be constructed on the following land: Remainder (RE) Kommagas Farm 200 Portion 5, RE Kap Vley Farm 315, Portion 1 of Kap Vley Farm 315, Portion 2 of Kap Vley Farm 315, Portion 3 of Kap Vley Farm 315, Portion 3 of Platvley Farm 314, RE Kourootjie Farm 316 and RE Gra'water Farm 331

The CSIR was appointed by juwi Renewable Energies (Pty) Ltd to conduct a Scoping and Environmental Impact Assessment (S&EIA) Process in support of an Environmental Authorisation Application for the Proposed 300MW Kap Vley Wind Energy Facility, near Kleinzee, Northern Cape Province.

A draft Scoping Report (DSR) has been completed in terms of the National Environmental Management Act, 1998 (NEMA) and the 2017 EIA Regulations. The proposed development will comprise the construction of 20-56 turbines, reinforced concrete foundations 20 m x 20 m, a crane platform 1.4 ha each, a collector substation, operations and maintenance buildings, site office, laydown area, on-site concrete batching plant, service roads, and a 132kv transmission line.

ASHA Consulting (Pty) Ltd has been appointed to conduct the Heritage Component of the S&EIA process.

Orton, J. 2017. Scoping Inputs from the Specialist: Heritage Impact Assessment. Scoping and Environmental Impact Assessment for the proposed Kap Vley Wind Energy Facility, Namakwaland Magisterial District, Northern Cape Province: Scoping Report.

The Heritage Scoping Report identified a total of 28 heritage resources which includes surface scatters of Stone Age lithics and associated material, two burial grounds, historical structures and associated material, historical werf, stone walled features and foundations. Sites KAP2017/001, KAP2017/003, KAP2017/005, GRW2017/001, KAP2017/006, PAN2017/004, PAN2017/005, KAP2017/009 were rated as low medium significance sites, KAP2017/002 (the site contains an old bees nest), KAP2017/004, KAP2017/008 rated as medium significance sites, PAN2017/002 were rated as medium-low significance sites, and PAN2017/001 and PAN2017/003 were rated as highly significant sites. The cultural landscape of the proposed development area

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has an intangible heritage component i.e. The White Dunes as referenced by historical travelers and in historical maps, the "coloured reserve" in which traditional stock farming and the collection of medicinal plants occurred, and the reference to local San gathering the honey from the bees nests to make honey beer (presumably site KAP2017/002).

Recommendations provided in the report include the following:

- Sites that require mitigation include KAP2017001-006, 008,009 and GRW2017/001;
- Sites to be cordoned off and protected include PAN2017/001-005 and KOM2017/001.

Pether, J. 2017. Brief Palaeontological Assessment (Desktop Study): Proposed Kap Vley Wind Energy Facility Namakwa District Municipality, Northern Cape.

The proposed development area is located within the Springbok Formation which does not contain fossils. The ridges and surficial coversands may contain alluvial deposits that may contain fossil material. The overall impact of the proposed development on palaeontological material is rated as low.

It is recommended that a requirement to be alert for possible fossils and buried archaeological material be included in the Environmental Management Programme (EMPr) for the Construction Phases of the Kap Vley WEF, with a Fossil Finds Procedure in place. In the event of the exposure of fossil bones all work at that spot must cease and the Environmental Control Office (ECO) must inform SAHRA and a professional palaeontologist, who will then decide if avoidance or mitigation are preferred. Only a professional palaeontologist may excavate uncovered fossils with a valid mitigation permit from SAHRA.

In an Interim Comment issue on the 01/12/2017, SAHRA noted the Heritage Scoping Report and would await the pending Heritage Impact Assessment (HIA) as part of the draft EIA Phase as stated in Table 1.3 on page 14 of the DSR. SAHRA also noted that the Visual Impact of the proposed development on heritage resources and any comments provided by the public regarding heritage resources must be taken into consideration. The Draft Environmental Impact Assessment Report (DEIR) has now been submitted.

Orton, J. 2018. Heritage Impact Assessment: Scoping and Environmental Impact Assessment for the Kap Vley Wind Energy Facility, Namakwaland Magisterial District, Northern Cape Province: EIA Report. (Appendix L of the DEIR).

A total of 28 heritage resources were identified within the development area. These include surface scatters and rock shelters containing Later Stone Age tools, some with other artefacts such as ostrich eggshell

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fragments, marine shell fragments and hammer stones, rated as sites of between low, low-medium and medium significance ratings, a historical farmhouse of medium-low significance with associated features of low significance, two stone foundations with associated historical artefacts scatters if low-medium significance, surface scatters of historical artefacts of low significance, a stone farm boundary beacon of low significance and two graveyards of high significance.

The cultural landscape of the proposed development area has an intangible heritage component i.e. The White Dunes as referenced by historical travelers and in historical maps, the "coloured reserve" in which traditional stock farming and the collection of medicinal plants occurred, and the reference to local San gathering the honey from the bees nests to make honey beer (presumably site KAP2017/002). The landscape and its link with traditional land uses will also be impacted and it will be necessary to ensure that only minimal loss of land takes place within the Kamaggas farm area. Importantly, however, the Nama Khoi municipality on behalf of the Komaggas community has agreed to a part of the proposed development occurring on their communal land, should it receive Environmental Authorisation.

The only project alternatives available for assessment were the access roads. While neither will result in any impacts, Option 1, is slightly favoured as Option 2 is located in close proximity to identified heritage resources.

Recommendations provided in the report include the following:

- All significant archaeological sites identified must be protected from harm. Where necessary to effect this, sites should be cordoned off i.e. KAP2017/001, KAP2017/002, KAP2017/003, KAP2017/004, KAP2017/005, and GRW2017/001;
- The graveyards at PAN2017/001 (waypoint 1376) and PAN2017/003 (waypoint 1378) must be cordoned off as necessary, avoided and protected;
- The historical sites at PAN2017/002 (waypoint 1377), PAN2017/004 (waypoint 1399), PAN2017/005 (waypoint 1413) and KOM2017/001 (waypoint 1420) must be cordoned off if necessary, protected and avoided;
- Roads must be designed in such a way as to minimise cut and fill operations in order to reduce landscape scarring;
- The final approved layout should be subjected to a pre-construction walk-down survey to identify any further sites that may require mitigation;
- If any archaeological material or human burials are uncovered during the course of development, then work in the immediate area should be halted. The find would need to be reported to the heritage authorities and may require inspection by an archaeologist. Such heritage is the property of the state and may require excavation and curation in an approved institution.

Proposed development of 300 MW Kap Vley Wind Energy Facility near Kleinzee, Northern Cape

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CaseID: 11654

Date: Thursday May 24, 2018
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Pether, J. 2017. Palaeontological Assessment: Desktop Study for the Proposed Kap Vley Wind Energy Facility, Namakwa District Municipality, Northern Cape Province.

The proposed development area is located within the Springbok Formation which does not contain fossils. The ridges and superficial coversands deposits are of low fossil bone potential. Fossil bones from the activities of carnivores and scavengers may be present within the hills and channel lag deposits. The overall impact of the proposed development on palaeontological material is rated as low.

It is recommended that a requirement to be alert for possible fossils and buried archaeological material be included in the Environmental Management Programme (EMPr) for the Construction Phases of the Kap Vley WEF, with a Fossil Finds Procedure in place. In the event of the exposure of fossil bones all work at that spot must cease and the Environmental Control Office (ECO) must inform SAHRA and a professional palaeontologist, who will then decide if avoidance or mitigation are preferred. Only a professional palaeontologist may excavate uncovered fossils with a valid mitigation permit from SAHRA.

Final Comment

The SAHRA Archaeology, Palaeontology and Meteorites (APM) Unit has no objections to the proposed development and supports the recommendations of the heritage specialists. The recommendations of the specialists and the following conditions must be included in the Final EMPr:

- A walk-down of the final layout must be conducted by a qualified archaeologist and the results of the walk-down must be submitted to SAHRA for review and comment. No construction may occur without comment from SAHRA on the walk-down report;
- Should it be necessary to mitigate the archaeological sites, a permit in terms of section 35 of the NHRA and Chapter II and III of the NHRA Regulations must be applied for prior to construction. No mitigation measures may be implemented without a permit issued by SAHRA for the specified work;
- Should it be necessary to mitigate any of the burial grounds, a consultation process as per section 36 of the NHRA and Chapter XI of the NHRA Regulations must be conducted prior to construction;
- If relocation of the graves if found to be feasible, a permit in terms of section 36 of the NHRA and Chapter IX of the NHRA Regulations must be applied for prior to construction. No relocation may occur without a permit issued by SAHRA for this expressed purpose;
- A Heritage Management Plan (HMP) must be developed and implemented as part of the EMPr for the in-situ management of all heritage resources located within the development boundary. This HMP must be submitted to SAHRA for review prior to construction;
- A Chance Finds Procedure and Fossil Finds Procedure must be developed and implemented as part of the EMPr. These procedures must be submitted to SAHRA for review and comment prior to

Proposed development of 300 MW Kap Vley Wind Energy Facility near Kleinzee, Northern Cape

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Date: Thursday May 24, 2018
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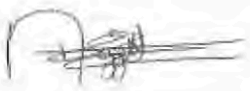
construction;

- The Final EIA and EMPr must be submitted to SAHRA for record purposes;
- If any evidence of archaeological sites or remains (e.g. remnants of stone-made structures, indigenous ceramics, bones, stone artefacts, ostrich eggshell fragments, charcoal and ash concentrations), fossils or other categories of heritage resources are found during the proposed development, SAHRA APM Unit (Natasha Higgitt/Phillip Hine 021 462 5402) must be alerted. If unmarked human burials are uncovered, the SAHRA Burial Grounds and Graves (BGG) Unit (Thingahangwi Tshivhase/Mimi Seetelo 012 320 8490), must be alerted immediately. A professional archaeologist or palaeontologist, depending on the nature of the finds, must be contracted as soon as possible to inspect the findings. If the newly discovered heritage resources prove to be of archaeological or palaeontological significance, a Phase 2 rescue operation may be required subject to permits issued by SAHRA;
- Should the project be granted Environmental Authorisation, SAHRA must be notified and all relevant documents submitted to the case file.

Should you have any further queries, please contact the designated official using the case number quoted above in the case header.

Yours faithfully



Natasha Higgitt
Heritage Officer
South African Heritage Resources Agency

Phillip Hine
Acting Manager: Archaeology, Palaeontology and Meteorites Unit
South African Heritage Resources Agency

Proposed development of 300 MW Kap Vley Wind Energy Facility near Kleinzee, Northern Cape

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Date: Thursday May 24, 2018
Page No: 6

ADMIN:
Direct URL to case: http://www.sahra.org.za/node/408059

Terms & Conditions:

1. This approval does not exonerate the applicant from obtaining local authority approval or any other necessary approval for proposed work.
2. If any heritage resources, including graves or human remains, are encountered they must be reported to SAHRA immediately.
3. SAHRA reserves the right to request additional information as required.

To develop and manage a system of national parks that represents the biodiversity, landscapes, and associated heritage assets of South Africa for the sustainable use and benefit of all.

South African NATIONAL PARKS

Park Planning & Development
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Port Elizabeth
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2018/06/11

Ref: DEA Ref No. 14/12/16/3/3/2/1046

Ms Minnelise Levendal
Council for Scientific and Industrial Research (DSIR)
PO Box 320
STELLENBOSCH
7588

Dear Ms Levendal

Draft Environmental Impact Assessment Report (DEIAR) for the Proposed Kap Vley Wind Energy Facility near Kleinzee in the Northern Cape

Thank you for the opportunity to comment on the above report.

SANParks has reviewed the DEIAR for the proposed wind energy development near Kleinzee, Northern and would like to make the following comments:

1. The report does lack the required detail in the specialist reports. I question when the assessments were done, as this area ideally needs to be looked at twice in the year, winter and spring. The no-go or highly sensitive areas seem rather small given our knowledge of the area.
2. The Mucina & Rutherford 2006 vegetation map of SA – is useful to give background but for this type of proposed impact assessment, proper field work should be done. The scale of the map (1:1 000 000) is totally inadequate for an assessment of this size. Working at a scale of 1:30 000 or at the most 1 : 50 000 would be more appropriate.
3. The offset study appeared to lack credibility. Support of an accredited offset specialist would have helped with the output and recommendations. Taking appropriate cognisance of the north-south and well as the at east-west corridors would have assisted in recommending appropriate offsets as would justification for the offset ratios for species of conservation concern.
4. The five years rehabilitation time for this arid landscape is unrealistic.
5. The proposed development falls within the Buffer Zone of Namaqua National Park (NNP) which include critical priority natural areas, as wells as the view shed protected zone. In addition, the proposed development also impinges upon the planned park expansion footprint. In particular, SANParks notes that the proposed development falls within a CBA and NCPAES Areas.
6. SANParks is concerned about potential negative impacts on the integrity of NNP and surrounding area. Although this wind farm is far from our boundary the turbines will be visible form certain places in the park and will impact on the remote

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South African NATIONAL PARKS

and open sense of place. Each turbine will have a red light on the top for aircraft and this will also be visible from a distance at night, potentially spoiling the view from the park now and into the future should we develop tourism products closer to Kommagas.

SANParks reserves the right to revise initial comments based on additional information that may be received.

Yours faithfully

Dr Mike Knight
GM: Park Planning and Development
South African National Parks

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2018/05/2516

Ref: DEA Ref No. 14/12/16/3/3/2/1046

Ms Minnelise Levendal
Council for Scientific and Industrial Research (DSIR)
PO Box 320
STELLENBOSCH
7588

Dear Ms Levendal

Draft Environmental Impact Assessment Report, (DEIAR) for the Proposed Kap Vley Wind Energy Facility near Kleinzee in the Northern Cape

Thank you for the opportunity to comment on the Scoping Report.

SANParks has reviewed the DEIAR for the proposed wind energy development near Kleinzee, Northern and would like to make the following comments:

The proposed development falls within the Buffer Zone of Namaqua National Park (NNP) which include critical priority natural areas, as wells as the view shed protected zone. In addition, the proposed development also impinges upon the planned park expansion footprint. In particular, SANParks notes that the proposed development falls within a CBA and NCPAES Areas. Furthermore, a number of plant species of conservation concern are confirmed present at the site. SANParks is concerned about potential negative impacts on the integrity of NNP and surrounding area. SANParks takes note of the ecological offset study.

SANParks reserves the right to revise initial comments based on additional information that may be received.

Yours faithfully

Dr Mike Knight
GM: Park Planning and Development
South African National Parks

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water & sanitation
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By Registered Mail

Council for Scientific and Industrial Research (CSIR)
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7599

Attention: Juwi Renewable Energies (Pty) Ltd

DRAFT ENVIRONMENTAL INPACT ASSSESSMENT (EIA) REPORT FOR THE PROPOSED DEVELOPMENT OF THE KAP VLEY WIND ENERGY FACILITY ON THE FARMS KAMAGGAS FARM 200 PORTION 5 R/E, KAAP VLEY FARM 315 R/E, KAAP VLEY FARM 315 PORTION 1 & PORTION 2 & PORTION 3, PLATVLEY FARM 314 PORTION 3, KOUROOTJIE FARM 316 R/E, AND GRA'WATER FARM 331 R/E, NEAR KLEINZEE, NORTHERN CAPE.

The Department of Water & Sanitation (DWS) hereby acknowledges receipt of the Draft EIA Report for the proposed development of the Kap Vley Wind Energy Facility situated on the above mentioned farms near Kleinzee, Northern Cape.

The Department takes note of the proposed activity and therefore provides the following comments:

- Please note that taking of water from a water resource needs to be authorized by this Department.
- All sewage, grey and wash water, as well as waste generated during the construction should be contained, collected and disposed of at a permitted or licensed facility.
- Any spillage of any hazardous materials including diesel that may occur during storage, excavation and operation must be reported immediately to this Department.
- Please note that no development should take place within the 1:100 year flood line.
- A Stormwater Management Plan should be put in place.
- Any other water use(s) as listed on page 7 of the draft EIA, subject to section 21 of the National Water Act 36 (1998), must be adhered to and authorized by this department.

Please feel free to contact this Department, should there be any enquiries.

Yours sincerely,

Mr. A.A Abrahams
PROVINCAL HEAD: NORTHERN CAPE OPERATIONS
DATE: 23/05/2018

NDP 2030 NATIONAL DEVELOPMENT PLAN
Our Future - make it work

Page 1 of 1

environmental affairs
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DEA Reference: 14/12/16/3/3/2/1046
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Telephone: (012) 399 9409 **E-mail:** TSangweni@environment.gov.za

Ms Minnelise Levendal
CSIR
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Telephone Number: (021) 888 2495
Email Address: mlevendal@csir.co.za

PER E-MAIL / MAIL

Dear Ms Levendal

COMMENTS ON THE DRAFT ENVIRONMENTAL IMPACT ASSESSMENT REPORT FOR THE PROPOSED 300MW KAP VLEY WIND ENERGY FACILITY AND ITS ASSOCIATED INFRASTRUCTURE NEAR KLEINZEE WITHIN THE NAMA KHOI LOCAL MUNICIPALITY IN THE NORTHERN CAPE PROVINCE

The draft Environmental Impact Assessment report (EIAr) dated April 2018 and received by this Department on 12 April 2018 refers.

This Department has the following comments on the abovementioned application:

i. Please ensure that all relevant listed activities are applied for, are specific and that it can be linked to the development activity or infrastructure as described in the project description.
ii. If the activities applied for in the application form differ from those mentioned in the final EIAr, an amended application form must be submitted. Please note that the Department's application form template has been amended and can be downloaded from the following link https://www.environment.gov.za/documents/forms.
iii. Please ensure that all issues raised and comments received during the circulation of the draft EIAr from registered I&APs and organs of state which have jurisdiction (including this Department's Biodiversity Section) in respect of the proposed activity are adequately addressed and included in the final EIAr. Proof of correspondence with the various stakeholders must be included in the final EIAr. Should you be unable to obtain comments, proof should be submitted to the Department of the attempts that were made to obtain comments. The Public Participation Process must be conducted in terms of Regulation 39, 40 41, 42, 43 and 44 of the EIA Regulations 2014 as amended.
iv. The preferred Layout Plan with the preferred substation, service routes, existing roads and new roads, and construction camp must be indicated in the final EIAr. A map combining the final Layout Plan superimposed (overlain) on the environmental sensitivity map must also be included in the final EIAr.
v. The preferred Layout Plan must clearly indicate turbine position numbers.
vi. Please ensure that all hardcopy and softcopy maps are clear and legible. Hardcopy maps must be at least A3 size.
vii. Comments from all other developers surrounding the development must be obtained and included in the final EIAr.

viii. Recommendations provided by specialist reports must be considered and used to inform the preferred layout alternative. Specifically, turbines and associated services must be removed from all sensitive areas as recommended by the specialists.

ix. Please note that the final EIAr must comply with all conditions of the acceptance of the scoping report (SR) signed on 12 February 2018, and must address all comments contained in the final SR and this letter.

x. The EMPr must include a provision to make the following reports available to the Department and applicable competent authority on request: alien/invasive plant management report; plant rescue and protection report; and re-vegetation and habitat rehabilitation report.

xi. Please ensure that all mitigation recommendations are in line with applicable and most recent guidelines.

xii. Should there be any other similar projects within a 30km radius of the proposed development site, the cumulative impact assessment for all identified and assessed impacts must be refined to indicate the following:

- Identified cumulative impacts must be clearly defined, and where possible the size of the identified impact must be quantified and indicated, i.e. hectares of cumulatively transformed land.
- Detailed process flow and proof must be provided, to indicate how the specialist's recommendations, mitigation measures and conclusions from the various similar developments in the area were taken into consideration in the assessment of cumulative impacts and when the conclusion and mitigation measures were drafted for this project.
- The cumulative impacts significance rating must also inform the need and desirability of the proposed development.
- A cumulative impact environmental statement on whether the proposed development must proceed.

xiii. The EIAr must provide the technical details for the proposed facility in a table format as well as their description and/or dimensions. A sample of the minimum information required is listed under point 2 of the EIA information required for wind energy facilities as requested in the acceptance of the SR.

xiv. You are further reminded that the final EIAr to be submitted to this Department must comply with all the requirements in terms of the scope of assessment and content of the EIAr in accordance with Appendix 3 of the EIA Regulations, 2014 as amended.

xv. Further note that in terms of Regulation 45 of the EIA Regulations 2014 as amended, this application will lapse if the applicant fails to meet any of the timeframes prescribed in terms of these Regulations, unless an extension has been granted in terms of Regulation 3(7).

You are hereby reminded of Section 24F of the National Environmental Management Act, Act No 107 of 1998, as amended, that no activity may commence prior to an environmental authorisation being granted by the Department.

Yours faithfully

Mr Sabelo Malaza
Chief Director: Integrated Environmental Authorisations
Department of Environmental Affairs
Signed by: Mr Coenrad Agenbach
Designation: Deputy Director: Strategic Infrastructure Developments
Date: 10/05/2018

cc:	C Van der Westhuizen	Kap Vley Wind Farm (Pty) Ltd	Email: corne.vanderwesthuizen@juwi.co.za

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Department:
Environment & Nature Conservation
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Enquiries : E Swart
Dipatlisiso : C Geldenhuys
Imibuzo : P Cloete
Navrae

Reference : KapVley wind farm development
Tshupelo :DEA ref 14/12/16/3/3/2/1046
Isalathiso
Verwysing

Date : 25 May 2018
Lesupelo
Umhla
Datum

Ms N Ngcaba
Director General
Department of Environmental Affairs
Private Bag X447
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For attention: Mr. Muhammad Essop, Assistant Director: Strategic Infrastructure Developments Integrated Environmental Authorisations, MEssop@environment.gov.za

RE: DRAFT ENVIRONMENTAL IMPACT ASSESSMENT REPORT, DEA REF 14/12/16/3/3/2/1046

1. There is insufficient detail of methodology in the specialist reports (specifically the ecological, botanical and to lesser extent the faunal sections). E.g. it is predominantly referred to 'walk-throughs' but in the specialist report walk-through and surveys are mentioned, but no detail on what surveys entailed, or the extent of the surveys. This makes it challenging to assess the content provided i.t.o. representivity of the study / impacted area and if the opinions raised under limitations and confidence in data.
2. Clear management guidelines must be in place and authorized i.t.o. mitigation process prior to development, during development, operational and decommissioning phases. A specialist who will be able to demarcate and mark no-go areas must be present throughout to ensure this mitigation is implemented correctly and within appropriate seasons (demarcation must occur in the wet season while construction must be in the dry season).
3. The consultant who provided the Offset Report has no Biodiversity Offset experience or background in this field which necessitates that (a) the final Offset Report must be completed by another consultant with proven experience and expertise in offsets, OR (b) an accredited and recognized Offset specialist must signed off on the non-experienced offset consultant's report. This specialist in Offsets have to declare that he/she will take responsibility for any shortcomings and / or inferiorities detected in the content of such offset report they sign-off on.
4. It is requested that some of the environmental arguments used in the documentation (specialist reports) be critically assessed as several is poorly constructed i.t.o. why certain recommendations and assumptions are made.
5. Specific focus on sustainability and resilience also lack – when you compare environmental and economic and social aspects towards suggesting which weighs more than the other. E.g., if you

use the doughnut model principles, how do these relate to each other and on what basis would you suggest an activity is sustainable and resilient to future environmental events.

6. One of the major information gaps relates to vegetation unit transformation. Most inferences are often based on Mucina and Rutherford 2006 data of transformation and protection statuses, however these are more than 10 years outdated! Accordingly, information gaps and confidence in some data must be revised and constructed in accordance.

7. Further to the DENC references listed below and attached hereto, the following are points to be addressed additionally/emphasised:

    1. One of the aspects that makes this specific area unique is that it coincides with the archeological Fynbos range of expansion and contraction. In this context the facilitation of the north-south corridor ecological and evolutionary functional role is important, but no reference or discussion was included in the provided documentation.
    2. The second ecological facilitative corridor route links west-east, which (in addition to the north-south) is aimed at facilitating natural mitigation for climate change.
    3. In context of both (a) and (b) the Offset discussions should reflect how the development might have an impact, and how the offset area of choice also address these.
    4. Spatial extent to consider include local, district, regional, landscape and national. Ecological function and mitigation must take all of these into consideration, and where applicable the scale not applicable must be justified. The same principle i.t.o. temporal scale.
    5. The writer disagree with the suggestion that rehabilitation will take 5 years and consequently that the total temporal impact period is around 30 years. What is regarded as rehabilitation under the proposed 5 years?
    6. The short-, medium- and long-term impacts of renewable energy developments within South Africa and specifically along our west-coast is uncertain/unknown. Monitoring must form part of the EMPr and must occur during all three phases of this development (construction, operation, decommissioning). The data must be databased and analysed by an appropriate and accredited person/institute to ensure that more knowledge is obtained to better guide future developments of similar nature.
    7. Insufficient justification is reflected towards the ratio of offset and no indication of ratio of specific habitats, vegetation unit and species are reflected. E.g. if only 5% of the local species of conservation concern is going to be impacted, how would this impact on the conservation status on a provincial and national level. The 5% of a population with a size of 50 plant is significantly higher than 5% of a species with a population of 5 000. Similar principle i.t.o. habitats and vegetation units.
       Nine plant species of conservation concern (Red Data Listed) are listed for the site in the report. There are however potential additional species such as *Nemesia saccata* which is on the SANBI GIS shapefile list of Red Data species for the site, or nearby.
    8. Specification is needed of how much of what exactly needs to be offset. The sensitivity and fine-scale (figure 1) maps will assist in this regard. The uniqueness of the site is also attributed to the closed proximity between very different habitats, with deep sand habitat bordering directly against rocky terrain. I postulate that this would likely result in high beta diversity across the diverse terrain. It is uncertain if this feature would repeat itself in the area of extent of Namaqualand Sand Fynbos vegetation unit.
    9. The habitat diversity of the landscape applies to both flora and fauna diversity patterns and can be translated to edaphic and terrain diversity. This is a key environmental feature also used for climate change mitigation /facilitation planning and should be incorporated/considered accordingly.

10. The diversity of reptiles have been documented and should be considered. The 2014 Reptile Atlas and Red List shows that of the 1888 grid cells in RSA (93.2% of RSA with data), the study area grid cell falls into the highest category of number of reptile taxa per Quarter Degree Grid Cell (38-80 species), which is the top 9.73% of grid cells with data records. The study area also falls within the top category for number of endemic reptile taxa (12-24), which is the top 6.17% of grid cells with data. The occurrence of reptiles of conservation concern is however very low (weighted score of less than 1).
11. From the description in the report important indicators for offset properties would be the presence of Sand Fynbos, Restio Fynbos and Dune Fynbos as well as the presence of indicator species of conservation concern (extent and ratio of each to form part of the offset still lacks). This assemblage does not occur north of the Spoegrivier where a mosaic of Namaqualand Strandveld and Sandstone Fynbos occurs (although this can be investigated in more detail through field work). Proposed possible suitable offset sites occur approximately 50 km south of the sites, inland of Hondeklip Bay, but this requires further investigation. The closest similar habitat to the study area is the Sandstone Fynbos assemblages between the Spoeg and Groen Rivers, inland of Namqua National Park (Figure 2 and Figure 3). The offset localities adjacent to Namaqua National Park are of more strategic value, as they could be incorporated into an existing protected area network. The report does not provide recommendations on any specific properties as potential biodiversity offsets for the development with the need for field verification of suitability being required.
    Potential biodiversity offset options can be gauged from Figure 2 and Figure 3 where vegetation unit and farm sizes are indicated.
12. The proposed development have a footprint of 128 ha, and with the 1:20 offset principle a preliminary offset of 2 560 ha is required.

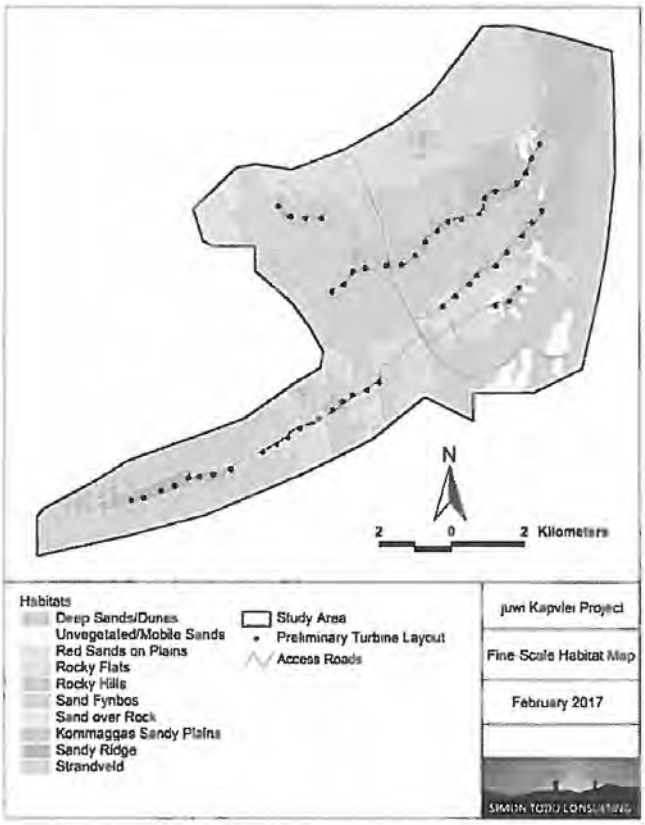

Figure 1: Fine-scale habitat map of the Kapvlei site, showing the distribution of the different major edaphic (environmental) habitats at the site. These have been mapped at a fine scale with accuracy levels of 1-2m and as such, there is little spatial error and uncertainty inherent in the map. Figure and title description taken from the Simon Todd report: Juwi Kapvlei Project, Fine-Scale Mapping Study, dated March 2018.

To conclude, the development is expected to have a high impact on ecosystem function and specialised/unique habitats and thus the consequent impacts species (spatial and temporal scales). Should DEA assess the EIA and EMPr and feel authorisation can be granted, the Offset must be a condition within the EA and details of what must be offset must be specific. Timeframes (including legally binding contract agreement) and responsibilities must be provided as well to ensure that the Offset process is done in a legal and appropriate manner and that each party to the offset know their roles and responsibilities towards securing the offset and its management.
No authorisation can be considered without an Offset agreement in place.

In principal, offset(s) adjacent to the Namaqualand National Park can be supported as long as SANParks is willing to accept the properties and if the offset area(s) is appropriate ('like-for-like' preferably, while alternatives can only be considered during robust discussions with strong motivation as to why the deviation from like-for-like must be deviated from).

Please feel free to contact our department should you need any further information and or clarity.

Yours sincerely,

Ms N van Olmen Phillips
Acting Head of Department
Department of Environment and Nature Conservation
Date

Cc: DEA colleagues
M Rabothatha
M Essop
T Sangweni
S Tshitwamulomoni
P Kershaw
W Lutsch

Cc: SANParks colleagues
W Louw
M Knight
H Hendriks

Cc: CSIR colleagues

Cc: DENC colleagues
B Fisher
N van Olmen
A Yaphi
L Tools-Bernardo
M Mathews
S de la Fontaine

P Cloete
C Geldenhuys

References:

Report back
C Geldenhuys & P Cloete, 2018. Juwi Kap Vley Wind Energy Facility Biodiversity Offset site visit, 17 April 2018.
Internal comments
P Cloete, District Ecologist Namaqualand, Production Scientist Gr A. "Scoping and Environmental Impact Assessment for the proposed Kap Vley Wind Energy Facility near Kleinzee in the Northern Cape", dated 24 May 2018, reference: DEA Ref. 14/12/16/3/3/2/1046.
C Geldenhuys, Botanist, Production Scientist Gr B. "*Juwi Kap Vley Project - Screening Phase Offset Study*" of July 2016 compiled by Mr. Simon Todd", dated 31 October 2017, reference: Kap Vley wind farm biodiversity offset.

Note: Figures 2 and 3 have been removed from the letter as it was only for internal use, as requested by Ms Elsabe Swart of DENC at the meeting on 12 June (see meeting notes in Appendix E11)

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World Wide Fund For Nature

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WWF for a living planet®

To whom it may concern

16 May 2018

Dear Sir or Madam

DRAFT EIA REPORT: SCOPING AND ENVIRONMENTAL IMPACT ASSESSMENT FOR THE PROPOSED DEVELOPMENT OF THE KAP VLEY WIND ENERGY FACILITY NEAR KLEINZEE, NORTHERN CAPE

WWF South Africa ("WWF-SA") hereby confirms that it has reviewed the draft EIA report for the proposed development of the Kap Vley Wind Energy Facility near Kleinzee, Northern Cape of April 2018 with DEA Reference number 14/12/16/3/3/2/1046.

In particular, WWF-SA has reviewed Appendix Q, the Ecological Offset Study Report, and has conducted a subsequent site visit to the affected area. Based on these, WWF South Africa hereby confirms that it has no objection to the contents of the EIA report, in particular Appendix Q and the approach proposed in Appendix Q.

Further to the above, WWF-SA would like to disclose a possible conflict of interest in that it has been identified as a potential implementation partner for the biodiversity offset. in terms of the proposed development.

We would be happy to answer any further questions from the competent environmental authority in this regard.

Yours sincerely,

Angus Burns,
Senior Manager: WWF-SA Land & Biodiversity Stewardship Programme

DIRECTORS: MV MOOSA (CHAIRMAN), M READ (DEPUTY CHAIRMAN), Dr MA DU PLESSIS (CHIEF EXECUTIVE), S ABRAHAMS (EXECUTIVE), C CAROLUS, AT IKALAFENG, VP KHANYILE, Dr J KING, M MAPONYANE, M MOROBE, M MSIMANG, AJ PHILLIPS, Dr J VAN ZYL, H WESSELS

Scoping and Environmental Impact Assessment for the proposed Kap Vley Wind Energy Facility near Kleinzee in the Northern Cape

UPDATED DRAFT ENVIRONMENTAL IMPACT ASSESSMENT REPORT

APPENDIX E:

Correspondence and consultation with DEA and DENC

Correspondence and consultation with the national Department of Environmental Affairs (DEA)
Appendix E1-8

Correspondence and consultation with the Department: Environment and Nature Conservation Northern Cape Province (DENC)
Appendix E9-11

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APPENDIX E1-8: CORRESPONDENCE AND CONSULTATION WITH THE NATIONAL DEPARTMENT OF ENVIRONMENTAL AFFAIRS (DEA)

APPENDIX E1: PRE-APPLICATION MEETING WITH DEA

MEETING NOTES OF PRE-APPLICATION MEETING WITH DEA ON 11 OCTOBER 2017

MEETING NOTES OF PRE-APPLICATION MEETING WITH DEA TO DISCUSS THE PROPOSED KAP VLEY WIND ENERGY FACILITY AND ASSOCIATED ELECTRICAL INFRASTRUCTURE PROPOSED BY JUWI RENEWABLE ENERGIES (PTY) LTD (juwi) NEAR KLEINZEE IN THE NORTHERN CAPE

11 October 2017, 9H30-11H30, DEA Office, Environment House, Arcadia, Pretoria

Attendance:

Name	Organisation
Muhammad Essop (ME)	DEA
Thabile Sangweni (TS)	DEA
Corne van der Westhuizen (CvdW)	juwi
Minnelise Levendal (ML)	CSIR
Reinett Mogotshi (RM)	CSIR

Attachments:

1. Agenda and Attendance Register (Appendix 1)
2. Presentation of the proposed Kap Vley WEF and associated electrical infrastructure (Appendix 2)
3. Letters to provide in-principal agreement from WWF and SANParks to determine a biodiversity offset for the Kap Vley WEF project (Appendix 3).

Purpose of the meeting:

This meeting constitutes the Pre-Application Meeting with DEA to discuss the Environmental Impact Assessment (EIA) for the proposed Kap Vley Wind Energy Facility that is currently being undertaken by CSIR. It is also to discuss the proposed associated electrical infrastructure of the project which will constitute a separate Basic Assessment (BA) process. The meeting is to provide an overview of the proposed WEF and associated electrical infrastructure and to confirm the proposed EIA and BA processes to be undertaken. This includes the proposed approaches and requirements of the Scoping, EIA and BA processes. It also includes the Public Participation Process, Alternatives and Cumulative impacts to be included and assessed as well as the proposed EIA Schedule. The meeting will also provide feedback on the approach and progress to date to secure a biodiversity offset for the project as it falls within an area of high biodiversity sensitivity.

1. Notes - Welcome and introductions

ME welcomed all participants to the meeting. The participants introduced themselves.

2. Notes - Overview of the Kap Vley Wind Energy Facility

RM presented an overview of the proposed project (see Appendix 1 for the full presentation):

- **Kap Vley WEF near Kleinzee in the Northern Cape:**
  - juwi is proposing the development of the Kap Vley WEF and associated electrical infrastructure:
    - Located approximately 30 km south east of Kleinzee in the Northern Cape. It falls within the Namakhoi Local Municipality which falls under the Namaqualand District Municipality.
    - Maximum number of turbines: 56
    - Maximum turbine height and rotor diameter: 150 m & 160 m respectively
  - Proposed Scoping and EIA – to be undertaken for the WEF
  - Separate BA process to be undertaken for the electrical infrastructure component associated with the proposed WEF. The BA and EIR processes will run concurrently. One integrated PPP will be followed to ensure that the timeframes for the issuing of the Environmental Authorisations for the proposed Kap Vley WEF and the electrical component are aligned.
  - Specialist studies will be undertaken to inform the EIA Process - Please refer to slide 12 of the Presentation in Appendix 2 for a full list of the specialist studies.
  - In addition to the specialist studies, a Biodiversity Offset study will be undertaken by Simon Todd Consulting as the site falls within a Critical Biodiversity Area (CBA) 1 & 2. Juwi is taking a pro-active approach and investigating the potential need and opportunity for an offset to compensate for the likely impact of the development. Meetings have been held with WWF, SANParks and the Department of Environment and Nature Conservation of the Northern Cape Province (DENC).
  - In principle support letters were obtained from WWF and SANParks for the process of determining an offset whereby land will be acquired from WWF to expand the Namaqua National Park (See Appendix 3).

3. Notes - Key Questions and Discussion

CSIR QUESTION	DEA RESPONSE	ACTION
Confirmation of EIA and BA Processes/ Approaches: o Submit two separate applications, i.e. one for Scoping and EIA (Kap Vley WEF) and one for the BA process (associated electrical infrastructure). o Submit separate Scoping and EIA Reports and a Separate BA Report. o Undertake one integrated PPP for the BA and EIA Processes o The final EIA Report and the final BA Report to be submitted to DEA simultaneously to align Environmental Authorisations from DEA.	Proposal for EIA and BA approaches (i.e. to undertake separate processes and one integrated PPP) is acceptable. ME enquired whether consent was obtained from all the landowners. CvdW confirmed that consent was obtained, except from the land owners for the two farm portions to be traversed by the new roads to be constructed. CvdW indicated that since there are only linear activities occurring on these properties, he is of the view that landowner consent is not required for these two properties, the same way consents are not required for properties only traversed by powerlines. . ME referred to Section 39(1) of the NEMA Regulations and indicated the need for consents for these properties will be confirmed as part of the approval of these meeting notes.	ME asked that the EAP on the project is not working on the SEA, and ML confirmed that she is not part of the SEA team. ML to proceed with the proposed approach to submit two separate Applications for Scoping and EIA and the BA processes. Integrated PPP to be followed for the above. ME to confirm whether consent must be obtained from landowners for the construction of roads as linear activities on their properties. ME confirms, after discussions internally, that seeing that the new roads to be constructed is directly related to the Wind Energy Facility, it cannot be isolated, and hence, seeing that landowner consent is needed for the properties in question for the wind energy facility, then landowner consent is needed for the new roads. If the CSIR can prove that the new roads constructed are not for the purpose of the Wind Energy facility, then the DEA may change its opinion.
Confirmation on Alternatives: o No-go alternative will be assessed o There are no site /location alternatives and motivation why these are not included will be provided in the Scoping Report. juwi identified three	It is important that each specialist provides a detailed assessment of the no-go alternative in their specialist reports to be included in the EIA Reports. Alternatives do not refer to site/location alternatives only. It also includes other alternatives, e.g. technology	Detailed motivation will be provided in the Scoping Report why site or location alternatives are not available to take forward into the EIA phase. All other alternatives will be included in the Scoping Report and assessed in the EIA Report.

CSIR QUESTION	DEA RESPONSE	ACTION
potential sites during the project screening phase: ➢ Kiap: unfeasible due to environment i.e. nearby Goegab Nature Reserve; ➢ Brazil: unfeasible due to land ownership; and ➢ Kap Vley: Feasible and taken forward for S&EI process. ➢ Three powerline routing alternatives will be assessed in the BA. ➢ From the on-site substation to Gromis Substation (app 36 km); ➢ From the on-site substation to Gromis Substation or closer to new proposed Eskom substation for which location still needs to be determined (approx. 36 km); and ➢ Directly to the Gromis substation from the on-site substation (approx. 32 km).	alternatives. The 2014 NEMA EIA Regulations make provision if no alternatives, including alternative sites or locations for the activity were investigated, to provide motivation for not considering these. Please provide substantial motivation why site or location alternatives are not included in the Scoping Report. This will form the basis as to why no alternatives will be investigated going forward. TS asked which one is the preferred powerline routing alternative? CvdW confirmed it will be the shortest routing alternative and this will be confirmed once the Eskom substation is built. Please identify all other feasible alternatives in the Scoping Report.	The "No-go" alternative will also be included and assessed in detail by the specialists and will be included in the EIA Reports.
Uncertainty regarding turbine capacity, number and model at this stage. Turbine specifications will only be finalised during the EIA phase as new or updated models or specifications become available all the time.	ME notes it is understandable that some turbine specifications will only be finalised closer to construction. It is however important that the "worst-case scenario" be presented and assessed by the specialists. o the maximum number of turbines: 56 o maximum hub height and rotor diameter: 150 m & 160 m respectively. Specialists must also consider and assess all possible	The bird, bat and visual specialists will be requested to consider and assess the different ranges of the turbine height and rotor diameter and include it in their specialist reports. The ranges will be incorporated into the ToRs of the specialist studies and in the PoS for EIA.

CSIR QUESTION	DEA RESPONSE	ACTION
	ranges, e.g.: hub height: 80-150 m; rotor radius: 40-70m, minimum bottom clearance: 30 m, max tip height 230 m. These ranges will affect the sweep area and the potential kill zone of birds and bats and will impact the significance ratings these impacts, e.g. bats will be affected at a lower sweep area. It is therefore important for the relevant specialists to assess all possible ranges. The tip height ranges will affect the visual study and must therefore be considered and assessed by the visual specialist.	
Confirmation on approach to assess cumulative impacts: Assess other renewable energy projects and associated electrical infrastructure (e.g. powerlines) within a radius of 50 km. Should solar projects be considered as well?	DEA agrees with CSIR proposal to assess other renewable energy projects and associated electrical infrastructure projects within a radius of 50 km. Wind and solar projects must be considered to determine the cumulative impacts as similar impacts may be effected, e.g. the loss of vegetation or habitat.	Specialists will be requested to consider and assess cumulative impacts associated with other renewable energy projects (wind and solar) and electrical infrastructure within 50 km of the project site.
Confirmation on the proposed approach to acquire a biodiversity off-set for the project: The Kap Vley WEF site is located in a CBA1 and CBA2. A biodiversity offset is required and juwi is investigating the potential to contribute to the WWF land acquisition programme in the area to expand the Namaqua NP as an offset. A Draft Biodiversity offset study was prepared by Simon Todd Consulting and will be included in the scoping report.	ME notes that the determination of a biodiversity offset is a sensitive issue and needs to be addressed in an appropriate manner by all affected parties. ME cautions not to provide a direct financial offset to any government department. ME agrees with the proposed approach of juwi to contribute to the WWF Land Acquisition Programme to expand the Namaqualand National Park. The final offset study needs to be included in the Draft EIA Report. The requirements of the Draft National Biodiversity Offset Guideline (April 2017) must be adhered to.	The EAP to include the draft biodiversity offset study in the Draft Scoping Report. juwi to proceed with negotiations with WWF and SANParks to finalise the biodiversity offset and the offset study. It will be included in the Draft EIA Report. Comments must also be sought from the relevant authorities, within the DEA as well as the NC on the proposed offset. The offset must be finalised before the final EIAr is submitted to ensure it can be considered as part of the decision making process.

CSIR QUESTION	DEA RESPONSE	ACTION
Confirmation on the specialist studies: The specialist impact assessments have not been finalised. The final specialist studies to be included in the EIA will meet the requirements of Appendix 6 and will be included in the Draft and Final EIA Reports.	The draft inputs provided by the specialists to date can be included in the Draft and Final Scoping Reports. It should be marked as "scoping inputs from the specialists." It will not be regarded as specialist impacts assessments and will not be required to meet the requirements of Appendix 6 of the NEMA EIA Regulations during the scoping phase. TS noted that she can comment on the ToRs for the specialist studies to be addressed in the final specialist studies to be included in the EIA Report.	ML to include the draft specialist inputs in the Draft and Final Scoping Reports. The final specialist studies will be included in the EIA Report and will adhere to Appendix 6 of the NEMA EIA Regulations.
Confirmation on the PPP: Integrated PPP to be followed for the EIA and BA processes.	As indicated above, DEA accepts the proposed approach that an integrated PPP will be followed for the EIA and BA processes	Integrated PPP to be undertaken for the EIA and BA processes.
Issues will only be captured during the 30-day public review periods	ME: Issues can also be captured outside of the 30-day public review period. The EAP should be reasonable, e.g. if comments are a few days late, it can still be incorporated, otherwise comments to be included and addressed in the following phase. Comments on the final reports submitted after the final reports were submitted for decision-making, should be sent directly to DEA for their consideration. It is important to maintain separate issues and responses trails for the EIA and BA. Comments can be received collectively, but the comments must be split for each process.	Comments will be captured during the 30-day public review periods, but also outside of these periods, where reasonable and where the extension will not lead to missing deadlines for report submissions and the lapsing of the Application. Should it not be possible to capture comments beyond the 30-day review period, the comments will be captured and responded to in the Issues and Responses trail of the next report (as applicable).
Need for Focus Group Meetings and Public Open House Meetings if requested.	Public Meetings or Public Open House Meetings are not required or regulated under the 2014 NEMA EIA Regulations. However, the EAP must do what is	The need to have Focus Group Meetings and/or Public meetings or Public Open-House Meetings will be

CSIR QUESTION	DEA RESPONSE	ACTION
At this stage it is not anticipated that Public meetings will be held in the EIA Phase. However, these meetings or focus group meetings will be held on request and pending the responses received during the Scoping Phase.	reasonable and may decide to have one upon request.	determined during the Scoping and EIA Processes.

- **Recommendations from DEA on the EIA process following queries from CSIR:**
  - Please adhere to all the requirements in Appendices 2 and 3 for Scoping and EIA Reports respectively under the 2014 NEMA EIA Regulations (as amended, April 2017).
  - Please adhere to the legislated timeframes under section 3 of the 2014 NEMA EIA Regulations (as amended). Deliveries via courier should be done during office hours between 8-16H30. Deadlines may be missed if reports are delivered at security office after hours. If timeframes are not met, the Application will lapse and a new Application for EA would need to be lodged.
  - Request for Extension can be submitted in terms of Regulation 3 (7) of the NEMA EIA Regulations. However, this request will only be granted where exceptional circumstances can be demonstrated prior to the lapsing of the prescribed timeframe. Requests for Extension will not be granted if e.g. more time is requested to complete an Ecology study in the appropriate season.
  - The commenting period for DEA starts from the date that the Application or Report is received and stamped by DEA. The commenting period does not start from the date that the Application or Report is delivered at DEA, as this may be after the DEA offices have closed and it will therefore only be stamped the following day. It also does not start from the date that the application or report has been acknowledged.
  - Public participation or commenting on reports will not take place during the December holiday period, i.e. from 16 December to 5 January.

4. Way forward and Closure

- ML to draft the meeting notes and send to DEA for approval and sign-off.
- The meeting notes with the meeting reference number must be included as an appendix to the cover letter of the Application for EIA. This will ensure that the project will be assigned to TS and ME once the Application for the EIA has been lodged as they have attended the pre-application meeting and know the project background.
- CvdW requests that the case officer should phone ML if she has any questions or if anything is unclear to avoid unnecessary delays and misunderstandings on the projects.
- The meeting notes must be included in the Scoping, EIA and BA Reports.

ML and CvdW thanked DEA for the opportunity to meet with them and for providing feedback on the queries relating to the Scoping, EIA and BA approaches and processes for the proposed Kap Vley WEF and associated electrical infrastructure near Kleinzee in the Northern Cape.

THE MEETING ADJOURNED AT 11H15.

APPENDIX 1: Agenda and Attendance Register

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juwi

AGENDA

PRE-APPLICATION MEETING WITH DEA ON EIA FOR JUWI KAP VLEY WIND ENERGY FACILITY NEAR KLEINZEE IN NORTHERN CAPE

DATE	TIME	VENUE
Wednesday 11 October 2017	09:30 – 11:30	DEA Environment House - Boardroom A2-2-14

Proceedings will be as follow:

TIME	ACTIVITY/PRESENTATION
09:30 – 09:45	Welcome and introductions
09:45 – 10:15	Overview of the juwi Wind Energy Facility project: Background, location and technical description
10:15 – 10:45	Overview of the Environmental Impact Assessment and Basic Assessment Processes to be undertaken
10:45 – 11:15	Questions and Discussion
11:15- 11:30	Way forward and closure

ATTENDANCE REGISTER

juwi

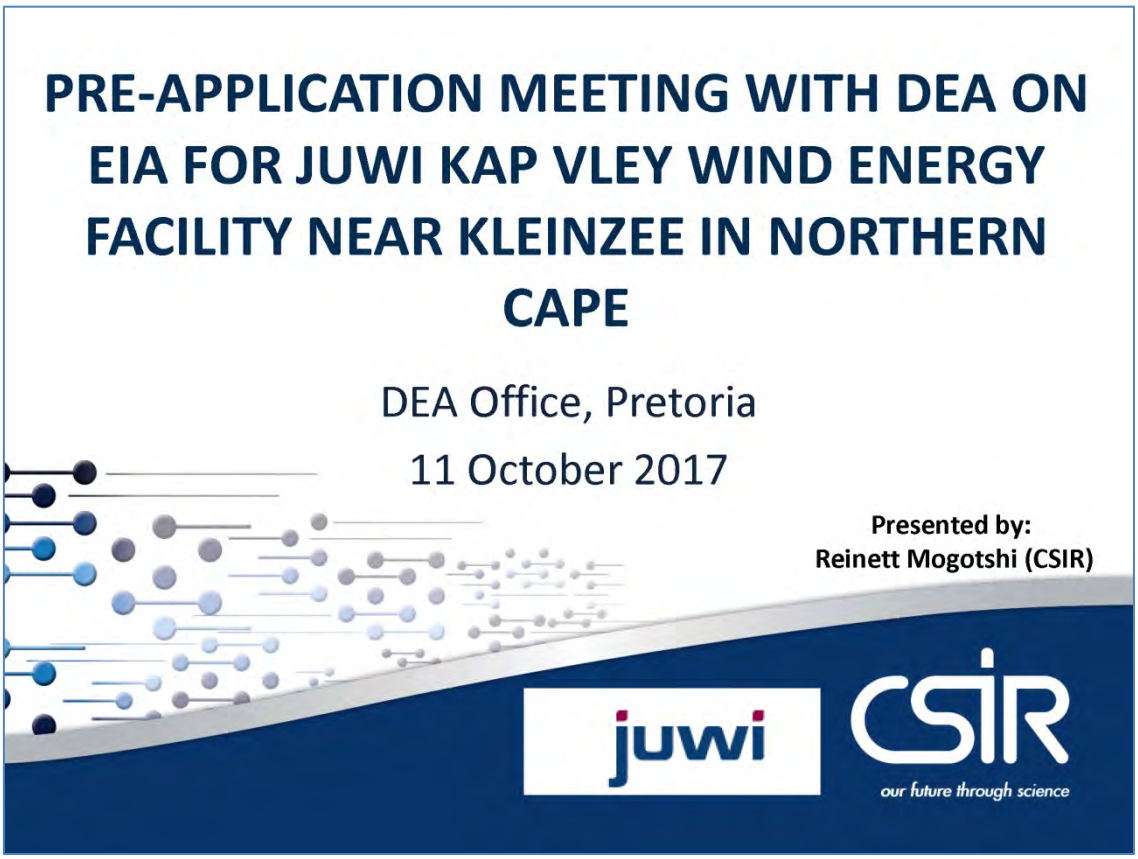
CSIR

PRE-APPLICATION MEETING WITH DEA ON EIA FOR JUWI KAP VLEY WIND ENERGY FACILITY NEAR KLEINZEE IN NORTHERN CAPE

Attendance Register

Organisation	Name	Email	Signature
CSIR	Minnelise Levendal	mlevendal@csir.co.za	
Juwi Renewable Energies	Corné van der Westhuizen	corne.vanderwesthuizen@juwi.co.za	
DEA	Thabile Sangweni	TSangweni@environment.gov.za	
DEA	Muhammad Essop	MEssop@environment.gov.za	
CSIR	Renett Mogotsi	RMogotsi@csir.co.za	

APPENDIX 2: Presentation of the proposed Kap Vley WEF and associated electrical infrastructure



Presentation Outline

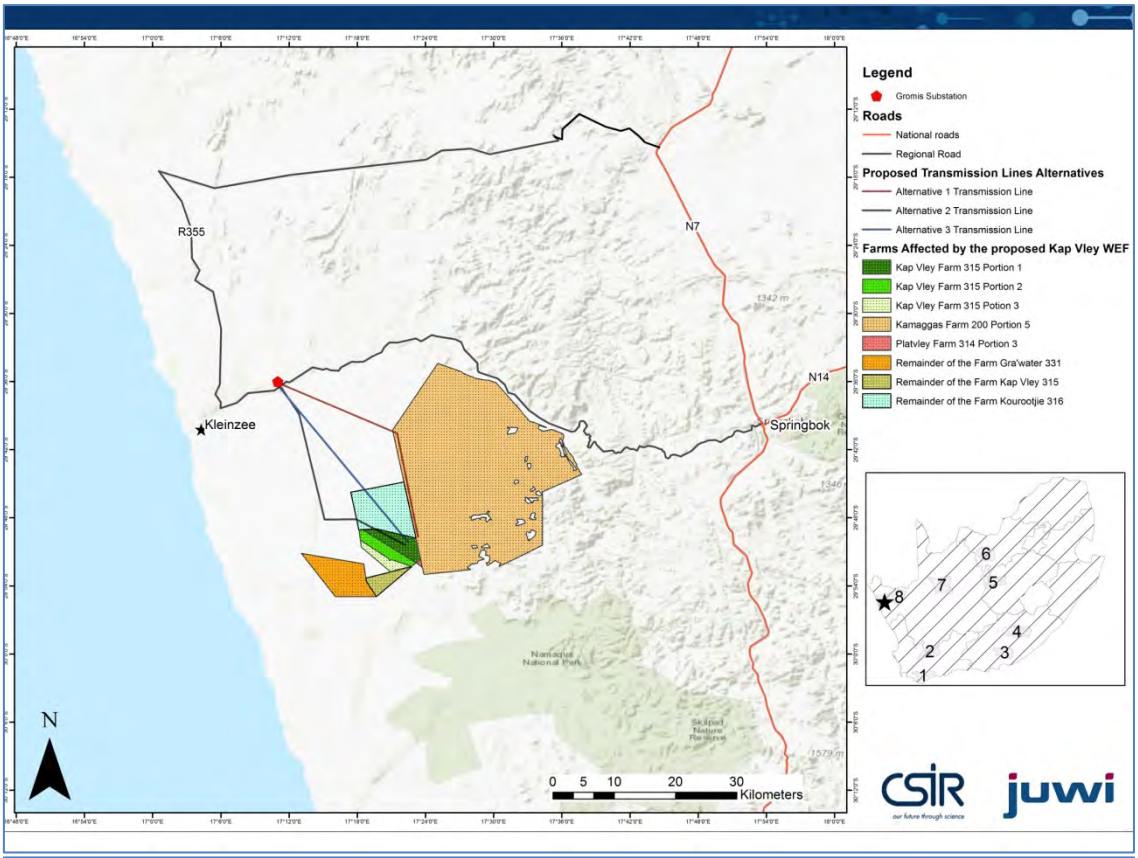
- Introduction
- Technical description of the project
- Overview of the Environmental Impact Assessment process
- Questions and Discussion

2

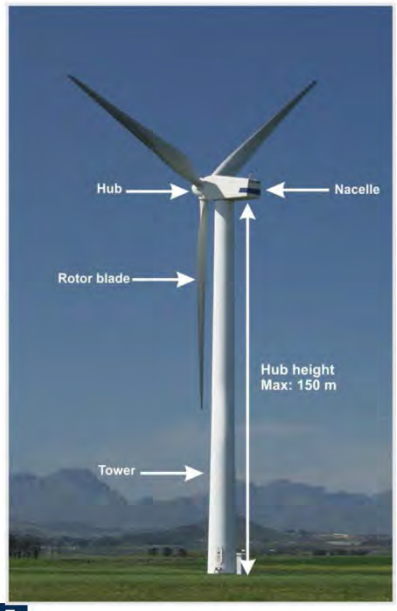
INTRODUCTION

- **PROJECT APPLICANT:**
  JUWI RENEWABLE ENERGIES (PTY) LTD (juwi)
- **EAP: Minnelise Levendal (CSIR)**
  Reinett Mogotshi (Project Manager, CSIR)
- **KAP VLEY WIND ENERGY FACILITY:**
  - Located approximately 30 km south east of Kleinzee in the Northern Cape
  - It is located within the Namakhoi Local Municipality which falls under the Namakwa District Municipality

3



PROJECT DESCRIPTION (1)



WIND TURBINE

- Maximum number of turbines: 56
- Turbine height (max): 150 m
- Rotor diameter (max): 160 m
- Footprint per wind turbine: 20 m x 20 m & 1 m deep
- Crane Platform: < 1 ha each
- Temporary hardstanding areas (boom erection, storage, and assembly area) of approx. 15 ha.

5

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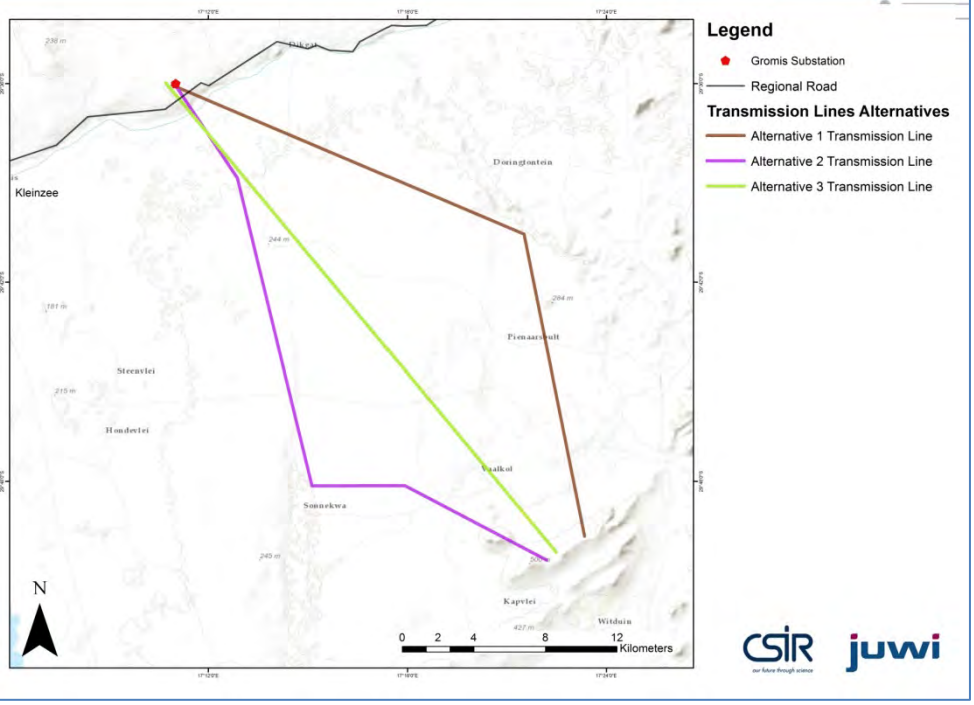
PROJECT DESCRIPTION (2)

- ON-SITE SUBSTATION
  - Height: approximately 5 m
  - Footprint: 150 m x 150 m
  - Capacity: 132 kV
  - Internal cables: 22/33 kV (underground where possible)

6

TRANSMISSION CONNECTION



7

TRANSMISSION CONNECTION (2)

- POWERLINE ROUTING ALTERNATIVES (Capacity: 132 kV)
  - **Alternative 1:**

    From the on-site substation to Gromis Substation- approximately 36 km long.
  - **Alternative 2:**

    From the on-site substation to Gromis Substation or closer to new Eskom substation for which location still needs to be determined-approximately 36 km long.
  - **Alternative 3:**

    Directly to the Gromis substation from the on-site substation. The transmission line is approximately 32 km long.

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APPROACH TO EIA

- EIA Application & Draft Scoping Report (DSR) to be submitted concurrently.
- DSR to be released for 30-day commenting period
- Final Scoping Report to be submitted to DEA for decision-making.
- Draft EIA Report to be released for comment.
- Separate Basic Assessment for transmission line
- One Integrated Public Participation Process:
  - Release Draft EIA Report for WEF and Draft Basic Assessment Report transmission line concurrently.
- Submit Final EIA Report and Final BAR to DEA.

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PROJECT SCHEDULE

Key Milestones activities	Proposed Timeframe
Release Draft Scoping Report for comment: 30 days Submit Application Forms to DEA	October 2017 – November 2017
Submit Final Scoping Report to the DEA for Decision-making.	December 2017 (First week)
Review of the Scoping Report by the DEA (i.e. accept or refuse EA): 43 days from date of receipt of the Scoping Report.	December 2017 – February 2018
Release Draft EIA Report and Draft BA Report for comment: 30 days	April 2018 – May 2018
Submit Final EIA Report and Final BA Report to the DEA for Decision-making.	May 2018
Review of the Final EIA Report and Final BA Report by the DEA (i.e. grant or refuse EA): 107 days from receipt of the EIA Report.	June 2018 – September 2018
Next steps: 5 days for notification to applicant	September 2018

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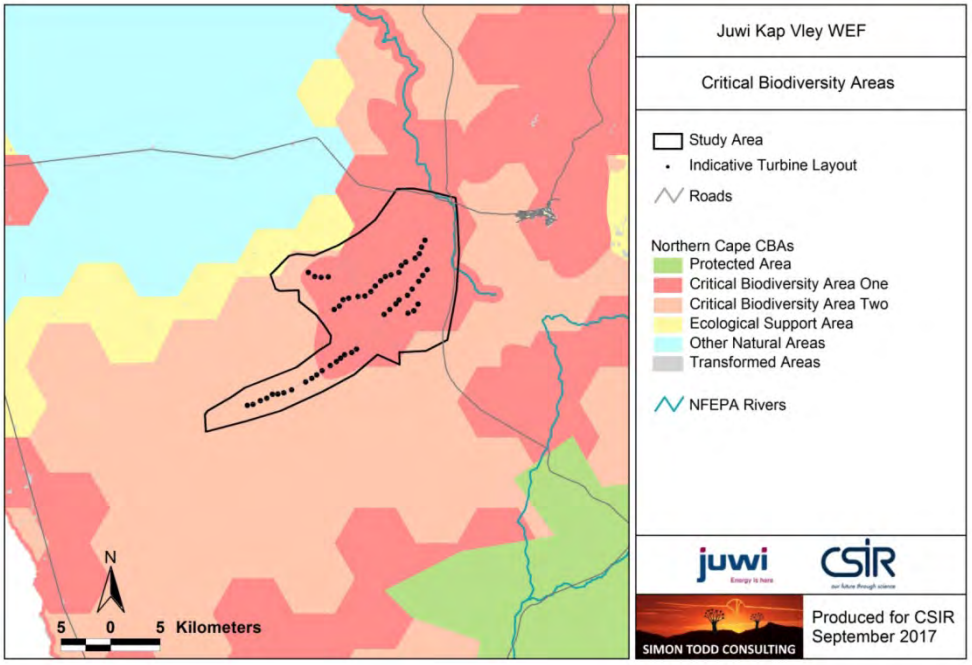
SPECIALIST STUDIES

STUDY TO BE UNDERTAKEN	ORGANISATION	NAME
Terrestrial Ecology (including fauna and flora).	Simon Todd Consulting	**Simon Todd**
Bird Impact Assessment	ARCUS	**Andrew Pearson**
Bat Impact Assessment		**Jonathan Aronson**
Freshwater Impact Assessment	CSIR (External Review)	**Luanita Snyman v.d Walt**
Visual Impact Assessment	Bernard Oberholzer Landscape Architect and BOLA	**Bernard Oberholzer and Quinton Lawson**
Heritage Impact Assessment (Archaeology, and Cultural Landscape)	ASHA Consulting (Pty) Ltd	**Dr. Jayson Orton**
Desktop Palaeontological Impact Assessment	Private, sub-contracted by ASHA Consulting (Pty) Ltd	**John Pether**
Soils and Agricultural Potential Assessment	Private	**Johann Lanz**
Socio-Economic Impact Assessment	CSIR (External Review)	**Surina Laurie**
Noise Impact Assessment	Enviro-Acoustic Research cc	**Morné de Jager**
Traffic Impact Assessment	WSP Group Africa (Pty) Ltd	**Christo Bredenhann**

Environmental Sensitivity



12

Biodiversity Offset Study

- The site is within an area variously recognised to be of high biodiversity value.
- juwi is taking a pro-active approach and investigating the potential need and opportunity for an offset to compensate for the likely impact of the development.
- Simon Todd Consulting appointed to undertake the offset study
- Meetings have been held with WWF, SANParks and DENC
- In principle support letters obtained from WWF and SANParks for the process of determining an offset for Kap Vley Wind Farm to expand the Namaqua NP.

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Alternatives (1)

- Site alternatives
  - Three sites were evaluated by juwi:
    - Kiap: unfeasible due to environment i.e. nearby Goegab Nature Reserve
    - Brazil: unfeasible due to land ownership
    - Kap Vley: Feasible and taken forward for S&EI process

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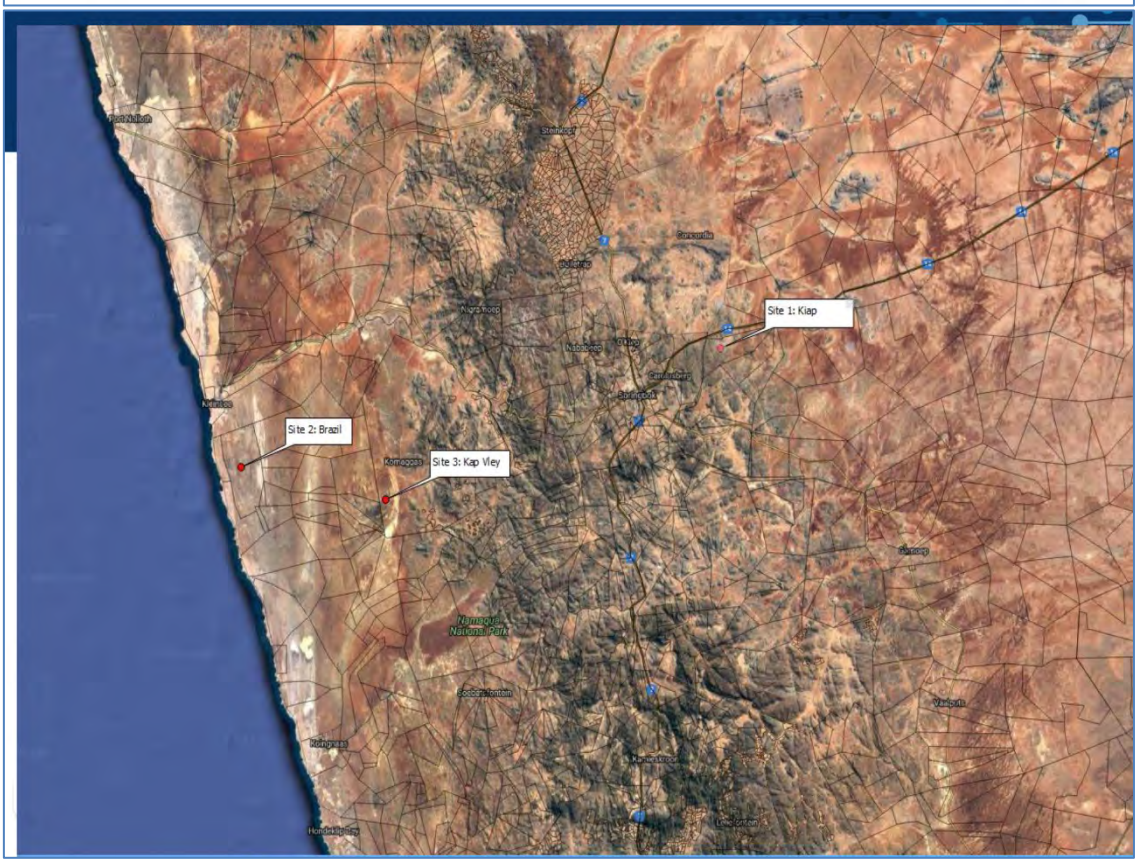


Alternatives (2)

- Alternatives for the generation of electricity from Renewable Energy Resources
- Powerline routing alternatives
  - Will be assessed by the specialists in the BA process
- No-go alternative will be assessed

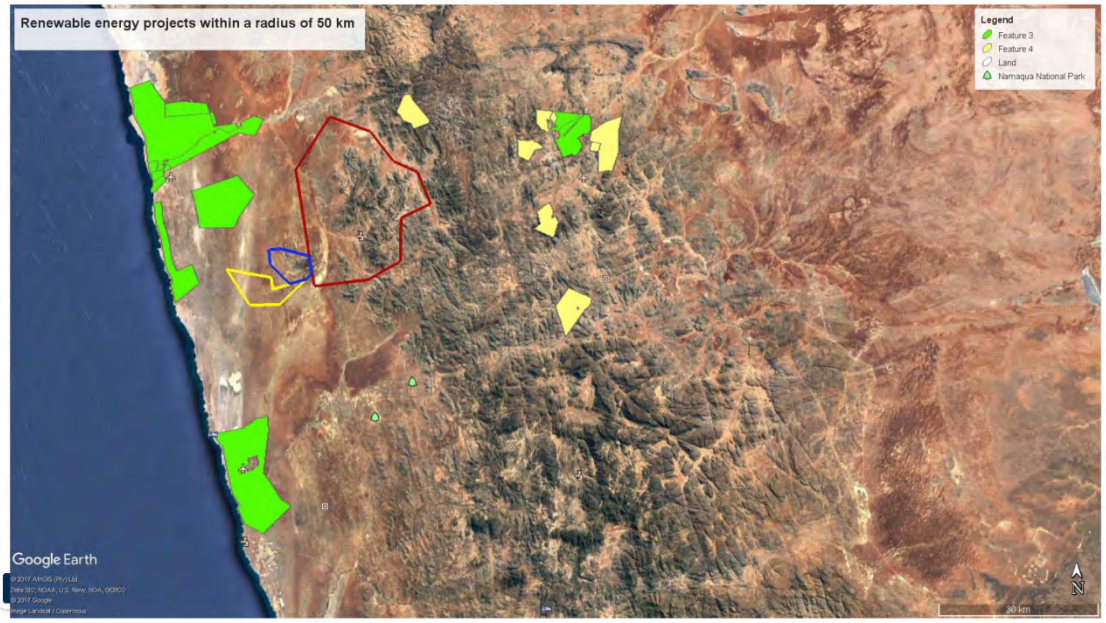
16

Cumulative impacts

- Approach
  - Cumulative impacts will be assessed by the specialists
  - Renewable energy projects within a radius of 50 km will be included and assessed.

17

Renewable Energy projects



Key Questions (1)

- Confirmation of EIA Processes/Approaches
- Confirmation on alternatives
- Uncertainty regarding turbine capacity, number and model at this stage. Will only be finalised during the EIA phase.
- Confirmation on approach to assess cumulative impacts i.e. solar developments to be assessed?
- Biodiversity Offsets Study?

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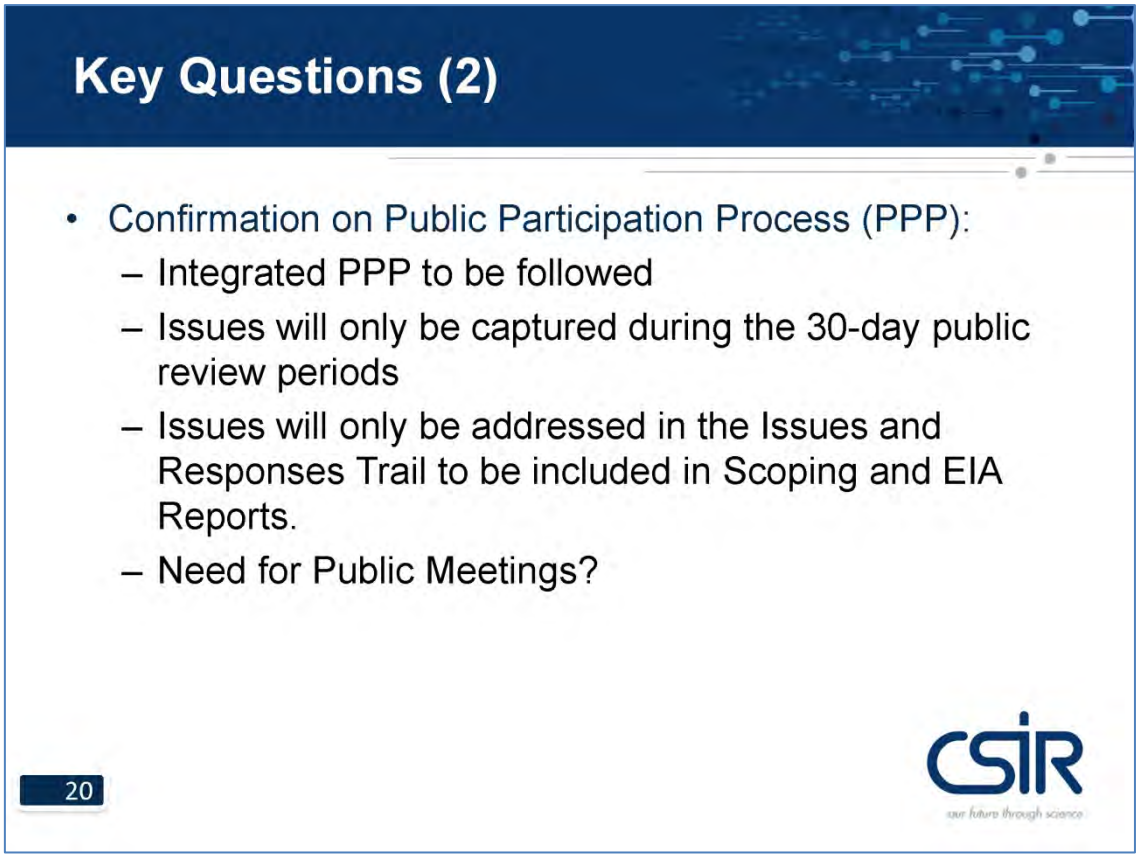
Key Questions (2)
• Confirmation on Public Participation Process (PPP):
– Integrated PPP to be followed
– Issues will only be captured during the 30-day public review periods
– Issues will only be addressed in the Issues and Responses Trail to be included in Scoping and EIA Reports.
– Need for Public Meetings?
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FURTHER QUESTIONS AND DISCUSSION
THANK YOU!
Reinett Mogotshi (CSIR)
Tel: 021 888 2432
(rmogotshi@csir.co.za
CSIR
our future through science

APPENDIX 3: Letters to provide in-principal agreement from WWF and SANParks to determine a biodiversity offset for the Kap Vley WEF project

WWF South Africa
World Wide Fund For Nature

Reg. No: 003-226 NPO
VAT No: 4820122481
Web: www.wwf.org.za
PBO No.: 130002490

Head Office:
Boundary Terraces
Bridge House, 1st Floor
Mariendahl Lane
NEWLANDS 7700
P O Box 23273
CLAREMONT 7735
Tel: +27 21 657 6600
Fax: 086 535 9433

Gauteng Office:
23 Melle Street
Cnr De Korte Street
BRAAMFONTEIN 2001
Postnet Suite 1
Private Bag X4
BRAAMFONTEIN 2017
Tel: +27 11 339 1152
08610 WWFSA (99372)
Fax: 086 538 7391

WWF *for a living planet*®

To: Corné Van Der Westhuizen
Juwi Renewable Energies (PTY) LTD
corne.vanderwesthuizen@juwi.co.za

10 August 2017

Dear Corné,

RE: In-principle support from WWF-SA for offset mechanism to expand Namaqua National Park.

WWF-SA hereby expresses our in-principle support for collaboration with Juwi Renewable Energies (PTY) LTD around the investigation of an offset mechanism to assist with the expansion of the Namaqua National Park.

As you are aware, our Land and Biodiversity Stewardship Programme is actively involved with the expansion of protected areas throughout South Africa and we are keen to explore any viable mechanism that could further our aims in this regard.

Offsets, when properly planned and implemented offer a valuable means to contribute towards protected area expansion. In meetings and correspondence with Juwi Renewable Energies a compelling opportunity for collaboration (with potential outcomes that could be of benefit to SanParks protected area expansion plans) has been presented. We are eager to explore this opportunity with Juwi and our partners to arrive at an outcome that is agreeable to all parties.

Yours Sincerely

Angus Burns
Senior Manager: WWF-SA Land & Biodiversity Stewardship Programme
Email: aburns@wwf.org.za / Mobile: *084 400 1234*

DIRECTORS: MV MOOSA (CHAIRMAN), M READ (DEPUTY CHAIRMAN), Dr MA DU PLESSIS (CHIEF EXECUTIVE), S ABRAHAMS (EXECUTIVE), C CAROLUS, AT IKALAFENG, VP KHANYILE, Dr J KING, M MAPONYANE, M MOROBE, M MSIMANG, AJ PHILLIPS, Dr J VAN ZYL, H WESSELS.

To develop and manage a system of national parks that represents the biodiversity, landscapes, and associated heritage assets of South Africa for the sustainable use and benefit of all.

South African NATIONAL PARKS

Park Planning & Development
South African National Parks
PO Box 76693
Port Elizabeth
Email: mknight@nmmu.ac.za
Tel:+27-41-5085411

2017/08/25

Ref: 13/1/2/2/6

Mr Corné Van Der Westhuizen
Juwi Renewable Energies (Pty) Ltd
Metropolitan Centre
7 Walter Sisulu Avenue
CAPE TOWN
8001

Dear Mr van der Westhuizen

In-principle support from SANParks for the proposed methodology to determine an mechanism to implement an biodiversity offset to expand the Namaqua National Park.

SANParks hereby expresses in-principle support for the proposed methodology to determine a mechanism to implement, as set out in the attached Screening Phase Offset Study for the Kap Vley Wind Farm.

The 2014 EIA Regulations, as part of the introduction of the "One Environmental System, impose very tight timeframes on BAR and S&EIR processes. In order for the biodiversity impacts to be adequately assessed and evaluated, and the mitigation sequence applied, it is desirable to evaluate the probable need for – and design of - offsets in the pre-application phase. Thus, this letter in no manner constitutes an agreement to the offset itself. Comment to this effect can only be provided once the proposed methodology has been implemented to determine an actual offset, to be evaluated.

Yours faithfully

Dr Mike Knight
GM: Park Planning and Development
South African National Parks

643 Leyds Street
MUCKLENEUK
0002

P.O. Box 787
PRETORIA
0001

Tel: 012 426-5000

central reservations: 012 428 911
reservations@sanparks.org
www.sanparks.org

APPENDIX E2: DEA LETTER OF ACKNOWLEDGEMENT OF APPLICATION FOR EIA

environmental affairs

Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

Private Bag X 447· PRETORIA · 0001· Environment House · 473 Steve Biko Road, Arcadia · PRETORIA

DEA Reference: 14/12/16/3/3/2/1046
Enquiries: Julliet Mahlangu
Tel: 012 399 9320 **E-mail:** jmmahlangu@environment.gov.za

Minnelise Levendal
Council for Scientific and Industrial Research (CSIR)
P O BOX 320
STELLEMBOSCH
7599

Tel: 021 888 2495
Email Address: mlevendal@csir.co.za

PER EMAIL / MAIL

Dear Sir/Madam

ACKNOWLEDGEMENT OF RECEIPT OF THE NEW APPLICATION FOR ENVIRONMENTAL AUTHORISATION (ENVIRONMENTAL IMPACT ASSESSMENT PROCESS) AND SCOPING REPORT FOR THE PROPOSED KAP VLEY WIND ENERGY FACILITY NEAR KLEINZEE IN THE NORTHERN CAPE PROVINCE

The Department confirms having received the Application for Environmental Authorisation and Draft Scoping Report for the abovementioned project on 31 October 2017. You have submitted these documents to comply with the Environmental Impact Assessment (EIA) Regulations, 2014, as amended.

Please take note of Regulation 40(3) of the EIA Regulations, 2014, as amended, which states that potential Interested & Affected Parties, including the Competent Authority, may be provided with an opportunity to comment on reports and plans contemplated in Regulation 40(1) of the EIA Regulations, 2014, as amended, prior to the submission of an application but must be provided an opportunity to comment on such reports once an application has been submitted to the Competent Authority.

Note that in terms of Regulation 45 of the EIA Regulations, 2014, as amended, this application will lapse if the applicant fails to meet any of the time-frames prescribed in terms of these Regulations, unless an extension has been granted by the Department in terms of Regulation 3(7) of the EIA Regulations, 2014, as amended.

You are hereby reminded of Section 24F of the National Environmental Management Act, Act No. 107 of 1998, as amended, that no activity may commence prior to an Environmental Authorisation being granted by the Department.

Kindly quote the abovementioned reference number in any future correspondence in respect of the application.

Yours sincerely

Mr Sabelo Malaza
Chief Director: Integrated Environmental Authorisations
Department of Environmental Affairs
Letter signed by: Ms Toinette van der Merwe
Designation: Environmental Officer: EIA Coordination, Strategic Planning and Support
Date: 02/11/2017

CC:	Corne van der Westhuizen	Kap Vley Wind Farm (Pty) Ltd	Email: corne.vanderwesthuizen@juwi.co.za
	Pete Clote	Springbok	Email: peter.denc87@gmail.com

APPENDIX E3: DEA LETTER OF COMMENTS ON DRAFT SCOPING REPORT

environmental affairs
Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

Private Bag X 447· PRETORIA · 0001· Environment House · 473 Steve Biko Road· PRETORIA
Tel (+ 27 12) 399 9372

DEA Reference: 14/12/16/3/3/2/1046
Enquiries: Thabile Sangweni
Telephone: (012) 399 9409 **E-mail:** TSangweni@environment.gov.za

Ms Minnelise Levendal
CSIR
PO Box 320
STELLENBOSCH
7599

Telephone Number: (021) 888 2495
Email Address: mlevendal@csir.co.za

PER E-MAIL / MAIL

Dear Ms Levendal

COMMENTS ON THE DRAFT SCOPING REPORT FOR THE PROPOSED 300MW KAP VLEY WIND ENERGY FACILITY AND ITS ASSOCIATED INFRASTRUCTURE NEAR KLEINZEE WITHIN THE NAMA KHOI LOCAL MUNICIPALITY IN THE NORTHERN CAPE PROVINCE

The draft Scoping Report (SR) dated October 2017 and received by this Department on 31 October 2017, and the application form received by this Department on 31 October 2017 refer.

This Department has the following comments on the abovementioned application:

i. Please ensure that all relevant listed activities applied for, are specific and can be linked to the development activity or infrastructure as described in the project description.
ii. If the activities applied for in the application form differ from those mentioned in the draft SR, an amended application form must be submitted with the final SR. Please note that the Department's application form template has been amended and can be downloaded from the following link https://www.environment.gov.za/documents/forms.
iii. The final SR must provide evidence that all identified and relevant competent authorities have been given an opportunity to comment on the proposed development; particularly the Square Kilometre Array South Africa, the South African Astronomical Observatory, the Northern Cape Department of Environment and Nature Conservation (DENC), the District and Local Municipalities, and the South African National Parks (SANParks).
iv. Please ensure that all issues raised and comments received, during the circulation of the draft SR, from registered I&APs and organs of state which have jurisdiction (including this Department's Biodiversity Section) in respect of the proposed activity are adequately addressed in the final SR. Proof of correspondence with the various stakeholders must be included in the final SR. Should you be unable to obtain comments, proof should be submitted to the Department of the attempts that were made to obtain comments. The Public Participation Process must be conducted in terms of Regulation 39, 40 41, 42, 43 & 44 of the EIA Regulations 2014, as amended.
v. A comments and response trail report (C&R) must be submitted with the final SR. The C&R report must incorporate all historical comments for this development. The C&R report must be a separate document from the main report and the format must be in the table format as indicated in Annexure 1 of this comments letter. Please refrain from summarising comments made by I&APs. All comments from I&APs

must be copied verbatim and responded to clearly. Please note that a response such as "Noted" is not regarded as an adequate response to I&AP's comments.

vi. Specialist studies to be conducted must provide a detailed description of their methodology, as well as indicate the locations and descriptions of turbine positions, and all other associated infrastructures that they have assessed and are recommending for authorisations.

vii. The specialist studies must also provide a detailed description of all limitations to their studies. All specialist studies must be conducted in the right season and providing that as a limitation, will not be accepted.

viii. The "in principle letters" for the process of determining an offset from WWF and SANParks dated 10 August 2017 and 25 August 2017, respectively, are noted.

ix. As advised in various email correspondence, this Department requests that all necessary information which will include inter alia the total loss of biodiversity versus the net gain, where the loss will occur and where it will be replaced, be provided in order to able to make an informed decision on the application.

x. This Department will be guided by colleagues from this Department's Protected Area Management and Biodiversity & Conservation units, as well as the DENC on the offset process. As such, the EAP must ensure that all documents related to this project are also submitted to these commenting authorities.

xi. Should the appointed specialists specify contradicting recommendations, the EAP must clearly indicate the most reasonable recommendation and substantiate this with defendable reasons; and were necessary, include further expertise advice.

xii. Please note that the Department considers a 'no-go' area, as an area where no development of any infrastructure is allowed; therefore, no development of associated infrastructure including access roads and internal cables is allowed in the 'no-go' areas.

xiii. Should the specialist definition of 'no-go' area differ from the Departments definition; this must be clearly indicated. The specialist must also indicate the 'no-go' area's buffer.

xiv. Where specialist studies are conducted in-house or by a specialist other than a suitably qualified specialist in the relevant field, such specialist reports must be peer reviewed by a suitably qualified external specialist in the relevant field. The terms of reference for the peer review must include:

- A CV clearly showing expertise of the peer reviewer;
- Acceptability of the terms of reference;
- Is the methodology clearly explained and acceptable;
- Evaluate the validity of the findings (review data evidence);
- Discuss the suitability of the mitigation measures and recommendations;
- Identify any short comings and mitigation measures to address the short comings;
- Evaluate the appropriateness of the reference literature;
- Indicate whether a site-inspection was carried out as part of the peer review; and
- Indicate whether the article is well-written and easy to understand.

xv. The bat and avifaunal specialist assessments must assess and make recommendations for definite measurements for the preferred hub heights and rotor diameter.

xvi. The proposed development is located adjacent to the authorised Eskom's Kleinzee WEF. The final SR must include a terms of reference for a wake effect analysis input to assess the impact of the proposed development on this development; where this is not necessary, specialist input must be included.

xvii. Should there be any other similar projects within a 30km radius of the proposed development site, the cumulative impact assessment for all identified and assessed impacts must be refined to indicate the following:

- Identified cumulative impacts must be clearly defined, and where possible the size of the identified impact must be quantified and indicated, i.e. hectares of cumulatively transformed land.
- Detailed process flow and proof must be provided, to indicate how the specialist's recommendations, mitigation measures and conclusions from the various similar developments in the area were taken into consideration in the assessment of cumulative impacts and when the conclusion and mitigation measures were drafted for this project.

2

- The cumulative impacts significance rating must also inform the need and desirability of the proposed development.
- A cumulative impact environmental statement on whether the proposed development must proceed.

xviii. The final SR must indicate and describe the competing land uses in the area. This must further motivate the desirability of locating the wind energy facility at the preferred location.

xix. The EAP must ensure that all appointed specialists sign the "specialist declaration of interest" form.

xx. In accordance with Appendix 2 of the EIA Regulations 2014, as amended, the details of—
(i) the EAP who prepared the report; and
(ii) the expertise of the EAP to carry out Scoping and Environmental Impact assessment procedures;
must be submitted.

xxi. You are further reminded that the final SR to be submitted to this Department must comply with all the requirements in terms of the scope of assessment and content of Scoping reports in accordance with Appendix 2 and Regulation 21(1) of the EIA Regulations 2014, as amended.

xxii. Further note that in terms of Regulation 45 of the EIA Regulations 2014, as amended, this application will lapse if the applicant fails to meet any of the timeframes prescribed in terms of these Regulations, unless an extension has been granted in terms of Regulation 3(7).

You are hereby reminded of Section 24F of the National Environmental Management Act, Act No 107 of 1998, as amended, that no activity may commence prior to an environmental authorisation being granted by the Department.

Yours faithfully

Mr Sabelo Malaza
Chief Director: Integrated Environmental Authorisations
Department of Environmental Affairs
Signed by: Mr Coenrad Agenbach
Designation: Deputy Director: Strategic Infrastructure Developments
Date: 29/11/2017

cc:	C Van der Westhuizen	Kap Vley Wind Farm (Pty) Ltd	Email: corne.vanderwesthuizen@juwi.co.za

Annexure 1

Format for Comments and Response Trail Report:

Date of comment, format of comment name of organisation/I&AP	Comment	Response from EAP/Applicant/Specialist
27/01/2016 Email Department of Environmental Affairs: Strategic Infrastructure Development (John Soap)	Please record C&R trail report in this format Please update the contact details of the provincial environmental authority	EAP: (~~Noted~~)The C&R trail report has been updated into the desired format, see Appendix K EAP: Details of provincial authority have been updated, see page 16 of the Application form

4

APPENDIX E4: DEA LETTER OF ACKNOWLEDGEMENT OF FINAL SCOPING REPORT

environmental affairs
Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

Private Bag X 447· PRETORIA · 0001· Environment House · 473 Steve Biko Road, Arcadia PRETORIA

DEA Reference: 14/12/16/3/3/2/1046
Enquiries: Phaphama Mdunywa
Tel: 012 399 8913 **E-mail:** pmdunywa@environment.gov.za

Ms Minnelise Levendal
CSIR
PO Box 320
STELLENBOSCH
7599

Tel: (021) 888 2693
Email: mlevendal@csir.co.za

PER EMAIL / MAIL

Dear Sir/Madam

ACKNOWLEDGEMENT OF RECEIPT OF THE SCOPING REPORT FOR THE PROPOSED DEVELOPMENT OF THE KAP VLEY WIND ENERGY FACILITY AND ITS ASSOCIATED INFRASTRUCTURE NEAR KLEINZEE WITHIN THE NAMA KHOI LOCAL MUNICIPALITY IN THE NORTH-EAST OF KENHARDT NORTHERN CAPE PROVINCE

The Department confirms having received the Final Scoping Report for the abovementioned project on 11 December 2017. You have submitted these documents to comply with the Environmental Impact Assessment (EIA) Regulations, 2014, as amended.

Please take note of Regulation 40(3) of the EIA Regulations, 2014, as amended, which states that potential Interested & Affected Parties, including the Competent Authority, may be provided with an opportunity to comment on reports and plans contemplated in Regulation 40(1) of the EIA Regulations, 2014, as amended, prior to the submission of an application but must be provided an opportunity to comment on such reports once an application has been submitted to the Competent Authority.

You are hereby reminded of Section 24F of the National Environmental Management Act, Act No. 107 of 1998, as amended, that no activity may commence prior to an Environmental Authorisation being granted by the Department.

Kindly quote the abovementioned reference number in any future correspondence in respect of the application.

Yours sincerely

Mr Sabelo Malaza
Chief Director: Integrated Environmental Authorisations
Department of Environmental Affairs
Letter signed by: Ms Toinette van der Merwe
Designation: Environmental Officer: EIA Coordination, Strategic Planning and Support
Date: 12/12/2017

APPENDIX E5: DEA LETTER OF ACCEPTANCE OF FINAL SCOPING REPORT

environmental affairs
Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

Private Bag X 447 · PRETORIA · 0001 · Environment House · 473 Steve Biko Road · Arcadia · PRETORIA
Tel (+ 27 12) 399 9372

DEA Reference: 14/12/16/3/3/2/1046
Enquiries: Ms Thabile Sangweni
Telephone: (012) 399 9409 **E-mail:** TSangweni@environment.gov.za

Ms Minnelise Levendal
CSIR
PO Box 320
STELLENBOSCH
7599

Telephone Number: (021) 888 2495
Email Address: mlevendal@csir.co.za

PER E-MAIL / MAIL

Dear Ms Levendal

ACCEPTANCE OF THE FINAL SCOPING REPORT FOR THE PROPOSED 300MW KAP VLEY WIND ENERGY FACILITY AND ITS ASSOCIATED INFRASTRUCTURE NEAR KLEINZEE WITHIN THE NAMA KHOI LOCAL MUNICIPALITY IN THE NORTHERN CAPE PROVINCE

The Scoping Report (SR) and Plan of Study for Environmental Impact Assessment (PoSEIA) dated December 2017 and received by this Department on 11 December 2017 refers.

This Department has evaluated the submitted SR and the PoSEIA dated December 2017 and is satisfied that the documents comply with the minimum requirements of the Environmental Impact Assessment (EIA) Regulations, 2014 as amended. The SR is hereby accepted by the Department in terms of Regulation 22 (a) of the EIA Regulations, 2014 as amended.

You may proceed with the Environmental Impact Assessment process in accordance with the tasks contemplated in the PoSEIA and the requirements of the EIA Regulations, 2014 as amended.

All comments and recommendations made by all stakeholders and Interested and Affected Parties (I&APs) in the draft SR and submitted as part of the final SR must be taken into consideration when preparing an Environmental Impact Assessment report (EIAr) in respect of the proposed development. Please ensure that all mitigation measures and recommendations in the specialist studies are addressed and included in the final EIAr and Environmental Management Programme (EMPr).

Please ensure that comments from all relevant stakeholders are submitted to the Department with the final EIAr. This includes but is not limited to the Northern Cape Department of Environment and Nature Conservation, the Department of Agriculture, Forestry and Fisheries (DAFF), the provincial Department of Agriculture, the South African Civil Aviation Authority (SACAA), the Department of Transport, the Nama Khoi Local Municipality, the Namakwa District Municipality, the Department of Water and Sanitation (DWS), the South African National Roads Agency Limited (SANRAL), the South African Heritage Resources Agency (SAHRA), BirdLife SA, the Department of Mineral Resources, the Department of Rural Development and Land Reform, the Square Kilometre Array South Africa (SKA-SA), the Department of Environmental Affairs: Directorate Biodiversity and Conservation, the Department of Environmental Affairs: Directorate Protected Area Management.

You are also required to address all issues raised by Organs of State and I&APs prior to the submission of the EIAr to the Department.

Proof of correspondence with the various stakeholders must be included in the EIAr. Should you be unable to obtain comments, proof should be submitted to the Department of the attempts that were made to obtain comments.

The EAP must, in order to give effect to Regulation 8, give registered I&APs access to, and an opportunity to comment on the report in writing within 30 days before submitting the final EIAr to the Department.

In addition, the following additional information is required for the EIAr:

i. The EIAr must provide an assessment of the impacts and mitigation measures for each of the listed activities applied for.
ii. The listed activities represented in the EIAr and the application form must be the same and correct.'
iii. The EIAr must assess the correct sub listed activity for each listed activity applied for. Please note that the EAP must remove any sub-listed activities that are not listed from the application form and assessment reports.
iv. The EAP must provide landowner consent for all farm portions affected by the proposed project, whether the project component is linear or not, i.e. all farm portions where the pipeline, access road, wind turbines and associated infrastructure is to be located.
v. The EIAr must provide the technical details for the proposed facility in a table format as well as their description and/or dimensions. A sample for the minimum information required is listed under point 2 of the EIA information required for wind energy facilities below.
vi. The EIAr must provide the four corner coordinate points for the proposed development site (note that if the site has numerous bend points, at each bend point coordinates must be provided) as well as the start, middle and end point of all linear activities.
vii. The EIAr must provide the following:
    - Clear indication of the envisioned area for the proposed wind energy facility; i.e. placing of wind turbines and all associated infrastructure should be mapped at an appropriate scale.
    - Clear description of all associated infrastructure. This description must include, but is not limited to the following:
        - Powerlines;
        - Internal roads infrastructure; and;
        - All supporting onsite infrastructure such as laydown area, guard house and control room etc.
        - All necessary details regarding all possible locations and sizes of the proposed satellite substation and the main substation.
viii. The EIAr must also include a comments and response report in accordance with Appendix 2 h (iii) of the EIA Regulations, 2014 as amended.
ix. Comments in Afrikaans must be translated into English in the comments and response report.
x. The EIAr must include the detail inclusive of the PPP in accordance with Regulation 41 of the EIA Regulations, 2014 as amended.
xi. Details of the future plans for the site and infrastructure after decommissioning in 20-30 years and the possibility of upgrading the proposed infrastructure to more advanced technologies.
xii. The terms of reference (ToR) for the following specialist studies are accepted to be assessed in the assessment phase:

Specialist study	Appointed specialist
Avifauna	Arcus
Bat	Arcus
Terrestrial Ecology (including flora and fauna)	Simon Todd
Biodiversity Offset Study	Simon Todd
Aquatic Impact Assessment	CSIR (Peer reviewed by Freshwater Consulting)

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Visual Impact Assessment	Landscape Architect and BOLA
Heritage Impact Assessment (Archaeology and Cultural Landscape)	ASHA Consulting (Pty) Ltd
Desktop Paleontological Impact Assessment	ASHA Consulting (Pty) Ltd
Soils and Agricultural Potential Assessment	Johann Lanz
Socio-Economic Impact Assessment	CSIR (Peer reviewed by Urban-Econ Development Economists
Noise Impact Assessment	Enviro-Acoustic Research
Transportation Impact Assessment	WSP Group Africa
Wake Effect Analysis	Not yet appointed

xiii. All specialist studies must be undertaken at the most appropriate time, and detailed reasons must be provided for why the study was undertaken during the said period.

xiv. Where specialist studies are conducted in-house or by a specialist other than a suitably qualified specialist in the relevant field, such specialist reports must be peer reviewed by a suitably qualified external specialist in the relevant field. The terms of reference for the peer review must include:

- A CV clearly showing expertise of the peer reviewer;
- Acceptability of the terms of reference;
- Is the methodology clearly explained and acceptable;
- Evaluate the validity of the findings (review data evidence);
- Discuss the suitability of the mitigation measures and recommendations;
- Identify any short comings and mitigation measures to address the short comings;
- Evaluate the appropriateness of the reference literature;
- Indicate whether a site-inspection was carried out as part of the peer review; and
- Indicate whether the article is well-written and easy to understand.

xv. The EIAr must adhere to the all the comments issued by this Department on the Draft SR dated 29 November 2017.

xvi. The "in principle letters" for the process of determining an offset from WWF and SANParks dated 10 August 2017 and 25 August 2017, respectively, are noted.

xvii. As advised in various email correspondence, this Department requests that all necessary information which will include inter alia the total loss of biodiversity versus the net gain, where the loss will occur and where it will be replaced, be provided in order to able to make an informed decision on the application.

xviii. This Department will be guided by colleagues from this Department's Protected Area Management and Biodiversity & Conservation units, as well as the DENC on the offset process. As such, the EAP must ensure that all documents related to this project are also submitted to these commenting authorities.

xix. Based on the above, as well as the Scoping process identifying the majority of the turbines located in medium to high and very high sensitivity areas, the EAP must assess location alternatives within the assessed areas.

xx. The bat and avifaunal specialist assessments must assess and make recommendations for definite measurements for the preferred hub heights and rotor diameter.

xxi. The specialist studies to be conducted must provide a detailed description of their methodology, as well as indicate the locations and descriptions of turbines that they have assessed.

xxii. The specialist studies must also provide a detailed description of all limitations to their studies. It must be also noted that all specialist studies must be conducted in the correct season, and conducting a specialist study in the incorrect season and providing that as a limitation will not be allowed.

xxiii. Should the appointed specialists specify contradicting recommendations, the EAP must clearly indicate the most reasonable recommendation and substantiate this with defendable reasons; and where necessary, include further expertise advice.

xxiv. Please note that the Department considers a 'no-go' area, as an area where no development of any infrastructure is allowed; therefore, no development of associated infrastructure including access roads and internal cables is allowed in the 'no-go' areas.

xxv. Should the specialist definition of 'no-go' area differ from the Department's definition; this must be clearly indicated. The specialist must also indicate the 'no-go' area's buffer.

xxvi. The EIAr must provide a detailed description of the need and desirability, not only providing motivation on the need for clean energy in South Africa of the proposed activity. The need and desirability must also indicate if the proposed development is needed in the region and if the current proposed location is desirable for the proposed activity compared to other sites. The need and desirability must take into account cumulative impacts of the proposed development in the area.

xxvii. The proposed development is located adjacent to the authorised Eskom's Kleinzee WEF. The PoSEIA in the final SR must include a terms of reference for a wake effect analysis input to assess the impact of the proposed development on this development; where this is not necessary, specialist input must be included.

xxviii. The EIAr must include a detailed **cumulative impact assessment** of the facility if there are other similar facilities within a 30km radius of the proposed development site. All the specialist studies e.g. biodiversity, visual, heritage etc. in the PoSEIA which is incorporated as part of the SR must also assess the facility in terms of potential cumulative impacts. The cumulative impact assessment for all identified and assessed impacts must indicate the following:

- Identified cumulative impacts must be clearly defined, and where possible the size of the identified impact must be quantified and indicated, i.e. hectares of cumulatively transformed land.
- Detailed process flow and proof must be provided, to indicate how the specialist's recommendations, mitigation measures and conclusions from the various developments in the area were taken into consideration in the assessment of cumulative impacts and when the conclusion and mitigation measures were drafted for this project.
- Identified cumulative impacts associated with the proposed development must be rated with the significance rating methodology approved with the acceptance of the scoping report.
- The cumulative impact significance rating must also inform the need and desirability of the proposed development.
- A cumulative impact environmental statement on whether the proposed development must proceed.

xxix. Please note that information on location of renewable energy developments can be accessed from https://www.environment.gov.za/mapsgraphics.

xxx. A copy of the final site layout map. All available biodiversity information must be used in the finalisation of the layout map. Existing infrastructure must be used as far as possible e.g. roads. The layout map must indicate the following:

- Wind turbine positions (numbered) and its associated infrastructure;
- Permanent laydown area footprint;
- Internal roads indicating width (construction period width and operation period width) and with numbered sections between the other site elements which they serve (to make commenting on sections possible);
- Wetlands, drainage lines, rivers, stream and water crossing of roads and cables indicating the type of bridging structures that will be used;
- The location of sensitive environmental features on site e.g. CBAs, heritage sites, wetlands, drainage lines etc. that will be affected by the facility and its associated infrastructure;
- Substation(s) and/or transformer(s) sites including their entire footprint;
- Connection routes (including pylon positions) to the distribution/transmission network;
- All existing infrastructure on the site, especially roads;
- Buffer areas;
- Buildings, including accommodation; and
- All "no-go" areas.

xxxi. An environmental sensitivity map indicating environmental sensitive areas and features identified during the EIA process.

xxxii. A map combining the final layout map superimposed (overlain) on the environmental sensitivity map.

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xxxiii. A shapefile of the preferred development layout/footprint must be submitted to this Department. The shapefile must be created using the Hartebeesthoek 94 Datum and the data should be in Decimal Degree Format using the WGS 84 Spheroid. The shapefile must include at a minimum the following extensions i.e. .shp; .shx; .dbf; .prj; and, .xml (Metadata file). If specific symbology was assigned to the file, then the .avl and/or the .lyr file must also be included. Data must be mapped at a scale of 1:10 000 (please specify if an alternative scale was used). The metadata must include a description of the base data used for digitizing. The shapefile must be submitted in a zip file using the EIA application reference number as the title. The shape file must be submitted to:

Postal Address:
Department of Environmental Affairs
Private Bag X447
Pretoria
0001

Physical address:
Environment House
473 Steve Biko Road
Pretoria

For Attention: Muhammad Essop
Integrated Environmental Authorisations
Strategic Infrastructure Developments
Telephone Number: (012) 399 9406
Email Address: MEssop@environment.gov.za

The Environmental Management Programme (EMPr) to be submitted as part of the EIAr must include the following:

i. All recommendations and mitigation measures recorded in the EIAr and the specialist studies conducted.
ii. The final site layout map.
iii. Measures as dictated by the final site layout map and micro-siting.
iv. An environmental sensitivity map indicating environmental sensitive areas and features identified during the EIA process.
v. A map combining the final layout map superimposed (overlain) on the environmental sensitivity map.
vi. An alien invasive management plan to be implemented during construction and operation of the facility. The plan must include mitigation measures to reduce the invasion of alien species and ensure that the continuous monitoring and removal of alien species is undertaken.
vii. A plant rescue and protection plan which allows for the maximum transplant of conservation important species from areas to be transformed. This plan must be compiled by a vegetation specialist familiar with the site and be implemented prior to commencement of the construction phase.
viii. An avifauna monitoring and management plan to be implemented during the construction and operation of the facility. This plan must be drafted by a suitably qualified avifauna specialist.
ix. A re-vegetation and habitat rehabilitation plan to be implemented during the construction and operation of the facility. Restoration must be undertaken as soon as possible after completion of construction activities to reduce the amount of habitat converted at any one time and to speed up the recovery to natural habitats.
x. An open space management plan to be implemented during the construction and operation of the facility.
xi. A traffic management plan for the site access roads to ensure that no hazards would result from the increased truck traffic and that traffic flow would not be adversely impacted. This plan must include measures to minimize impacts on local commuters e.g. limiting construction vehicles travelling on public roadways during the morning and late afternoon commute time and avoid using roads through densely populated built-up areas so as not to disturb existing retail and commercial operations.

xii. A transportation plan for the transport of components, main assembly cranes and other large pieces of equipment.
xiii. A storm water management plan to be implemented during the construction and operation of the facility. The plan must ensure compliance with applicable regulations and prevent off-site migration of contaminated storm water or increased soil erosion. The plan must include the construction of appropriate design measures that allow surface and subsurface movement of water along drainage lines so as not to impede natural surface and subsurface flows. Drainage measures must promote the dissipation of storm water run-off.
xiv. A fire management plan to be implemented during the construction and operation of the facility.
xv. An erosion management plan for monitoring and rehabilitating erosion events associated with the facility. Appropriate erosion mitigation must form part of this plan to prevent and reduce the risk of any potential erosion.
xvi. An effective monitoring system to detect any leakage or spillage of all hazardous substances during their transportation, handling, use and storage. This must include precautionary measures to limit the possibility of oil and other toxic liquids from entering the soil or storm water systems.
xvii. Measures to protect hydrological features such as streams, rivers, pans, wetlands, dams and their catchments, and other environmental sensitive areas from construction impacts including the direct or indirect spillage of pollutants.

The EAP must provide detailed motivation if any of the above requirements is not required by the proposed development and not included in the EMPr.

The EAP must provide the final detailed Site Layout Plan as well as the final EMPr for approval with the final EIAr as this Department needs to make a decision on the EA, EMPr and Layout Plan.

Please ensure that all the relevant Listing Notice activities are applied for, that the Listing Notice activities applied for are specific and that they can be linked to the development activity or infrastructure in the project description.

You are hereby reminded that should the EIAr fail to comply with the requirements of this acceptance letter, the project will be **refused** in accordance with Regulation 24(1)(b) of the EIA Regulations, 2014 as amended.

The applicant is hereby reminded to comply with the requirements of Regulation 45 with regard to the time period allowed for complying with the requirements of the Regulations, and Regulations 43 and 44 with regard to the allowance of a comment period for interested and affected parties on all reports submitted to the competent authority for decision-making. The reports referred to are listed in Regulation 43(1).

Furthermore, it must be reiterated that, should an application for Environmental Authorisation be subject to the provisions of Chapter II, Section 38 of the National Heritage Resources Act, Act 25 of 1999, then this Department will not be able to make nor issue a decision in terms of your application for Environmental Authorisation pending a letter from the pertinent heritage authority categorically stating that the application fulfils the requirements of the relevant heritage resources authority as described in Chapter II, Section 38(8) of the National Heritage Resources Act, Act 25 of 1999. Comments from SAHRA and/or the provincial department of heritage must be provided in the EIAr.

You are requested to submit two (2) electronic copies (1 CD/DVD and 1 USB) and one (1) hard copy of the EIAr to the Department as per Regulation 23(1) of the EIA Regulations, 2014.

Please also find attached information that must be used in the preparation of the EIAr. This will enable the Department to speedily review the EIAr and make a decision on the application.

You are hereby reminded of Section 24F of the National Environmental Management Act, Act No 107 of 1998, as amended, which stipulates that no activity may commence prior to an Environmental Authorisation being granted by the Department.

Yours faithfully

Mr Sabelo Malaza
Chief Director: Integrated Environmental Authorisations
Department of Environmental Affairs
Letter Signed by: Mr Coenrad Agenbach
Designation: Deputy Director: Strategic Infrastructure Developments
Date: 12/02/2008

cc:	C Van der Westhuizen	Kap Vley Wind Farm (Pty) Ltd	Email: corne.vanderwesthuizen@juwi.co.za

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A. EIA INFORMATION REQUIRED FOR WIND ENERGY FACILITIES

1. General site information

The following general site information is required:

- Descriptions of all affected farm portions
- 21 digit Surveyor General codes of all affected farm portions
- Copies of deeds of all affected farm portions
- Photos of areas that give a visual perspective of all parts of the site
- Photographs from sensitive visual receptors (tourism routes, tourism facilities, etc.)
- Facility design specifications including:
  - Type of technology
  - Structure height
  - Surface area to be covered (including associated infrastructure such as roads)
  - Structure orientation
  - Laydown area dimensions (construction period and thereafter)
  - Generation capacity
- Generation capacity of the facility as a whole at delivery points

This information must be indicated on the first page of the EIAr. It is also advised that it be double checked as there are too many mistakes in the applications that have been received that take too much time from authorities to correct.

2. Sample of technical details for the proposed facility:

Component	Description/ Dimensions
Location of the site	
Facility area	
SG Codes	
Site access	
Export capacity	
Proposed technology	
Hub height from ground level	
Rotor diameter	
Area occupied by substations	
Area occupied by both permanent and construction laydown areas	
Area occupied by buildings	
Width and length of internal roads	
Proximity to grid connection	
Type and height of fencing	

3. Site maps and GIS information

Site maps and GIS information should include at least the following:

- All maps/information layers must also be provided in ESRI Shapefile format
- All affected farm portions must be indicated
- The exact site of the application must be indicated (the areas that will be occupied by the application)

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- A status quo map/layer must be provided that includes the following:
  - Current use of land on the site including:
    - Buildings and other structures
    - Agricultural fields
    - Grazing areas
    - Natural vegetation areas (natural veld not cultivated for the preceding 10 years) with an indication of the vegetation quality as well as fine scale mapping in respect of Critical Biodiversity Areas and Ecological Support Areas
    - Critically endangered and endangered vegetation areas that occur on the site
    - Bare areas which may be susceptible to soil erosion
    - Cultural historical sites and elements
  - Rivers, streams and water courses
  - Ridgelines and 20m continuous contours with height references in the GIS database
  - Fountains, boreholes, dams (in-stream as well as off-stream) and reservoirs
  - High potential agricultural areas as defined by the Department of Agriculture, Forestry and Fisheries
  - Buffer zones (also where it is dictated by elements outside the site):
    - 500m from any irrigated agricultural land
    - 1km from residential areas
  - Indicate isolated residential, tourism facilities on or within 1km of the site
- A slope analysis map/layer that include the following slope ranges:
  - Less than 8% slope (preferred areas for WIND TURBINE and infrastructure)
  - between 8% and 12% slope (potentially sensitive to WIND TURBINE and infrastructure)
  - between 12% and 14% slope (highly sensitive to WIND TURBINE and infrastructure)
  - steeper than 18 % slope (unsuitable for WIND TURBINE and infrastructure)
- A site development proposal map(s)/layer(s) that indicate:
  - Foundation footprint
  - Permanent laydown area footprint
  - Construction period laydown footprint
  - Internal roads indicating width (construction period width and operation period width) and with numbered sections between the other site elements which they serve (to make commenting on sections possible)
  - River, stream and water crossing of roads and cables indicating the type of bridging structures that will be used
  - Substation(s) and/or transformer(s) sites including their entire footprint.
  - Cable routes and trench dimensions (where they are not along internal roads)
  - Connection routes to the distribution/transmission network (the connection must form part of the EIA even if the construction and maintenance thereof will be done by another entity such as ESKOM)
  - Cut and fill areas at WIND TURBINE sites along roads and at substation/transformer sites indicating the expected volume of each cut and fill
  - Borrow pits
  - Spoil heaps (temporary for topsoil and subsoil and permanently for excess material)
  - Buildings including accommodation

With the above information authorities will be able to assess the strategic and site impacts of the application.

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4. **Regional map and GIS information**

The regional map and GIS information should include at least the following:

- All maps/information layers must also be provided in ESRI Shapefile format
- The map/layer must cover an area of 20km around the site
- Indicate the following:
  - roads including their types (tarred or gravel) and category (national, provincial, local or private)
  - Railway lines and stations
  - Industrial areas
  - Harbours and airports
  - Electricity transmission and distribution lines and substations
  - Pipelines
  - Waters sources to be utilised during the construction and operational phases
  - A visibility assessment of the areas from where the facility will be visible
  - Critical Biodiversity Areas and Ecological Support Areas
  - Critically Endangered and Endangered vegetation areas
  - Agricultural fields
  - Irrigated areas
  - An indication of new road or changes and upgrades that must be done to existing roads in order to get equipment onto the site including cut and fill areas and crossings of rivers and streams

5. **Important stakeholders**

Amongst other important stakeholders, comments from the National Department of Agriculture, Forestry and Fisheries must be obtained and submitted to the Department. Any application, documentation, notification etc. should be forwarded to the following officials:

Ms Mashudu Marubini
Delegate of the Minister (Act 70 of 1970)
E-mail: MashuduMa@daff.gov.za
Tel 012- 319 7619

Ms Thoko Buthelezi
AgriLand Liaison office
E-mail: ThokoB@daff.gov.za
Tel 012- 319 7634

All hardcopy applications / documentation should be forwarded to the following address:

Physical address:
Delpen Building
Cnr Annie Botha and Union Street
Office 270
Attention: Delegate of the Minister Act 70 of 1970

Postal Address:
Department of Agriculture, Forestry and Fisheries
Private Bag X120
Pretoria
0001
Attention: Delegate of the Minister Act 70 of 1970

In addition, comments must be requested from Eskom regarding grid connectivity and capacity. Request for comment must be submitted to:

Mr John Geeringh
Eskom Transmission
Megawatt Park D1Y38
PO Box 1091
JOHANNESBURG
2000

Tel: 011 516 7233
Fax: 086 661 4064
John.geeringh@eskom.co.za

B. AGRICULTURE STUDY REQUIREMENTS

- Detailed soil assessment of the site in question, incorporating a radius of 50 m surrounding the site, on a scale of 1:10 000 or finer. The soil assessment should include the following:
  - Identification of the soil forms present on site
  - The size of the area where a particular soil form is found
  - GPS readings of soil survey points
  - The depth of the soil at each survey point
  - Soil colour
  - Limiting factors
  - Clay content
  - Slope of the site
  - A detailed map indicating the locality of the soil forms within the specified area,
  - Size of the site
- Exact locality of the site
- Current activities on the site, developments, buildings
- Surrounding developments / land uses and activities in a radius of 500 m of the site
- Access routes and the condition thereof
- Current status of the land (including erosion, vegetation and a degradation assessment)
- Possible land use options for the site
- Water availability, source and quality (if available)
- Detailed descriptions of why agriculture should or should not be the land use of choice
- Impact of the change of land use on the surrounding area
- A shape file containing the soil forms and relevant attribute data as depicted on the map.

C. ASTRONOMY GEOGRAPHIC ADVANTAGE ACT, 2007 (ACT NO. 21 OF 2007)

The purpose of the Act is to preserve the geographic advantage areas that attract investment in astronomy. The entire Northern Cape Province excluding the Sol Plaatjie Municipality had been declared an astronomy advantage area. The Northern Cape optical and radio telescope sites were declared core astronomy advantage areas. The Act allowed for the declaration of the Southern Africa Large Telescope (SALT), MeerKAT and Square Kilometre Array (SKA) as astronomy and related scientific endeavours that had to be protected.

You are requested to indicate the applicability of the Astronomy Geographic Advantage Act, Act No. 21 of 2007 on the application in the BAR/EIR. You must obtain comments from the Southern African Large Telescope (SALT) if the proposed development is situated within a declared astronomy advantage area.

APPENDIX E6: DEA LETTER OF ACKNOWLEDGEMENT OF DEIAR

environmental affairs

Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

Private Bag X 447 · PRETORIA · 0001 · Environment House · 473 Steve Biko Road, Arcadia · PRETORIA

DEA Reference: 14/12/16/3/3/2/1046
Enquiries: Ms Salome Mambane
Tel: 012 399 9385 **E-mail:** SMambane@environment.gov.za

Minnelise Levendal
CSIR Environmental Management Services
PO Box 320
STELLENBOSCH
7599

Tel: 021 888 2432
Email: kstroebel@csir.co.za

PER EMAIL / MAIL

Dear Sir/Madam

ACKNOWLEDGEMENT OF RECEIPT OF THE ENVIRONMENTAL IMPACT ASSESSMENT REPORT FOR THE PROPOSED DEVELOPMENT OF THE KAP VLEY WIND ENERGY FACILITY AND ITS ASSOCIATED INFRASTRUCTURE NEAR KLEINZEE WITHIN THE NAMA KHOI LOCAL MUNICIPALITY IN THE NORTHERN CAPE PROVINCE

The Department confirms having received the Draft Environmental Impact Assessment Report for the abovementioned project on 12 April 2018. You have submitted these documents to comply with the Environmental Impact Assessment Regulations (EIA), 2014, as amended.

Please take note of Regulation 40(3) of the EIA Regulations, 2014, as amended, which states that potential Interested & Affected Parties, including the Competent Authority, may be provided with an opportunity to comment on reports and plans contemplated in Regulation 40(1) of the EIA Regulations, 2014, as amended, prior to the submission of an application but must be provided an opportunity to comment on such reports once an application has been submitted to the Competent Authority.

You are hereby reminded of Section 24F of the National Environmental Management Act, Act No. 107 of 1998, as amended, that no activity may commence prior to an Environmental Authorisation being granted by the Department.

Kindly quote the abovementioned reference number in any future correspondence in respect of the application.

Yours sincerely

Mr Sabelo Malaza
Chief Director: Integrated Environmental Authorisations
Department of Environmental Affairs
Letter signed by: Ms Azrah Essop
Designation: Environmental Officer Specialized Production: EIA Coordination, Strategic Planning and Support

Date: 18 April 2018

APPENDIX E7: NOTIFICATION TO SUBMIT KAP VLEY FEIAR

CSIR Environmental Management Services
PO Box 320, Stellenbosch, 7599
Tel: +27 21 888 2495/2661
Email: mlevendal@csir.co.za

28 May 2018

Department of Environmental Affairs
Environment House
473 Steve Biko Road
Arcadia
Pretoria
0001

Attention: Mr Coenrad Agenbach
Tel: 012 399 9403
Email: cagenbach@environment.gov.za; tsangweni@environment.gov.za;
EiaAdmin@environment.gov.za (cc)
(submitted by courier and email to Mr Coenrad Agenbach and Ms Thabile Sangweni)

Dear Mr. Agenbach,

RE: NOTIFICATION OF THE EXTENSION OF THE SUBMISSION OF FINAL ENVIRONMENTAL IMPACT ASSESSMENT REPORT AS PER REGULATION 23 (1)(b) OF THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT (NEMA) EIA REGULATIONS, AS AMENDED (7 APRIL 2017) FOR THE PROPOSED KAP VLEY WIND ENERGY FACIILITY NEAR KLEINZEE, NORTHERN CAPE

DEA Reference numbers: 14/12/16/3/3/2/1046

The Department of Environmental Affairs (DEA) is hereby notified that the Final Environmental Impact Assessment Report (FEIAR), and the Environmental Management Programme (EMPr) will be submitted within 156 days of the acceptance of the Scoping Report by DEA, i.e. on 12 February 2018. The FEIAR will therefore be submitted by 23 July 2018 (excluding public holidays) and not by 4 June 2018 as per the initial deadline.

This notification is submitted in terms of Regulation 23 (1)(b) as significant new information will be added to the Draft EIA Report (DEIAR) following comments received from the Northern Cape Department of Environment and Nature Conservation (DENC) on the DEIAR in their letter dated 25 May 2018 (see Appendix 1). This information was not contained in the DEIAR and EMPr that were consulted on during the initial public participation process contemplated in subregulation (1)(a). The comments from DENC will be incorporated in the DEIAR and the revised DEIAR and EMPr will be subjected to another public participation process of 30 days.

Following the 30-day commenting period, the comments received on the revised DEIAR will be incorporated in the FEIAR which will be submitted to DEA for decision-making.

The changes that will be made to the DEIAR following the comments from DENC include *inter alia*:

Board members: Prof T. Majozi (Chairperson), Adv G. Badela, Ms P. Baleni, Dr P. Goyns, Dr A. Llobell, Dr R. Masango, Ms M. Maseko, Mr J. Netshitenzhe, Ms A. Noah, Prof M. Phakeng, Dr S. Sibisi (CEO)
www.csir.co.za

1. The Terrestrial Ecological study will be updated to address the comments from DENC; and
2. The Ecological Offset Report will be revised and will be submitted for peer review and sign-off by an accredited and recognized biodiversity offset specialist.

In addition to the changes mentioned above that will be made to the DEIAR, the revised DEIAR will also include the following:

1. Comments from SANPARKS on the DEIAR, in particular on the Ecological Offset study; and
2. An updated EMPr which will include a Heritage Maintenance Plan (HMP) as requested by SAHRA in their letter dated 24 May 2018 (Appendix 2).

Based on the new information that will be included in the revised DEIAR that will be circulated for a 30-day commenting period, additional time is required to submit the FEIAR to DEA. This letter therefore serves as notification to DEA that the FEIAR will be submitted within 156 days of the acceptance of the Scoping Report by DEA, as allowed for in Regulation 23 (1) (b) and Regulation 23 (2) of the NEMA EIA Regulations, as amended.

Please do not hesitate to contact me should you have any queries relating to the above.

Sincerely,

Minnelise Levendal
EAP-Project Leader
CSIR Environmental Management Services

cc	Corne van der Westhuizen	Representative of Project Applicant (juwi)	corne.vanderwesthuizen@juwi.co.za
cc	Elsabe Swart	Representative of DENC	Elsabe.dtec@gmail.com
cc	Willem Louw	Representative of SANPARKS	Willem.Louw@sanparks.org

Appendix 1: Letter from Northern Cape Department of Environment and Nature Conservation (DENC) to provide comments on the DEIAR (dated 25 May 2018)

Note: Please see letter included in Appendix E9 below.

Appendix 2: Letter from SAHRA (dated 24 May 2018)

Proposed development of 300 MW Kap Vley Wind Energy Facility near Kleinzee, Northern Cape

Our Ref:

an agency of the
Department of Arts and Culture

T: +27 21 462 4502 | F: +27 21 462 4509 | E: info@sahra.org.za
South African Heritage Resources Agency | 111 Harrington Street | Cape Town
P.O. Box 4637 | Cape Town | 8001
www.sahra.org.za

Enquiries: Natasha Higgitt
Tel: 021 462 4502
Email: nhiggitt@sahra.org.za
CaseID: 11654

Date: Thursday May 24, 2018

Final Comment

In terms of Section 38(4), 38(8) of the National Heritage Resources Act (Act 25 of 1999)

Attention: Mr Corne van der Westhuizen
juwi Renewable Energies South Africa (Pty) Ltd

juwi Renewable Energies (Pty) Ltd (hereinafter referred to as "juwi") proposes to construct and operate a 300 MW Wind Energy Facility (WEF) and associated electrical infrastructure (subject to a separate Basic Assessment Process), The proposed Kap Vley WEF will be constructed on the following land: Remainder (RE) Kommagas Farm 200 Portion 5, RE Kap Vley Farm 315, Portion 1 of Kap Vley Farm 315, Portion 2 of Kap Vley Farm 315, Portion 3 of Kap Vley Farm 315, Portion 3 of Platvley Farm 314, RE Kourootjie Farm 316 and RE Gra'water Farm 331

The CSIR was appointed by juwi Renewable Energies (Pty) Ltd to conduct a Scoping and Environmental Impact Assessment (S&EIA) Process in support of an Environmental Authorisation Application for the Proposed 300MW Kap Vley Wind Energy Facility, near Kleinzee, Northern Cape Province.

A draft Scoping Report (DSR) has been completed in terms of the National Environmental Management Act, 1998 (NEMA) and the 2017 EIA Regulations. The proposed development will comprise the construction of 20-56 turbines, reinforced concrete foundations 20 m x 20 m, a crane platform 1.4 ha each, a collector substation, operations and maintenance buildings, site office, laydown area, on-site concrete batching plant, service roads, and a 132kv transmission line.

ASHA Consulting (Pty) Ltd has been appointed to conduct the Heritage Component of the S&EIA process.

Orton, J. 2017. Scoping Inputs from the Specialist: Heritage Impact Assessment. Scoping and Environmental Impact Assessment for the proposed Kap Vley Wind Energy Facility, Namakwaland Magisterial District, Northern Cape Province: Scoping Report.

The Heritage Scoping Report identified a total of 28 heritage resources which includes surface scatters of Stone Age lithics and associated material, two burial grounds, historical structures and associated material, historical werf, stone walled features and foundations. Sites KAP2017/001, KAP2017/003, KAP2017/005, GRW2017/001, KAP2017/006, PAN2017/004, PAN2017/005, KAP2017/009 were rated as low medium significance sites, KAP2017/002 (the site contains an old bees nest), KAP2017/004, KAP2017/008 rated as medium significance sites, PAN2017/002 were rated as medium-low significance sites, and PAN2017/001 and PAN2017/003 were rated as highly significant sites. The cultural landscape of the proposed development area

an agency of the
Department of Arts and Culture

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has an intangible heritage component i.e. The White Dunes as referenced by historical travelers and in historical maps, the "coloured reserve" in which traditional stock farming and the collection of medicinal plants occurred, and the reference to local San gathering the honey from the bees nests to make honey beer (presumably site KAP2017/002).

Recommendations provided in the report include the following:

- Sites that require mitigation include KAP2017001-006, 008,009 and GRW2017/001;
- Sites to be cordoned off and protected include PAN2017/001-005 and KOM2017/001.

Pether, J. 2017. Brief Palaeontological Assessment (Desktop Study): Proposed Kap Vley Wind Energy Facility Namakwa District Municipality, Northern Cape.

The proposed development area is located within the Springbok Formation which does not contain fossils. The ridges and surficial coversands may contain alluvial deposits that may contain fossil material. The overall impact of the proposed development on palaeontological material is rated as low.

It is recommended that a requirement to be alert for possible fossils and buried archaeological material be included in the Environmental Management Programme (EMPr) for the Construction Phases of the Kap Vley WEF, with a Fossil Finds Procedure in place. In the event of the exposure of fossil bones all work at that spot must cease and the Environmental Control Office (ECO) must inform SAHRA and a professional palaeontologist, who will then decide if avoidance or mitigation are preferred. Only a professional palaeontologist may excavate uncovered fossils with a valid mitigation permit from SAHRA.

In an Interim Comment issue on the 01/12/2017, SAHRA noted the Heritage Scoping Report and would await the pending Heritage Impact Assessment (HIA) as part of the draft EIA Phase as stated in Table 1.3 on page 14 of the DSR. SAHRA also noted that the Visual Impact of the proposed development on heritage resources and any comments provided by the public regarding heritage resources must be taken into consideration. The Draft Environmental Impact Assessment Report (DEIR) has now been submitted.

Orton, J. 2018. Heritage Impact Assessment: Scoping and Environmental Impact Assessment for the Kap Vley Wind Energy Facility, Namakwaland Magisterial District, Northern Cape Province: EIA Report. (Appendix L of the DEIR).

A total of 28 heritage resources were identified within the development area. These include surface scatters and rock shelters containing Later Stone Age tools, some with other artefacts such as ostrich eggshell

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fragments, marine shell fragments and hammer stones, rated as sites of between low, low-medium and medium significance ratings, a historical farmhouse of medium-low significance with associated features of low significance, two stone foundations with associated historical artefacts scatters if low-medium significance, surface scatters of historical artefacts of low significance, a stone farm boundary beacon of low significance and two graveyards of high significance.

The cultural landscape of the proposed development area has an intangible heritage component i.e. The White Dunes as referenced by historical travelers and in historical maps, the "coloured reserve" in which traditional stock farming and the collection of medicinal plants occurred, and the reference to local San gathering the honey from the bees nests to make honey beer (presumably site KAP2017/002). The landscape and its link with traditional land uses will also be impacted and it will be necessary to ensure that only minimal loss of land takes place within the Kamaggas farm area. Importantly, however, the Nama Khoi municipality on behalf of the Komaggas community has agreed to a part of the proposed development occurring on their communal land, should it receive Environmental Authorisation.

The only project alternatives available for assessment were the access roads. While neither will result in any impacts, Option 1, is slightly favoured as Option 2 is located in close proximity to identified heritage resources.

Recommendations provided in the report include the following:

- All significant archaeological sites identified must be protected from harm. Where necessary to effect this, sites should be cordoned off i.e. KAP2017/001, KAP2017/002, KAP2017/003, KAP2017/004, KAP2017/005, and GRW2017/001;
- The graveyards at PAN2017/001 (waypoint 1376) and PAN2017/003 (waypoint 1378) must be cordoned off as necessary, avoided and protected;
- The historical sites at PAN2017/002 (waypoint 1377), PAN2017/004 (waypoint 1399), PAN2017/005 (waypoint 1413) and KOM2017/001 (waypoint 1420) must be cordoned off if necessary, protected and avoided;
- Roads must be designed in such a way as to minimise cut and fill operations in order to reduce landscape scarring;
- The final approved layout should be subjected to a pre-construction walk-down survey to identify any further sites that may require mitigation;
- If any archaeological material or human burials are uncovered during the course of development, then work in the immediate area should be halted. The find would need to be reported to the heritage authorities and may require inspection by an archaeologist. Such heritage is the property of the state and may require excavation and curation in an approved institution.

Proposed development of 300 MW Kap Vley Wind Energy Facility near Kleinzee, Northern Cape

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an agency of the
Department of Arts and Culture

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Enquiries: Natasha Higgitt
Tel: 021 462 4502
Email: nhiggitt@sahra.org.za
CaseID: 11654

Date: Thursday May 24, 2018
Page No: 4

Pether, J. 2017. Palaeontological Assessment: Desktop Study for the Proposed Kap Vley Wind Energy Facility, Namakwa District Municipality, Northern Cape Province.

The proposed development area is located within the Springbok Formation which does not contain fossils. The ridges and superficial coversands deposits are of low fossil bone potential. Fossil bones from the activities of carnivores and scavengers may be present within the hills and channel lag deposits. The overall impact of the proposed development on palaeontological material is rated as low.

It is recommended that a requirement to be alert for possible fossils and buried archaeological material be included in the Environmental Management Programme (EMPr) for the Construction Phases of the Kap Vley WEF, with a Fossil Finds Procedure in place. In the event of the exposure of fossil bones all work at that spot must cease and the Environmental Control Office (ECO) must inform SAHRA and a professional palaeontologist, who will then decide if avoidance or mitigation are preferred. Only a professional palaeontologist may excavate uncovered fossils with a valid mitigation permit from SAHRA.

Final Comment

The SAHRA Archaeology, Palaeontology and Meteorites (APM) Unit has no objections to the proposed development and supports the recommendations of the heritage specialists. The recommendations of the specialists and the following conditions must be included in the Final EMPr:

- A walk-down of the final layout must be conducted by a qualified archaeologist and the results of the walk-down must be submitted to SAHRA for review and comment. No construction may occur without comment from SAHRA on the walk-down report;
- Should it be necessary to mitigate the archaeological sites, a permit in terms of section 35 of the NHRA and Chapter II and III of the NHRA Regulations must be applied for prior to construction. No mitigation measures may be implemented without a permit issued by SAHRA for the specified work;
- Should it be necessary to mitigate any of the burial grounds, a consultation process as per section 36 of the NHRA and Chapter XI of the NHRA Regulations must be conducted prior to construction;
- If relocation of the graves if found to be feasible, a permit in terms of section 36 of the NHRA and Chapter IX of the NHRA Regulations must be applied for prior to construction. No relocation may occur without a permit issued by SAHRA for this expressed purpose;
- A Heritage Management Plan (HMP) must be developed and implemented as part of the EMPr for the in-situ management of all heritage resources located within the development boundary. This HMP must be submitted to SAHRA for review prior to construction;
- A Chance Finds Procedure and Fossil Finds Procedure must be developed and implemented as part of the EMPr. These procedures must be submitted to SAHRA for review and comment prior to

Proposed development of 300 MW Kap Vley Wind Energy Facility near Kleinzee, Northern Cape

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CaseID: 11654

Date: Thursday May 24, 2018
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construction;

- The Final EIA and EMPr must be submitted to SAHRA for record purposes;
- If any evidence of archaeological sites or remains (e.g. remnants of stone-made structures, indigenous ceramics, bones, stone artefacts, ostrich eggshell fragments, charcoal and ash concentrations), fossils or other categories of heritage resources are found during the proposed development, SAHRA APM Unit (Natasha Higgitt/Phillip Hine 021 462 5402) must be alerted. If unmarked human burials are uncovered, the SAHRA Burial Grounds and Graves (BGG) Unit (Thingahangwi Tshivhase/Mimi Seetelo 012 320 8490), must be alerted immediately. A professional archaeologist or palaeontologist, depending on the nature of the finds, must be contracted as soon as possible to inspect the findings. If the newly discovered heritage resources prove to be of archaeological or palaeontological significance, a Phase 2 rescue operation may be required subject to permits issued by SAHRA;
- Should the project be granted Environmental Authorisation, SAHRA must be notified and all relevant documents submitted to the case file.

Should you have any further queries, please contact the designated official using the case number quoted above in the case header.

Yours faithfully

Natasha Higgitt
Heritage Officer
South African Heritage Resources Agency

Phillip Hine
Acting Manager: Archaeology, Palaeontology and Meteorites Unit
South African Heritage Resources Agency

Proposed development of 300 MW Kap Vley Wind Energy Facility near Kleinzee, Northern Cape

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CaseID: 11654

Date: Thursday May 24, 2018
Page No: 6

ADMIN:
Direct URL to case: http://www.sahra.org.za/node/408059

Terms & Conditions:

1. This approval does not exonerate the applicant from obtaining local authority approval or any other necessary approval for proposed work.
2. If any heritage resources, including graves or human remains, are encountered they must be reported to SAHRA immediately.
3. SAHRA reserves the right to request additional information as required.

APPENDIX E8: DEA LETTER OF ACKNOWLEDGMENT OF EXTENSION

environmental affairs
Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

Private Bag X 447 · PRETORIA · 0001 · Environmental House · 473 Steve Biko Road PRETORIA

DEA Reference: 14/12/16/3/3/2/1046
Enquiries: Mr Ephron Maradwa
Telephone: 012 399 8529 **E-mail:** EMaradwa@environment.gov.za

Ms Minnelise Levendal
Council for Scientific and Industrial Research
PO Box 320
STELLENBOSCH
7599

Telephone Number: (021) 888 2432
Email Address: mlevendal@csir.co.za

PER E-MAIL / MAIL

Dear Ms Levendal

ACKNOWLEDGEMENT OF NOTIFICATION FOR AN EXTENSION IN TERMS OF REGULATION 23(1)(b) AND 23 (2) FOR THE PROPOSED KAP VLEY WIND ENERGY FACILITY NEAR KLEINZEE, NORTHERN CAPE

The Department's Acceptance of Scoping Letter dated 12 February 2018, the comment letter on the draft Environmental Impact Assessment Report (EIAR) dated 10 May 2018 and your notification of extension letter dated 28 May 2018 and received by the Department on the 29 May 2018 refer.

The Department confirms having received the notification for extension on the 29 May 2018. Based on the information provided by you, the Department herewith extends the timeframe. Please note that should you fail to meet any of the timeframes stipulated in Regulation 23 of the Environmental Impact Assessment Regulations (EIA) (2014), as amended, your application will lapse.

Kindly quote the abovementioned reference number in any future correspondence in respect of the application. Please note that a listed activity may not commence prior to an environmental authorization being granted by the Department.

Yours sincerely

Mr Sabelo Malaza
Chief Director: Integrated Environmental Authorisations
Department of Environmental Affairs
Letter signed by: Mr Vusi Skosana
Designation: Director: Coordination, Strategic Planning and Support
Date: 01/06/2018

APPENDIX E9-11: CORRESPONDENCE AND CONSULTATION WITH THE DEPARTMENT: ENVIRONMENT AND NATURE CONSERVATION NORTHERN CAPE PROVINCE (DENC)

APPENDIX E9: COMMENTS FROM DENC ON THE DRAFT EIA REPORT

the denc

Department:
Environment & Nature Conservation
NORTHERN CAPE PROVINCE
REPUBLIC OF SOUTH AFRICA

SASKO Building
90 Long Street
Private Bag X6102
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Tel. 053-8077300
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Enquiries : E Swart
Dipatlisiso : C Geldenhuys
Imibuzo : P Cloete
Navrae

Date : 25 May 2018
Leshupelo :
Umhla :
Datum :

Reference : KapVley wind farm development
Tshupelo : DEA ref 14/12/16/3/3/2/1046
Isalathiso :
Verwysing

Ms N Ngcaba
Director General
Department of Environmental Affairs
Private Bag X447
Pretoria
0001

For attention: Mr. Muhammad Essop, Assistant Director: Strategic Infrastructure Developments Integrated Environmental Authorisations, MEssop@environment.gov.za

RE: DRAFT ENVIRONMENTAL IMPACT ASSESSMENT REPORT, DEA REF 14/12/16/3/3/2/1046

1. There is insufficient detail of methodology in the specialist reports (specifically the ecological, botanical and to lesser extent the faunal sections). E.g. it is predominantly referred to 'walk-throughs' but in the specialist report walk-through and surveys are mentioned, but no detail on what surveys entailed, or the extent of the surveys. This makes it challenging to assess the content provided i.t.o. representivity of the study / impacted area and if the opinions raised under limitations and confidence in data.
2. Clear management guidelines must be in place and authorized i.t.o. mitigation process prior to development, during development, operational and decommissioning phases. A specialist who will be able to demarcate and mark no-go areas must be present throughout to ensure this mitigation is implemented correctly and within appropriate seasons (demarcation must occur in the wet season while construction must be in the dry season).
3. The consultant who provided the Offset Report has no Biodiversity Offset experience or background in this field which necessitates that (a) the final Offset Report must be completed by another consultant with proven experience and expertise in offsets, OR (b) an accredited and recognized Offset specialist must signed off on the non-experienced offset consultant's report. This specialist in Offsets have to declare that he/she will take responsibility for any shortcomings and / or inferiorities detected in the content of such offset report they sign-off on.
4. It is requested that some of the environmental arguments used in the documentation (specialist reports) be critically assessed as several is poorly constructed i.t.o. why certain recommendations and assumptions are made.
5. Specific focus on sustainability and resilience also lack – when you compare environmental and economic and social aspects towards suggesting which weighs more than the other. E.g., if you

use the doughnut model principles, how do these relate to each other and on what basis would you suggest an activity is sustainable and resilient to future environmental events.

6. One of the major information gaps relates to vegetation unit transformation. Most inferences are often based on Mucina and Rutherford 2006 data of transformation and protection statuses, however these are more than 10 years outdated! Accordingly, information gaps and confidence in some data must be revised and constructed in accordance.

7. Further to the DENC references listed below and attached hereto, the following are points to be addressed additionally/emphasised:

    1. One of the aspects that makes this specific area unique is that it coincides with the archeological Fynbos range of expansion and contraction. In this context the facilitation of the north-south corridor ecological and evolutionary functional role is important, but no reference or discussion was included in the provided documentation.
    2. The second ecological facilitative corridor route links west-east, which (in addition to the north-south) is aimed at facilitating natural mitigation for climate change.
    3. In context of both (a) and (b) the Offset discussions should reflect how the development might have an impact, and how the offset area of choice also address these.
    4. Spatial extent to consider include local, district, regional, landscape and national. Ecological function and mitigation must take all of these into consideration, and where applicable the scale not applicable must be justified. The same principle i.t.o. temporal scale.
    5. The writer disagree with the suggestion that rehabilitation will take 5 years and consequently that the total temporal impact period is around 30 years. What is regarded as rehabilitation under the proposed 5 years?
    6. The short-, medium- and long-term impacts of renewable energy developments within South Africa and specifically along our west-coast is uncertain/unknown. Monitoring must form part of the EMPr and must occur during all three phases of this development (construction, operation, decommissioning). The data must be databased and analysed by an appropriate and accredited person/institute to ensure that more knowledge is obtained to better guide future developments of similar nature.
    7. Insufficient justification is reflected towards the ratio of offset and no indication of ratio of specific habitats, vegetation unit and species are reflected. E.g. if only 5% of the local species of conservation concern is going to be impacted, how would this impact on the conservation status on a provincial and national level. The 5% of a population with a size of 50 plant is significantly higher than 5% of a species with a population of 5 000. Similar principle i.t.o. habitats and vegetation units.
       Nine plant species of conservation concern (Red Data Listed) are listed for the site in the report. There are however potential additional species such as *Nemesia saccata* which is on the SANBI GIS shapefile list of Red Data species for the site, or nearby.
    8. Specification is needed of how much of what exactly needs to be offset. The sensitivity and fine-scale (figure 1) maps will assist in this regard. The uniqueness of the site is also attributed to the closed proximity between very different habitats, with deep sand habitat bordering directly against rocky terrain. I postulate that this would likely result in high beta diversity across the diverse terrain. It is uncertain if this feature would repeat itself in the area of extent of Namaqualand Sand Fynbos vegetation unit.
    9. The habitat diversity of the landscape applies to both flora and fauna diversity patterns and can be translated to edaphic and terrain diversity. This is a key environmental feature also used for climate change mitigation /facilitation planning and should be incorporated/considered accordingly.

10. The diversity of reptiles have been documented and should be considered. The 2014 Reptile Atlas and Red List shows that of the 1888 grid cells in RSA (93.2% of RSA with data), the study area grid cell falls into the highest category of number of reptile taxa per Quarter Degree Grid Cell (38-80 species), which is the top 9.73% of grid cells with data records. The study area also falls within the top category for number of endemic reptile taxa (12-24), which is the top 6.17% of grid cells with data. The occurrence of reptiles of conservation concern is however very low (weighted score of less than 1).
11. From the description in the report important indicators for offset properties would be the presence of Sand Fynbos, Restio Fynbos and Dune Fynbos as well as the presence of indicator species of conservation concern (extent and ratio of each to form part of the offset still lacks). This assemblage does not occur north of the Spoegrivier where a mosaic of Namaqualand Strandveld and Sandstone Fynbos occurs (although this can be investigated in more detail through field work). Proposed possible suitable offset sites occur approximately 50 km south of the sites, inland of Hondeklip Bay, but this requires further investigation. The closest similar habitat to the study area is the Sandstone Fynbos assemblages between the Spoeg and Groen Rivers, inland of Namqua National Park (Figure 2 and Figure 3). The offset localities adjacent to Namaqua National Park are of more strategic value, as they could be incorporated into an existing protected area network. The report does not provide recommendations on any specific properties as potential biodiversity offsets for the development with the need for field verification of suitability being required.
    Potential biodiversity offset options can be gauged from Figure 2 and Figure 3 where vegetation unit and farm sizes are indicated.
12. The proposed development have a footprint of 128 ha, and with the 1:20 offset principle a preliminary offset of 2 560 ha is required.

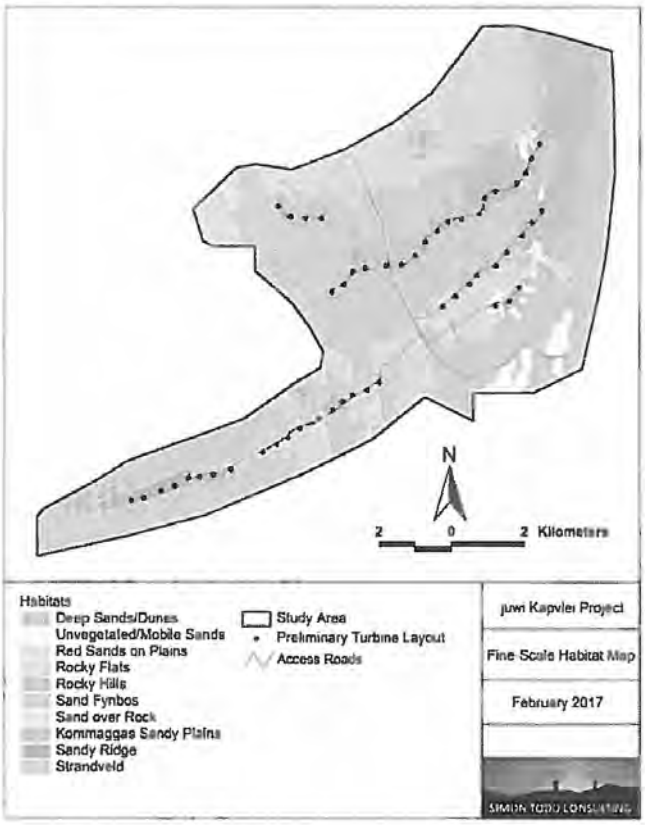


Figure 1: Fine-scale habitat map of the Kapvlei site, showing the distribution of the different major edaphic (environmental) habitats at the site. These have been mapped at a fine scale with accuracy levels of 1-2m and as such, there is little spatial error and uncertainty inherent in the map. Figure and title description taken from the Simon Todd report: Juwi Kapvlei Project, Fine-Scale Mapping Study, dated March 2018.

To conclude, the development is expected to have a high impact on ecosystem function and specialised/unique habitats and thus the consequent impacts species (spatial and temporal scales). Should DEA assess the EIA and EMPr and feel authorisation can be granted, the Offset must be a condition within the EA and details of what must be offset must be specific. Timeframes (including legally binding contract agreement) and responsibilities must be provided as well to ensure that the Offset process is done in a legal and appropriate manner and that each party to the offset know their roles and responsibilities towards securing the offset and its management.
No authorisation can be considered without an Offset agreement in place.

In principal, offset(s) adjacent to the Namaqualand National Park can be supported as long as SANParks is willing to accept the properties and if the offset area(s) is appropriate ('like-for-like' preferably, while alternatives can only be considered during robust discussions with strong motivation as to why the deviation from like-for-like must be deviated from).

Please feel free to contact our department should you need any further information and or clarity.

Yours sincerely,

Ms N van Olmen Phillips
Acting Head of Department
Department of Environment and Nature Conservation
Date

Cc: DEA colleagues
M Rabothatha
M Essop
T Sangweni
S Tshitwamulomoni
P Kershaw
W Lutsch

Cc: SANParks colleagues
W Louw
M Knight
H Hendriks

Cc: CSIR colleagues

Cc: DENC colleagues
B Fisher
N van Olmen
A Yaphi
L Tools-Bernardo
M Mathews
S de la Fontaine

P Cloete
C Geldenhuys

References:

Report back
C Geldenhuys & P Cloete, 2018. Juwi Kap Vley Wind Energy Facility Biodiversity Offset site visit, 17 April 2018.
Internal comments
P Cloete, District Ecologist Namaqualand, Production Scientist Gr A. "Scoping and Environmental Impact Assessment for the proposed Kap Vley Wind Energy Facility near Kleinzee in the Northern Cape", dated 24 May 2018, reference: DEA Ref. 14/12/16/3/3/2/1046.
C Geldenhuys, Botanist, Production Scientist Gr B. "*Juwi Kap Vley Project - Screening Phase Offset Study*" of July 2016 compiled by Mr. Simon Todd", dated 31 October 2017, reference: Kap Vley wind farm biodiversity offset.

Note: Figures 2 and 3 have been removed from the letter as requested by Ms Elsabe Swart of DENC at the meeting held on 12 June 2018 (see meeting notes included in Appendix E11)

APPENDIX E10: AGENDA-MEETING WITH DENC - KAP VLEY WEF

MEETING WITH DENC TO DISCUSS THE PROPOSED KAP VLEY WIND ENERGY FACILITY (IN PARTICULAR THE BIODIVERSITY OFFSET) PROPOSED BY JUWI RENEWABLE ENERGIES (PTY) LTD (juwi) NEAR KLEINZEE IN THE NORTHERN CAPE

12 June 2018 (9H30-13H00)

Venue: SANParks Facilities at the Veterinary and Wildlife Services unit 97 Memorial Road, Old Testing Grounds, Southridge, Kimberley

AGENDA:

1.	Welcome and Introductions	CSIR, All
2.	Project Background and Overview	CSIR
3.	Presentation of the Biodiversity Offset Study	Simon Todd Consulting
4.	Discussion on comments from DENC (letter dated 25 May 2018)	DENC
5.	Any other questions, comments or feedback?	ALL
6.	Proposed way forward	CSIR
7.	Project Closure	CSIR AND DENC

PROJECT OVERVIEW:

juwi is proposing the development of the Kap Vley Wind Energy Facility (WEF) and associated electrical infrastructure located approximately 30 km south-east of Kleinzee in the Northern Cape. It falls within the Namakhoi Local Municipality which falls under the Namaqualand District Municipality. The proposed Kap Vley WEF will have a maximum generation capacity of 300 MW.

PURPOSE OF THE MEETING:

The purpose of the meeting is to present the updated Ecological Offset study prepared by Simon Todd of Simon Todd Consulting to DENC and DEA. The Ecological Offset study was updated following comments received from DENC in their letter dated 25 May 2018. The approach and outcomes of the updated Ecological Offset study will be discussed. Comments on the updated study will be invited from all the relevant role players (DENC, DEA, SANPARKS, Simon Todd Consulting, WWF, juwi and CSIR) to inform and determine the suitability and way forward on the proposed offset.

APPENDIX E11: DRAFT NOTES FROM MEETING WITH DENC AND DEA ON 12 JUNE 2018

DRAFT NOTES FROM MEETING WITH DENC AND DEA TO DISCUSS THE PROPOSED KAP VLEY WIND ENERGY FACILITY (IN PARTICULAR THE BIODIVERSITY OFFSET) PROPOSED BY JUWI RENEWABLE ENERGIES (PTY) LTD (juwi) NEAR KLEINZEE IN THE NORTHERN CAPE

DATE: 12 June 2018

Attendants: The signed attendants register is included in Appendix 1.

Name	Organisation
Elsabe Swart (ES)	DENC
Portia Makitla (PM)	DEA
Thobekile Zungu (TZ)	DEA
Jody Brown (JB)	WWF
Simon Todd (ST)	3 Foxes
Chris Bellingham (CB)	juwi
Corné van der Westhuizen (CvdW)	juwi
Minnelise Levendal (ML)	CSIR

Apologies: Willem Louw, Angela Isaks, Lucius Moolman (all from SANParks), Nanine van Olmen (DENC) and Pamela Kershaw (DEA)

Meeting Progression:

1. Welcome and introductions
   ML welcomed everyone to the meeting. The attendants introduced themselves.
2. ML presented the background and overview of the proposed Kap Vley Wind Energy Project
3. ST presented the updated Ecological Offset Study and Mark Botha's review comments.
4. Discussion on the updated Ecological Offset Study and the external review:
   - ES expressed concern that SANParks are not present at the meeting as they are a key stakeholder in the process and their buy-in is key.
   - ML commented that SANParks have been invited, but were unfortunately not available due to prior commitments.
   - CvW noted that SANParks have been consulted since the pre-application phase of the project.
   - PM asked whether an offset is not required prior to an Environmental Authorisation (EA) being issued.

- CvdW replied that this is not the case and that a condition can be included in the EA that an offset agreement must be finalised prior to construction commences. No one stated any disagreement with his statement.
- ES proposed that an offset agreement on the proposed offset must be signed by all the relevant parties involved prior to construction commences.
- ST reiterated that the current Ecological Offset Study is not an Offset Implementation Agreement and thus does not specify the particulars with regard to the specific land portions to be secured, and what the agreed conditions among the relevant stakeholders will be. He noted that the current Ecological Offset Study only determines the appropriateness and required outcomes of an offset, as required by the gazetted draft Offset Guidelines. The Offset Implementation Agreement need only be developed at a later time and finalised when there is far greater certainty that the project will be realised (i.e. when Preferred Bidder status is achieved) and once it is confirmed who the implementation authority would be (e.g. either SANParks or a 3rd party).
- ES asked how the fine-scale mapping was done.
- ST responded that it was done through highly detailed and intensive walk-throughs of the site whereby all the turbine locations, access and internal roads were surveyed on the ground and all turbine and infrastructure footprint were removed from no-go areas via a multi-stage site optimisation and micro-siting process in collaboration with juwi. The initial project layout went through approximately 10 iterations of re-design to reduce environmental impact, taking environmental and technical criteria into consideration before the final layout was determined. ST noted that full species lists were compiled for each turbine location. The visual surveys were backed up by high-resolution aerial photography commissioned by juwi.
- ST noted that suitable potential offset areas are available south of Kap Vley near Hondeklipbaai. Species lists are available for these areas and it contains the required vegetation types that are present on the Kap Vley project site.
- The Ecological Offset study was externally reviewed by Mark Botha, who is a recognised expert on biodiversity offsets.
- Mark Botha provided a constructive review of the Offset Study and made a number of recommendations for improvement. The basic recommendations and outcomes of the Offset Study are upheld and supported by Mark's review.
- As far as possible, the comments from Mark Bothahave been addressed and incorporated into the revised Offset Study.
- An Offset Implementation Agreement will be developed and will be agreed upon by all the relevant stakeholders prior to construction commencing.
- PM asked when funds will be transferred to the implementing and offset management agent.

- CvdW replied that this will be specified and stipulated in the Offset Implementation Agreement. For clarity, CvdW said that funds will be made available prior to their requirement and will be transferred according to the needs of the implementing authorities.
- Following the presentation by ST, CvdW asked if everyone present was in agreement with the process that was followed and the findings with regard to the appropriateness and required outcomes of the offset.
- In response, ES noted that the biggest challenge is the assumption that SANParks will be the management authority. She noted that juwi should investigate and include other potential options or alternatives for management authorities as a back-up, should SANParks not fulfil this role. The three potential options agreed to include:
    - SANParks (preferred option)
    - Stewardship agreement with landowner/s
    - 3rd party management authorities (outside the sphere of Government)
- CvdW and CB noted that these options will be included as options and investigated further.
- ES requested that timelines be included as to when the proposed offset will be secured.
- CvdW and CB stated that an offset agreement will be finalised prior to construction commencing.
- ES asked JB if an 'offer to purchase' can be in place within 6 months.
- JB confirmed that it is possible, provided that the lines of communication between the different role players remain open through-out the process to secure the offset and depending on the landowner agreement. In this way WWF could start their Land Purchase process and investigation proactively to be able to facilitate the purchase in a short timeframe.
- CB noted that the following recommendation or condition can be included in the EA: The developer must have concluded an 'agreed offer to purchase', or stewardship agreement, before construction commences.
- ES asked clarity on the reference that rehabilitation will take 5 years. What is regarded as rehabilitation under the 5 years? This will be addressed in the updated Draft EIA Report and if required it should be indicated that rehabilitation to the extent of ecological functionality can be expected within 5 years, but not rehabilitation to a state similar to pre-disturbance.
- ST responded to say that this will be checked and addressed in the specialist report and some benchmarks for rehabilitation included in the study.
- ES noted that the maps indicating potential land portions included in the comment letter from DENC dated 25 May 2018 are not for public viewing, but were included for internal use. ML to exclude these maps from the DENC letter that will be circulated with the updated Draft EIA Report.
- ES requested ST to include the level of transformation and availability of the required vegetation types to meet the offset target areas.

- CvdW asked the attendants if they agree with the proposed approach to include the required outcomes of the offset as a condition to the EA, and for the Offset Implementation Agreement to be finalised prior to commencement of construction. No objections to this approach were raised.
- ST presented proposed recommendations to be included as conditions of the EA. These recommendations were discussed and were supplemented with comments from ES.
- The proposed recommendations are provided below (including those proposed by ES):
    - The necessary arrangements for the implementation of the offset must be captured in an Offset Implementation Agreement, which agreement must be concluded and submitted to the relevant authority before construction on the wind farm can commence.
    - An 'agreed offer to purchase' or stewardship agreement must also be concluded prior to construction.
    - The offset must be at least 2580 ha in extent.
    - This should consist of at least 1125 ha of Sand Fynbos and 510 ha of the Klipkoppe Shrubland vegetation type. The Sand Fynbos should include representative areas of the Dune Fynbos and Restio Fynbos habitat types as defined by Desmet et al. (2009). Viable populations of the majority of species of conservation concern as identified at Kap Vley should also be confirmed present.
    - A specialist study which details the condition, characteristics and species present on the final offset properties to be included in the offset should be attached to the final Offset Implementation Agreement.
    - The project company must provide funds to ensure the appropriate management of the offset for the duration of the operation of the wind farm. The agreement must stipulate the financial arrangements for management of the offset.
    - The identified offset area must be declared as a protected area under the Protected Areas Act. The timeline for the declaration must be agreed upon as part of the Offset Implementation Agreement.
- ES asked ST to email these recommendations to her.
- CvdW requested ML to include the recommendations in the EMPr.
- JB asked at what stage would negotiations start with juwi, SANParks and WWF for the development of the implementation agreement to secure the land for the offset.
- JB noted from a WWF purchase perspective, the management authority is very important, where for the expansion of a National Park, WWF needs SANParks to agree for the management of the potential offset properties, as we cannot move forward without our partners on the ground within this area to manage the properties. The authorities we enter into agreements with for the management of WWF purchased properties are SANParks or the

relevant provincial authority depending on the type of protected area we are expanding (e.g. National Park - SANParks or Nature Reserve – Provincial Authority).

- CvdW responded that final negotiations will not start prior to an EA being issued and that they are most likely to start after Preferred Bidder status has been achieved.
- ML noted that the revised Ecology Study and the revised Ecological Offset Study (which will also be updated based on comments from ES at the meeting) will be included in the Updated Draft EIA Report that will be circulated for a 30-day commenting period. ES confirmed that she would prefer for an electronic copy of the report to be sent to her or placed in Dropbox for her to download.
- ML thanked everyone for their attendance, constructive inputs and comments at the meeting.
- The meeting adjourned at 11H45.

Attached to the draft meeting notes:

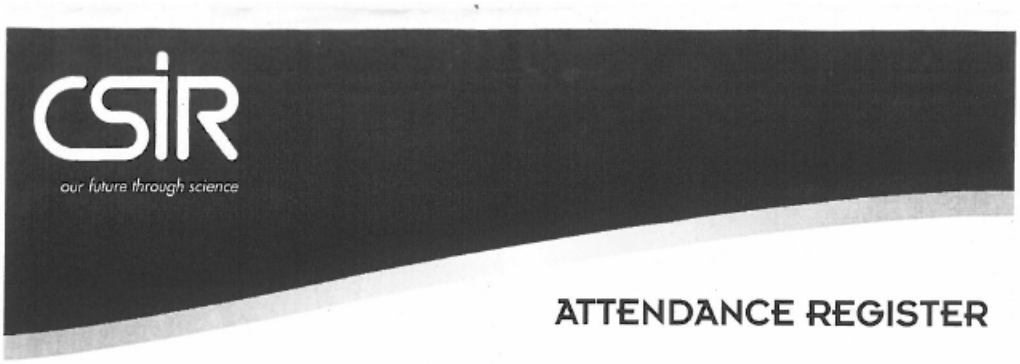
Appendix 1:

Signed attendance register.

Appendix 2:

Email from Ms Elsabe Swart dated 12 June 2018 as a brief feedback in the interim as the minutes will be circulated and included in the EIA documentation (the email was sent to Mr Conrad Geldenhuys, Ms Nanine van Olmen, Mr Peter Cloete, A Jammer, Ms Luzane Tools-Bernado, and Ms Samantha De La Fontaine (all from DENC), Ms Minnelise Levendal (CSIR) as well as to Mr Willem Louw and Mr Hugo Bezuidenhout (both from SANParks).

APPENDIX 1: ATTENDANCE REGISTER FOR THE MEETING ON THE JUWI KAP VLEY WIND ENERGY PROJECT NEAR KLEINZEE THAT WAS HELD ON 12 JUNE 2018



Meeting: Meeting with DENC to discuss the proposed Kap Vley Wind Energy Facility near Kleinzee
Venue: SANParks Facilities at the Veterinary and Wildlife Services Unit (97 Memorial Road, Old Testing Grounds, Southridge, Kimberley
Date: 12 June 2018

Nr	Name & Surname	Organization	Contact Details	Signature
1	Jody Brown	WWF	072 674 3784	
2	Thabekile Zungu	DEA	0123999477	
3	Portia Makitla	DEA	0123999411	
4	CHRIS BELLINGHAM	juwi	0834435154	
5	Corné van der Westhuizen	juwi	083 6117073	
6	Simon Todd	3Foxes	0823326502	
7	Minnelise Levendal	CSIR	mlevendal@csir.co.za 0832373166	
8	Elsabé Smit	DENC	0833098159 0538077681	
9				

APPENDIX 2: Email from Ms Elsabe Swart dated 12 June 2018 as a brief feedback in the interim as the minutes will be circulated and included in the EIA documentation

Minnelise Levendal - Feedback: KapVley Offset for Juwi wind energy development, Kleinsee

From:	Elsabe Swart <elsabe.dtec@gmail.com>
To:	Conrad Geldenhuys <c.geldenhuys@hotmail.com>, Peter Cloete <peter.denc87...
Date:	12/06/2018 16:42
Subject:	Feedback: KapVley Offset for Juwi wind energy development, Kleinsee
Cc:	Samantha De la Fontaine <sdelafontaine@gmail.com>, Hugo Bezuidenhout <hu...
Attachments:	12Jun2018_KapVley Offset meeting attendance register.pdf

Dear Colleagues,

This is just a brief feedback in the interim as the minutes will be circulated and included in the EIA documentation. The attendance register is attached for your reference.

Key points to note from the meeting:
1. Mark Botha was asked to review the Offset report and will also review the revised Offset report. These will be included into the final EIA documentation.
2. The approach to an Offset report was discussed to clarify why reference must be made to ecosystem function on landscape and local scales, as well as resilience. It was also explained that the Offset Report must include arguments for why the proposed ratio is reached, why options are searched for towards the south and the extent of transformed and available vegetation and / or habitat features provide the potential extent of probability that an Offset can be secured.
3. It was briefly discussed in the meeting that certain aspect of the Offset discussions and reports are for public review and why certain aspects (e.g. identification of potential offset properties) should be handled confidentially.
4. Because SANParks could not attend and provide a standpoint i.t.o. being the potential management authority, it was suggested that provision is made for alternatives as back-up should there be any problems getting commitment from SANParks prior to submission of final EIA documents. This will also allow opportunity for SANParks to have some time to clarify specifics of their internal processes, while the EIA process can continue towards the financial closure.
Similarly, it was agreed to refer to the relevant authorities as signatories to the Offset Agreement in the EIA process, while the specifics is addressed in a parallel process during the Offset negotiation process. The ideal would be to have a draft offset agreement already in place by financial closure to attempt in having the offset agreement in place by commencement of construction (there is a challenge in managing within the IPPP process which the IAPs tried to reach agreement).
5. One of the most important gaps with the offset process at this stage is the clarification of implementation processes and roles and responsibilities. Although it was not part of Simon's initial directive it must be addressed moving forward. Whether Juwi will contract Simon to attend to this part as well is dependent on the negotiations between the consultant and the developer. The IAP just need to have such processes clarified as soon as possible.
6. The revised documents will be distributed for comments again, which must be provided within 30 days. I would suggest SANParks inform Minnelise of the most appropriate route to follow to ensure SANPark receive and review the revised documents.

7. Most of the concerns raised by DENC and SANParks were discussed during the meeting with exception of specifically addressing map size (ref SANParks comment 2, letter dated 11 June 2018). There are two sides to this argument - one of local diversity and habitats, but also landscape functionality and resilience.
So that is why there is a larger scale and smaller scale from which the assessments are made. It is agreed that the 1 : 50 000 is the most accepted scale to enable compatibility, and it can be supported from that point of view but does not form the central pivotal point for making decisions and continue negotiations around for offsetting. For the purpose of offsetting local/fine scale and landscape and temporal scales must be considered to ensure mitigation, ecological process facilitation and resilience within ecosystem functionality for the long term.

8. With reference to the 5 year rehabilitation aspect - the consultant will have a look at it and clarify what is meant to be clear of what actually is intended. Rehabilitation towards former status vs ecological functionality would be different and needs to be explicit. Once again, depending on the clarification IAPs can comment if they are in agreement or not.

Thanks to the attendants today for your inputs towards reaching agreement (principles) on the way forward.

Look forward in reviewing the revised documents.

--
Regards
Elsabe

E SWART
SCIENTIFIC MANAGER GR B: RESEARCH AND DEVELOPMENT SUPPORT
Pr.Sci.Nat.

Department of Environment and Nature Conservation
Private Bag X6102
Kimberley
8300
Tel. 053 - 807 7481
Fax 053 - 831 3530
Mobile 082 4582954
elsabe.dtec@gmail.com

Scoping and Environmental Impact Assessment for the proposed Kap Vley Wind Energy Facility near Kleinzee in the Northern Cape

UPDATED DRAFT ENVIRONMENTAL IMPACT ASSESSMENT REPORT

APPENDIX F:

Comments and Responses Trail

COMMENTS AND RESPONSES TRAIL

This chapter presents the comments that were raised by stakeholders, I&APs and Organs of State during the preceding **Scoping Phase (including acceptance of Scoping from DEA)**, and responses to the comments and, if applicable, how these comments have been addressed in this EIA Phase. It is important to note that comments were received from SAHRA following the submission of the finalised Scoping Report to the DEA for decision-making (in December 2017). These comments are included in the Issues and Responses Trail.

IDENTIFICATION OF ISSUES

An important element of the EIA process is to evaluate the issues raised through the interactions with authorities, the public, the specialists on the EIA team and the project proponent. In accordance with the philosophy of Integrated Environmental Management, it is important to focus the EIA on the key issues, such as those issues that are considered critical for decision-making on the EA.

To assist in the identification of key issues, a decision-making process is applied to the issues raised, based on the following criteria:

- Whether or not the issue falls within the scope and responsibility of the proposed project; and
- Whether or not sufficient information is available to respond to the issue raised without further specialist investigation.

Issues were sourced by the EIA team from the following Scoping interactions:

- **Newspaper Advertisement** - In order to inform the public of the proposed project and invite members of the public to register as I&APs, and to inform the EIA consultant about specific issues or interests in the proposed project, the proposed Kap Vley Wind Energy Facility (WEF) and EIA process were advertised in one local newspaper (i.e. “Die Plattelander”) on the 27th October 2017. A copy of the newspaper advertisement is included in Appendix D of this EIA Report.
- **Site Notices** – site notices describing the project as well as the contact details of the EAP were placed at several locations on site and nearby, as seen in Appendix D.
- **Email** – Emails were sent out as part of the public participation process undertaken for the 30-day review of the Draft Scoping Report (31 October 2017). Proof of this correspondence can be seen in Appendix D.

All comments received during the 30-day review of the Scoping Report for I&AP review are included in the Comments and Responses Table below, as well as in Appendix G of this EIA Report.

All comments received during the 30-day review of the Draft EIAR for I&AP review will be included in the Comments and Responses Table in the Final EIA report as well as in Appendix G of the Final EIA Report. In addition to the comments and responses being in the tables below following the Draft EIA Report review, all commenting I&APs will receive an email response from the EAP/Applicant.

The tables below summarise the comments and/or issues raised following the release of the Draft Scoping Report for I&AP review, together with a response from the EIA team, as well as comments included in the acceptance of the Scoping Report letter (dated 30/11/2017) received from the Competent Authority. Copies of the comments received are included in **Appendix G** of this EIA Report.

Table 1: Comments received following the release of the Draft Scoping Report for the 30-day review period, together with the response from the EIA team

*Please note that the comments are taken verbatim from the comments provided by I&APs

NO.	COMMENTS	COMMENTATOR	DATE & FORMAT	RESPONSE
1	**Interim Comment** **In terms of Section 38(3) of the National Heritage Resources Act (Act 25 of 1999)** *Attention*: Mr Corne van der Westhuizen juwi Renewable Energies South Africa (Pty) Ltd **juwi Renewable Energies (Pty) Ltd (hereinafter referred to as "juwi") proposes to construct and operate a 300 MW Wind Energy Facility (WEF) and associated electrical infrastructure (subject to a separate Basic Assessment Process), The proposed Kap Vley WEF will be constructed on the following land: Remainder (RE) Kommagas Farm 200 Portion 5, RE Kap Vley Farm 315, Portion 1 of Kap Vley Farm 315, Portion 2 of Kap Vley Farm 315, Portion 3 of Kap Vley Farm 315, Portion 3 of Platvley Farm 314, RE Kourootjie Farm 316 and RE Gra'water Farm 331** Thank you for notifying SAHRA of the proposed 300MW Wind Energy Facility (WEF) and associated electrical infrastructure on several farm portions near Nigramoep, Northern Cape Province. In terms of the National Heritage Resources Act, No 25 of	Natasha Higgitt (Heritage officer & Phillip Hine (Acting Manager: Archaeology, Palaeontology and Meteorites Unit) SHRA	04 October 2017, Letter sent via email	**CSIR:** Thank you for the comments provided. Please note that the following suitable studies will be undertaken: ➢ Heritage Impact Assessment (Archaeology and Cultural Landscape) by Dr Jayson Orton of ASHA Consulting (Pty) Ltd ➢ Desktop Palaeontological Impact Assessment by Mr John Pether (private consultant) Scoping inputs from these specialists are included in Appendix G of this Final Scoping Report. The full studies will be included in the Draft EIA Report.

NO.	COMMENTS	COMMENTATOR	DATE & FORMAT	RESPONSE
	1999 (NHRA), the proposed development triggers section 38(8) as it forms part of a Environmental Authorisation (EA) Application in terms of the National Environmental Management Act, 107 of 1998 (NEMA) and the NEMA 2014 Environmental Impact Assessment (EIA) Regulations. As per section 38(8), an assessment of all heritage resources defined in section 3 of the NHRA and must comply with section 38(3) of the NHRA must be completed as part of the EA application process. The quickest process to follow for the archaeological component would be to contract a specialist (see www.asapa.org.za/ www.aphp.co.za) to provide a Phase 1 Archaeological Impact Assessment Report. The Phase 1 Impact Assessment Report will identify the archaeological sites and assess their significance. It should also make recommendations (as indicated in section 38) about the process to be followed. For example, there may need to be a mitigation phase (Phase 2) where the specialist will collect or excavate material and date the site. At the end of the process the heritage authority may give permission for destruction of the sites. A Palaeontological Desktop study must be undertaken to assess whether or not the development will impact upon palaeontological resources. If the area is deemed sensitive, a full Phase 1 Palaeontological Impact Assessment will be required and if necessary a Phase 2 rescue operation might be necessary (see www.palaeontologicalsociety.co.za for qualified paleontologists). Any other heritage resources as defined in section 3 of the NHRA that may be impacted, such as built structures over 60 years old, sites of cultural significance associated with oral			

NO.	COMMENTS	COMMENTATOR	DATE & FORMAT	RESPONSE
	histories, burial grounds and graves, graves of victims of conflict, and cultural landscapes or viewscapes must also be assessed. Should you have any further queries, please contact the designated official using the case number quoted above in the case header. Yours faithfully			
2	It would be appreciated if you could furnish me with a CD of the Scoping report, delivered to *Environment House* *Cnr Steve Biko and Soutpansberg Road* *Pretoria* *0001* Thanks Wilma Lutsch Tel 012 3998827	Wilma Lutsch, National Department of Environmental Affairs	31 October 2017, Email	**CSIR**: *Email response on 1/11/2017* Thank you for the email. Please note that the CD of the Scoping Report was sent via registered mail on Monday the 30th of November 2017. Please see the attached proof of post. Kind Regards Reinett Mogotshi CSIR-Environmental Management Services

NO.	COMMENTS	COMMENTATOR	DATE & FORMAT	RESPONSE
	Good day A CD should be delivered to my attention and 30 days commenting period will commence from the date of receipt of your document. Please note that we don't work with emailed documents or links. Regards Stanley *Sent from my Samsung Galaxy smartphone.*	Stanley Tshitwamulomoni National Department of Environmental Affairs (Biodiversity Unit)	9 November 2017, Email	**CSIR**: *Email response on 10/11/2017* Good Day Stanley Thank you for your query this morning. Please note that an email notification for the release of the Draft Scoping Report as well as a CD copy of the Draft Scoping Report were sent to Wilma Lutsch via registered mail on the 30th of October 2017. Please see the attached proof of postage. In addition, two additional CDs were sent via courier to you and Pamela yesterday. Thank you for confirmation of receipt as discussed with Minnelise Levendal this morning. Kind Regards Reinett Mogotshi CSIR-Environmental Management Services
3	Our company is currently in process of developing three wind farms and three solar parks directly to the north and the north west of your Kap Vley WEF. As an I&AP with rights over the neighbouring properties, please for forward relevant documentation to register us on our I&AP Database. Also, are the Kmz or Kml shapefiles for your WEF land parcels available? Thank you.	Ralph Damonse Genesis Eco-Energy (Pty) Ltd	15 November 2017, Email	**CSIR**: *Email response on 15/11/2017* Thank you very much for the email. I have added you to our database as an I&AP, for you to receive information regarding the project. As requested, please see the attached Kmz file. Do not hesitate to contact me should you require any additional information. The KMZ links were sent through to the commentator on 15/11/2017 via email and receipt was acknowledged.

NO.	COMMENTS	COMMENTATOR	DATE & FORMAT	RESPONSE
	Dear Reinett Please confirm whether the Alternate 2 for Grid Connection envisages to cross the land parcel Zonnequa 0 of 326. See attached land detail. Thank you.		16 November 2017, Email	*Email response on 17/11/2017* Thank you for the email. I can confirm that the proposed Alternative 2 for the transmission line crosses the Remainder of the Farm Zonnekwa 326. **Updated response:** We have noted that our initial proposed Alternative 2 connection route crossed the Remainder of the Farm Zonnekwa No. 326 on which you are intending to develop a WEF. We have updated our layouts based on comments and findings from the scoping phase. As part of this update we have rerouted this connection corridor to avoid the mentioned property, and thus eliminate potential impact on your proposed development. Please see Figure A.1.1 for updated routing.
4	Please can you register me as an I&AP on the Kap Vley Wind farm EIA process. My contact details are below. Thank you	Karen Jodas Savannah Environmental	16 November 2017, Email	**CSIR**: *Email response on 16/11/2017* Thank you very much for your email. You have been registered as an Interested and Affected Party for the project.
5	Please send me the BID document via e-mail and if possible a KMZ file of the affected properties. Please find attached Eskom requirements for development close to Eskom infrastructure and servitudes. Regards John Geeringh (Pr Sci Nat) Senior Consultant Environmental Management Eskom: GC Land Development D1 Y39 Megawatt Park	John Geeringh (Eskom)	06 November 2017, Email	**CSIR**: *Email response on 6/11/2017* Thank you for the email. Please note that a BID was not released for this project. The standalone summary document of the Draft Scoping Report as well as the kmz files were emailed to the commentator. Kindly advise if this information will be sufficient or if you would like to receive a CD of the Scoping Report.

NO.	COMMENTS	COMMENTATOR	DATE & FORMAT	RESPONSE
	P O Box 1091 Johannesburg 2000 Tel: 011 516 7233 Fax: 086 661 4064 Cell: 083 632 7663 E-mail: john.geeringh@eskom.co.za			
6	Thank you, this will suffice. Please check with the landowners regarding an Eskom servitude for the Juno-Gromis 400kV power line that is going to be constructed in the new year. The setback document I sent you requires a 3 x tip height distance from the edge of the Eskom 400kV servitude to the nearest turbine positions. Regards	John Geeringh (Eskom)	06 November 2017, Email	**CSIR**: *Email response on 7/11/2017* Thank you for the email. Please note that juwi is aware of where the Eskom servitude is planned and have taken it into consideration during the planning phase of the turbine layout. The requirements from Eskom will be adhered to.
	Hi there Paul, I am putting together a database of Renewable Energy projects being developed in South Africa and would like to be added to the Interested & Affected Parties list for the following projects: Juwi Projects: Skeerhok 1, 2 & 3. Kep Valley WEF. Mainstream: Sutherland I & II & Rietrug WEF Grid infrastructure BA process as well as Substantive EIA Amendment process. As well as the City of Cape Town's Atlantis Gas to Power	Joseph Harding Windlab Developments South Africa Pty Ltd	06 November 2017, Email	**CSIR**: Thank you very much for your email. You have been registered as an Interested and Affected Party on the project database.

NO.	COMMENTS	COMMENTATOR	DATE & FORMAT	RESPONSE
	Project. Thanks in advance! Kind regards,			
	Apologies Paul - Could the contact email address please be recorded as windlab.iap@windlab.com for the below request.		08 November 2017, Email	**CSIR**: The email address provided was added to the project database.
7	Goeie more Kan u my asb registreer as diensverskaffer Beskik oor akkomodasie. Dankie **<u>Translation:</u>** *"Good morning* *Can you please register me as a service provider. I can provide accommodation".* *Thank you.*	Koos Bisschoff	16 October 2017, Email.	**CSIR**: *Email response on 20/10/2017* Thank you for the email. You have been registered as an Interested and Affected Party to receive information regarding the project. Please note we are undertaking an Environmental Assessment for the Kap Vley project where interested and affected parties are given an opportunity to raise comments and concerns on the wind energy project. **CSIR**: The service providers will be appointed as part of a separate process. Your comment is noted by the project applicant, juwi.
8	Goeie middag Ek is tans 'n inwoner in Koingnaas en ook 'n grondeienaar in Kleinzee. Ek het die kennisgewing van bogenoemde projek by 'n plaaslike supermark in Kleinzee gesien. Kan u my meer inligting gee aangaande die projek. Wil ook weet wat dit behels om te registreer as Belangstellende en Geaffekteerde Party? Hoor graag van u. **<u>Translation:</u>**	Maureen Kruger	16 October 2017, Email	**CSIR**: *Email response on 20/10/2017* Thank you very much for the email. You have been registered as an Interested and Affected Party on the project database. You will receive future communication on the project. **CSIR:** A hard copy of the Draft Scoping Report is available for public viewing at the Kleinzee Police Station. A summary document of the project was sent to the

NO.	COMMENTS	COMMENTATOR	DATE & FORMAT	RESPONSE
	"Good afternoon *I am currently a resident in Koingnaas as well as a landowner in Kleinzee. I saw notification of above-mentioned project at the local supermarket in Kleinzee. Can you please provide me with more information on the project. I also want to know what it entails to register as an Interested and Affected Party.* *Hope to hear from you."*			commentator.
9	Somebody also registered refer to an email they received where they need to click and open for services they can deliver.(a 200 page and 600page). I just want to make sure or everything on my registration is in place. Thanks Koos	Koos Bisschoff	10 November 2017, Email	**CSIR**: *Email response on 16/11/2017* Thank you for the email. You have been registered as an Interested and Affected Party to receive information regarding the project. Please note we are undertaking an Environmental Assessment for the Kap Vley project where interested and affected parties are given an opportunity to raise comments and concerns on the wind energy project. A hard copy of the Draft Scoping Report is available for public viewing at the Kleinzee Police Station. **CSIR:** As stated above, the tender process for the appointment of service providers is a separate process that is managed by juwi. Your comment is noted by juwi.
10	The draft Scoping Report (SR) dated October 2017 and received by this Department on 31 October 2017, and the application form received by this Department on 31 October 2017 refer. This Department has the following comments on the abovementioned application: i. Please ensure that all relevant listed activities applied for, are specific and can be linked to the development activity or infrastructure as described	Mr Sabelo Malaza, National Department of Environmental Affairs	29 November 2017, Email	**CSIR:** Thank you for your comments, please see responses below as per your corresponding numbering: i. The relevant listed activities linked to the specific proposed development have been included as required. ii. The originally listed activities applied for are still correct, thus no updated application required at this time.

NO.	COMMENTS	COMMENTATOR	DATE & FORMAT	RESPONSE
	in the project description. ii. If the activities applied for in the application form differ from those mentioned in the draft SR, an amended application form must be submitted with the final SR. Please note that the Department's application form template has been amended and can be downloaded from the following link httpszllwwwenvironment.gov.zaldocuments/forms. iii. The final SR must provide evidence that all identified and relevant competent authorities have been given an opportunity to comment on the proposed development; particularly the Square Kilometre Array South Africa, the South African Astronomical Observatory, the Northern Cape Department of Environment and Nature Conservation (DENC), the District and Local Municipalities, and the South African National Parks (SANParks). iv. Please ensure that all issues raised and comments received, during the circulation of the draft SR, from registered I&APs and organs of state which have jurisdiction (including this Department's Biodiversity Section) in respect of the proposed activity are adequately addressed in the final SR. Proof of correspondence with the various stakeholders must be included in the final SR. Should you be unable to obtain comments, proof should be submitted to the Department of the attempts that were made to obtain comments. The Public Participation Process must be conducted in terms of Regulation 39, 40, 41, 42, 43 & 44 of the EIA Regulations 2014, as amended.			iii. Please see Appendix C for the I&AP database and Appendix D for proof of correspondence to I&APs, and as well as copies of the comments received from I&APs where relevant. The said authorities were invited to comment on the Draft Scoping Report. Please note that an application for this project has been created on SAHRIS, and the following reference number was assigned: Case ID: 11654.Comments were received from SAHRA (see comment no 1 above and Appendix D for a copy of the letter from SAHRA). iv. Please see response above. All comments received have been responded to in this Appendix B. Proof of correspondence with the relevant authorities is included in Appendix D. Comments received from the competent Authorities, where relevant, are included in Appendix D as well as proof of correspondence with authorities who did not provide comments on the Draft Scoping Report. The comments received from DEA on the Draft Scoping Report are included in Appendix E. CDs of the DSR were sent to the Department's Biodiversity Conservation section. Please see the proof of courier slip in Appendix D3 as proof that CDs of the Draft Scoping Report were sent to the Biodiversity section. The courier was addressed to Mr Stanley Tshitwamulomoni, but contained two CDs-the second CD was for Ms Pamela Kershaw of the Protected Area Management Directorate). A CD of the report was also sent to Ms Wilma Lutsch (Biodiversity Conservation) via registered mail on 30 October 2017 (see Appendix D for proof of registered mail sent). See email confirmation below: *Email from CSIR on 10/11/2017*

NO.	COMMENTS	COMMENTATOR	DATE & FORMAT	RESPONSE
	v. A comments and response trail report (C&R) must be submitted with the final SR. The C&R report must incorporate all historical comments for this development. The C&R report must be a separate document from the main report and the format must be in the table format as indicated in Annexure 1 of this comments letter. Please refrain from summarising comments made by I&APs. All comments from I&APs must be copied verbatim and responded to clearly. Please note that a response such as "Noted" is not regarded as an adequate response to I&AP's comments. vi. Specialist studies to be conducted must provide a detailed description of their methodology, as well as indicate the locations and descriptions of turbine positions, and all other associated infrastructures that they have assessed and are recommending for authorisations. vii. The specialist studies must also provide a detailed description of all limitations to their studies. All specialist studies must be conducted in the right season and providing that as a limitation, will not be accepted. viii. The "in principle letters" for the process of determining an offset from WWF and SANParks dated 10 August 2017 and 25 August 2017, respectively, are noted. ix. As advised in various email correspondence, this Department requests that all necessary information			Good Day Stanley Thank you for your query this morning. Please note that an email notification for the release of the Draft Scoping Report as well as a CD copy of the Draft Scoping Report were sent to Wilma Lutsch via registered mail on the 30th of October 2017. Please see the attached proof of postage. In addition, two additional CDs were sent via courier to you and Pamela yesterday. Thank you for confirmation of receipt as discussed with Minnelise Levendal this morning. Kind Regards Reinett Mogotshi v. Appendix B (this appendix) contains the issues and responses trail report in the required format. All comments received have been included here. Please note that the issues and responses trail have subsequently being moved to Appendix F of the Updated Draft EIA Report. vi. Specialist studies adhere to these requirements and the specialist studies included in the Draft EIA Report are released for a 30-day commenting period. vii. Specialist studies provide a description of limitations and were conducted in the relevant season as requested. viii. Discussions are ongoing with these entities with a site

NO.	COMMENTS	COMMENTATOR	DATE & FORMAT	RESPONSE
	which will include inter alia the total loss of biodiversity versus the net gain, where the loss will occur and where it will be replaced, be provided in order to able to make an informed decision on the application. x. This Department will be guided by colleagues from this Department's Protected Area Management and Biodiversity & Conservation units, as well as the DENC on the offset process. As such, the EAP must ensure that all documents related to this project are also submitted to these commenting authorities. xi. Should the appointed Specialists specify contradicting recommendations, the EAP must clearly indicate the most reasonable recommendation and substantiate this with defendable reasons; and were necessary, include further expertise advice. xii. Please note that the Department considers a 'no-go' area, as an area where no development of any infrastructure is allowed; therefore, no development of associated infrastructure including access roads and internal cables is allowed in the 'no-go' areas. xiii. Should the specialist definition of 'no-go' area differ from the Departments definition; this must be clearly indicated. The specialist must also indicate the 'no-go' area's buffer. xiv. Where specialist studies are conducted in-house or by a specialist other than a suitably qualified specialist in the relevant field, such specialist reports			visit scheduled for mid-April 2018. ix. A Biodiversity Offset study has been undertaken by Simon Todd Consulting and is included in Appendix Q (of this Draft EIA Report) and includes the information requested (*inter alia* the total loss of biodiversity versus the net gain, where the loss will occur and where it will be replaced). This study will be updated following discussions and agreements between the different parties involved. The completed offset study will be included in the Final EIA Report x. All the documents have been provided to the said departments for comment. xi. The EAP complied with this requirement. xii. This is noted and has been included in the specialist ToRs (see Chapter 4, Section 4.7). xiii. The specialist studies indicate what is allowed and what should be excluded from the no-go areas. The Terrestrial Ecological Impact Assessment indicates that no development of turbines, roads of other infrastructure are allowed within no-go areas. The Heritage Impact Assessment notes that the graves on site will be avoided as they are regarded as no-go areas. The Bat Impact Assessment notes that a confirmed roost was located at a farmstead approximately 1,600 m to the nearest turbine. This roost has been buffered with a no go buffer of 1 km in which no turbines, or parts of a turbine, should be constructed. Other infrastructure, such as roads and powerlines, is permitted in this buffer.

NO.	COMMENTS	COMMENTATOR	DATE & FORMAT	RESPONSE
	must be peer reviewed by a suitably qualified external specialist in the relevant field. The terms of reference for the peer review must include: • A CV clearly showing expertise of the peer reviewer; • Acceptability of the terms of reference; • Is the methodology clearly explained and acceptable; • Evaluate the validity of the findings (review data evidence); • Discuss the suitability of the mitigation measures and recommendations; • Identify any short comings and mitigation measures to address the short comings; • Evaluate the appropriateness of the reference literature; • Indicate whether a site-inspection was carried out as part of the peer review; and • Indicate whether the article is well-written and easy to understand. xv. The bat and avifaunal specialist assessments must assess and make recommendations for definite measurements for the preferred hub heights and rotor diameter. xvi. The proposed development is located adjacent to the authorised Eskom's Kleinzee WEF. The final SR			xiv. Two specialist studies are conducted in-house by the CSIR. i.e. the Dry and Ephemeral Watercourses Impact Assessment and- and the Socio-Economic Impact Assessment. These studies were peer reviewed and accepted by two suitably qualified external specialists. Dr Liz Day of Freshwater Consulting and Ms Elena Broughton of Urban-Econ Development Economists reviewed the Aquatic and the Socio-Economic Impact Assessments, respectively. The said requirements were included in the ToR for the peer reviews. xv. This requirement was included in the ToRs for the bat and avifaunal specialist assessments. The bird specialist assessed and accepted the range as proposed (see Bird Impact Assessment in Appendix H). The bat specialist assessed the range as proposed and indicated that it would be preferential to use a higher hub height and shorter rotor diameter (see Bat Impact Assessment in Appendix I). xvi. The Wake Effect Analysis was conducted and is included in Appendix R of this Draft EIAr. xvii. The cumulative impacts have been assessed by all the specialists and all the requirements listed will be adhered to. xviii. The competing land use is predominantly agriculture, i.e. grazing. The area is very dry and arid and competing land uses are limited. Kleinzee used to be a thriving mining town, but when the mining operations ceased there was a significant decline in the population. Kleinzee had a total population of 728

NO.	COMMENTS	COMMENTATOR	DATE & FORMAT	RESPONSE
	must include a terms of reference for a wake effect analysis input to assess the impact of the proposed development on this development; where this is not necessary, specialist input must be included. xvii. Should there be any other similar projects within a 30 km radius of the proposed development site, the cumulative impact assessment for all identified and assessed impacts must be refined to indicate the following: ➢ Identified cumulative impacts must be clearly defined, and where possible the size of the identified impact must be quantified and indicated, i.e. hectares of cumulatively transformed land. ➢ Detailed process flow and proof must be provided, to indicate how the specialists recommendations, mitigation measures and conclusions from the various similar developments in the area were taken into consideration in the assessment of cumulative impacts and when the conclusion and mitigation measures were drafted for this project. ➢ The cumulative impacts significance rating must also inform the need and desirability of the proposed development. ➢ A cumulative impact environmental statement on whether the proposed development must proceed. xviii. The final SR must indicate and describe the competing land uses in the area. This must further motivate the desirability of locating the wind energy facility at the preferred location. xix. The EAP must ensure that all appointed specialists			people with a household size of 1.9 (Census, 2011). The local community will benefit from the proposed wind farm and will therefore make a much needed positive economic contribution to the area. Further information in this regard is included in Chapter 1 (Section 2.1 of Table 1.3). xix. This requirement has been adhered to. xx. Please see Appendix A for the CV of the EAP (Minnelise Levendal) that includes her details and expertise. xxi. Please see Chapter 1, Table 1.2, for a checklist of requirements of a Scoping Report as defined in terms of Appendix 2 of GN R326. xxii. These requirements have been complied with.

NO.	COMMENTS	COMMENTATOR	DATE & FORMAT	RESPONSE
	sign the "specialist declaration of interest" form. xx. In accordance with Appendix 2 of the EIA Regulations 2014, as amended, the details of- (i) the EAP who prepared the report; and (ii) the expertise of the EAP to carry out Scoping and Environmental impact assessment procedures; must be submitted. xxi. You are further reminded that the final SR to be submitted to this Department must comply with all the requirements in terms of the scope of assessment and content of Scoping reports in accordance with Appendix 2 and Regulation 21(1) of the EIA Regulations 2014, as amended. xxii. Further note that in terms of Regulation 45 of the EIA Regulations 2014, as amended, this application will lapse if the applicant fails to meet any of the timeframes prescribed in terms of these Regulations, unless an extension has been granted in terms of Regulation 3(7). You are hereby reminded of Section 24F of the National Environmental Management Act, Act No 107 of 1998, as amended, that no activity may commence prior to an environmental authorisation being granted by the Department.			
11	Genesis Zonnequa Wind (Pty) Ltd (Zonnequa) is developing a wind energy facility on a property neighbouring the Kap Vley development. The property is the Remainder of the Farm Zonnekwa No. 326 and is to the west of The Remainder of the	Sonia Miszczak (Project Manager) Genesis Zonnequa Wind (Pty) Ltd	28 November 2017, Email	**juwi**: *Email response on 12/4/2017* Dear Sonia,

NO.	COMMENTS	COMMENTATOR	DATE & FORMAT	RESPONSE
	Farm Kourootjie 316. The current proposed Alternative 2 Transmission Line for the Kap Vley project runs over the Remainder of the Farm Zonnekwa No. 326 and crosses through the proposed Zonnequa facility (google earth screenshot attached). As the Kap Vley development progresses, if Alternative 2 is selected as the preferred alternative, the Zonnequa team would like to be consulted on the routing of this line over the Remainder of the Farm Zonnekwa No. 326, and on the proximity of this Transmission Line to the Eskom 400kV servitude. Additionally, we would like to understand the Kap Vley WTG placements during the EIA process (second attached screenshot from the DSR) so that we can model and assess the potential wake effect as part of our energy yield analysis.			Thanks for your attached comment on our Kap Vley WEF. We have noted that our initial proposed Alternative 2 connection route crossed the Remainder of the Farm Zonnekwa No. 326 on which you are intending to develop a WEF. In preparation for the EIA phase we are updating our layouts based on comments and findings from the scoping phase. As part of this update we have rerouted this connection corridor to avoid the mentioned property, and thus eliminate potential impact on your proposed development. Please see below map of updated routing. The turbine layout is also currently being updated based on the outputs of the scoping phase, and may again change during final design when technology is known. The EIA layout will however be in the public domain and made available for your consideration. ***Note from CSIR*:** The email address provided in the comment form was subsequently corrected as requested by the commentator.

Table 2: Comments from Authorities received after the Final Scoping Report was submitted to the Competent Authority for decision-making.

DATE OF COMMENT, FORMAT OF COMMENT, NAME OF ORGANISATION/I&AP	COMMENT	RESPONSE FROM EAP/APPLICANT/SPECIALIST
01/12/2017 Email SAHRA Archaeology, Palaeontology and Meteorites (APM) Unit (Natasha Higgitt)	**SAHRA CaseID: 11654** **Interim Comment** SAHRA Archaeology, Palaeontology and Meteorites (APM) Unit notes that a Heritage Scoping Input Report has been submitted, and therefore awaits the pending Heritage Impact Assessment (HIA) as part of the draft EIA Phase as stated in Table 1.3 on page 14 of the DSR. The pending HIA must assess all heritage resources as defined in section 3(2) of the National Heritage Resources Act, Act 25 of 1999 (NHRA) and the report must comply with section 38(3) of the NHRA. The Archaeological and Palaeontological components of the HIA must comply with the SAHRA 2006 Minimum Standards for Archaeological and Palaeontological Components of Impact Assessments and the 2012 Minimum Standards: Palaeontological Components of Heritage Impact Assessments. Additionally, the Visual Impact of the proposed development on heritage resources and any comments provided by the public regarding heritage resources must be taken into consideration. The Scoping report appendices, the draft EIA with all appendices must be submitted along with the heritage reports in order for further comments to be issued.	A Heritage Impact Assessment (including Archaeology, Palaeontology and Cultural Landscape) was undertaken by Dr Jayson Orton of Asha Consulting (Pty) Ltd (see Appendix L). Please note a desktop Palaeontological assessment was undertaken by John Pether and is included in the Heritage Impact Assessment. The Draft EIAR with all the appendices (including the Heritage Impact Assessment) will be submitted to SAHRA for decision-making. Follow up note: The Draft EIA Report has been submitted to SAHRA and comments have been received from them. SAHRA noted that they have no objections to the proposed Kap Vley Wind Farm (see letter dated 24 May 2018 in Appendix D4)
19/12/2017 Email Department of Water and Sanitation (DWS), Northern Cape Region	1. Please note that taking of water from a water resource needs to be authorised by this Department. 2. All sewage, grey and wash water, as well as waste generated during the construction should be contained, collected and disposed of at a permitted or licensed facility. 3. Any spillage of any hazardous materials including diesel that may occur during storage, excavation and operation must be reported immediately to this Department. 4. Please note that no development should take place within the 1:100 year flood line. 5. Stormwater must be diverted from roads and must be managed in	1. This is noted. Water is planned to be trucked to site or supplied by the local municipality and will therefore not be taken from a watercourse. 2. This is noted and will be adhered to. Measures to this effect are also included in the EMPr in section B of this report. 3. This is noted and will be adhered to. Please refer to the Hazardous Substances Leakage or Spillage Monitoring System Plan included in Section 10 of the EMPr. It includes an

DATE OF COMMENT, FORMAT OF COMMENT, NAME OF ORGANISATION/I&AP	COMMENT	RESPONSE FROM EAP/APPLICANT/SPECIALIST
	such a manner as to disperse runoff and to prevent the concentration of stormwater flow. 6. Water storage tanks or lined ponds as listed on page 6 of the Draft Scoping Report needs to be authorized by this department. 7. Any other water use (s), subject to the National Water Act 36 (1998), section 21, must be adhered to and authorized by this Department, if applicable to this application. Please feel free to contact this Department, should there be any enquiries.	effective monitoring system to detect any leakage or spillage of all hazardous substances during their transportation, handling, use and storage. It also includes precautionary measures to limit the possibility of oil and other toxic liquids from entering the soil or storm water systems. 4. No development will take place within the 1:100 flood line. 5. This is noted and will be adhered to. Please refer to the Storm water Management Plan included in section 8 of the EMPr. 6. Please note that water will no longer be stored in water storage tanks or lined ponds. Authorisation from DWS is therefore no longer required. 7. Noted. The DWS will be consulted with during the EIA Process to confirm the need for a WUL, as well as to seek comment on the proposed project during the commenting period of the Draft EIA Report.

Table 3: Comments included in the Acceptance of Scoping Letter following the submission of the Final Scoping Report to the Competent Authority, together with the response from the EIA team.

DATE OF COMMENT, FORMAT OF COMMENT, NAME OF ORGANISATION/I&AP	COMMENT	RESPONSE FROM EAP/APPLICANT/SPECIALIST
12/02/2018 Letter sent via Email and Post Department of Environmental Affairs: Strategic Infrastructure Development (Sabelo Malaza)	This Department has evaluated the submitted SR and the PoSEIA dated December 2017 and is satisfied that the documents comply with the minimum requirements of the Environmental Impact Assessment (EIA) Regulations, 2014 as amended. The SR is hereby accepted by the Department in terms of Regulation 22 (a) of the EIA Regulations, 2014 as amended. You may proceed with the Environmental Impact Assessment process in accordance with the tasks contemplated in the PoSEIA and the requirements of the EIA Regulations, 2014 as amended. All comments and recommendations made by all stakeholders and Interested and Affected Parties (I&APs) in the draft SR and submitted as part of the final SR must be taken into consideration when preparing an Environmental Impact Assessment report (EIAr) in respect of the proposed development. Please ensure that all mitigation measures and recommendations in the specialist studies are addressed and included in the final EIAr and Environmental Management Programme (EMPr). Please ensure that comments from all relevant stakeholders are submitted to the Department with the final EIAr. This includes but is not limited to the Northern Cape Department of Environment and Nature Conservation, the Department of Agriculture, Forestry and Fisheries (DAFF), the provincial Department of Agriculture, the South African Civil Aviation Authority (SACAA), the Department of Transport, the Nama Khoi Local Municipality, the Namakwa District Municipality, the Department of Water and Sanitation (DWS), the South African National Roads Agency Limited (SANRAL), the South African Heritage Resources Agency (SAHRA), Birdlife SA, the Department of Mineral Resources, the Department of Rural Development and Land Reform, the Square Kilometre Array South Afrika (SKA-SA), the Department of	**CSIR:** Thank you for these comments. Please see responses below as per your corresponding numbering: All opening remarks are noted and agreed with. All comments and recommendations made by all stakeholders and I&APs in the draft SR and submitted as part of the final SR have been taken into consideration when preparing the EIAr for the Kap Vley WEF. All mitigation measures and recommendations in the specialist studies are addressed and included in the Draft EIAr and EMPr and will also be included in the final EIAr and final EMPr. All comments received from all relevant stakeholders (as noted) will be submitted to the DEA with the final EIAr. All issues raised by Organs of State and I&APs prior to the submission of the EIAr to the Department will be addressed. Proof of correspondence with the various stakeholders will be included in the EIAr. All registered I&APs will be provided with an opportunity to comment on the Draft EIAr in writing within 30 days before submitting the final EIAr to the DEA.

DATE OF COMMENT, FORMAT OF COMMENT, NAME OF ORGANISATION/I&AP	COMMENT	RESPONSE FROM EAP/APPLICANT/SPECIALIST
	Environmental Affairs: Directorate Biodiversity and Conservation, the Department of Environmental Affairs: Directorate Protected Area Management. You are also required to address all issues raised by Organs of State and I&APs prior to the submission of the EIAr to the Department. Proof of correspondence with the various stakeholders must be included in the EIAr. Should you be unable to obtain comments, proof should be submitted to the Department of the attempts that were made to obtain comments. The EAP must, in order to give effect to Regulation 8, give registered I&Aps access to, and an opportunity to comment on the report in writing within 30 days before submitting the final EIAr to the Department. In addition, the following additional information is required for the EIAr: i. The ElAr must provide an assessment of the impacts and mitigation measures for each of the listed activities applied for. ii. <u>The listed activities represented in the ElAr and the application form must be the same and correct.</u> iii. <u>The EIAr must assess the correct sub listed activity for each listed activity applied for.</u> Please note that the EAP must remove any sub-listed activities that are not listed from the application form and assessment reports. iv. <u>The EAP must provide landowner consent for all farm portions affected by the proposed project, whether the project component is linear or not,</u> i.e. all farm portions where the pipeline, access road, wind turbines and associated infrastructure is to be located. v. The EIAr must provide the technical details for the proposed facility in a table format as well as their description and/or dimensions. A sample for the minimum information required is listed under point 2 of the EIA information required for wind energy facilities below. vi. The EIAr must provide the four corner coordinate points for the proposed development site (note that if the site has numerous bend points, at each	i. The Final EIAr will reflect the listed activities that are being assessed. Should this differ from the application form, an amended application form will be submitted with the Final EIAr. The listed activities contained in this Draft EIAr are however the same as the ones contained in the original application form. ii. Please see comment above in response. iii. The EIAr assessed the correct sub-listed activity for each listed activity applied for. The sub-listed activities that are not relevant have not been included. iv. Landowner consent from the affected landowners for the EIA process of the proposed Kap Vley WEF was attached to the Application Form that was submitted to DEA with the Draft Scoping Report. These consent forms are again attached to this Draft EIAr as Appendix B. v. Please refer to Table 1.1 in Chapter 1 for this completed table. Chapter 2 also provides further details on the project description. vi. Please refer to Chapter 2, Table 2.1 for the corner co-ordinates of the site. vii. Please refer to Chapter 1 (Figure 1.1) and Chapter 2 (Figures 2.1), for the map inclusive of these details. Figure 2.2 provides the generic design for a wind turbine. Figure 2.3 provides an example of a hard standing area and crane platform. viii. This Appendix (Appendix F) constitutes the Comments and Responses Report, using the format as indicated in the aforementioned letter. ix. Comments received in Afrikaans on the Draft Scoping Report have been translated. See

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<tr><td></td><td>bend point coordinates must be provided) as well as the start, middle and end point of all linear activities.
vii. The EIAr must provide the following:
- Clear indication of the envisioned area for the proposed wind energy facility; i.e. placing of wind turbines and all assessed infrastructure should be mapped at an appropriate scale.
- Clear description of all associated infrastructure. This description must include, but is not limited to the following:
➢ Powerlines;
➢ Internal road infrastructure; and;
➢ All supporting onsite infrastructure such as laydown area, guard house and control room etc.
➢ All necessary details regarding all possible locations and sizes of the proposed satellite substation and the main substation.
viii. The EIAr must also include a comments and response report in accordance with Appendix 2 h (iii) of the EIA Regulations, 2014 as amended.
ix. Comments in Afrikaans must be translated into English in the comments and response report.
x. The EIAr must include the detail inclusive of the PPP in accordance with Regulation 41 of the EIA Regulations, 2014 as amended.
xi. Details of the future plans for the site and infrastructure after decommissioning in 20-30 years and the possibility of upgrading the proposed infrastructure to more advanced technologies.
xii. The terms of reference (ToR) for the following specialist studies are accepted to be assessed in the assessment phase:
<table><tr><th>Specialist study</th><th>Appointed specialist</th></tr><tr><td>Avifauna</td><td>Arcus</td></tr><tr><td>Bat</td><td>Arcus</td></tr><tr><td>Terrestrial Ecology (including flora and fauna)</td><td>Simon Todd</td></tr><tr><td>Biodiversity Offset Study</td><td>Simon Todd</td></tr></table></td><td>comments 7 and 8 in Table 1 above.
x. Chapter 4, Section 4.4 details the public participation process for this project followed as per Regulation 39, 40, 41, 42, 43 and 44 of the EIA Regulations 2014, as amended.
xi. Details of the future plans for the site and infrastructure after decommissioning are provided in Chapter 2, Section 2.2.4.
xii. Noted. Please note the Aquatic Impact Assessment has subsequently been renamed to the “Dry and Ephemeral Watercourses Impact Assessment”. The "Dry and Ephemeral Watercourses study” included in this EIA Report fulfills the requirements and Terms of Reference set out in the Plan of Study for the Aquatic Ecology Impact Assessment. As the study progressed and upon site investigation it became clear that "Aquatic Ecology" was not the appropriate terminology to describe the on site-conditions, which were verified to be characterised by dry and ephemeral watercourses (including drainage lines) that play an important role within this particular arid landscape, but is not strictly aquatic.

Please note the Wake Effect Analysis has been done by Stefanie Bourne of DNV GL South Africa (Pty) Ltd (see Appendix R).

xiii. All the specialist studies were undertaken at the most appropriate time.
xiv. Two specialist studies were conducted in-house, i.e. the Dry and Ephemeral Watercourses Impact Assessment and the Socio-Economic Impact</td></tr>
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<tr><td></td><td>
<table>
<tr><td>Aquatic Impact Assessment</td><td>CSIR (Peer reviewed by Freshwater Consulting)</td></tr>
<tr><td>Visual Impact Assessment</td><td>Landscape Architect and BOLA</td></tr>
<tr><td>Heritage Impact Assessment (Archaeology and Cultural Landscape)</td><td>ASHA Consulting (Pty) Ltd</td></tr>
<tr><td>Desktop Palaeontological Impact Assessment</td><td>ASHA Consulting (Pty) Ltd</td></tr>
<tr><td>Soils and Agricultural Potential Impact Assessment</td><td>Johann Lanz</td></tr>
<tr><td>Socio-Economic Impact Assessment</td><td>CSIR (Peer reviewed by Urban-Econ Development Economists)</td></tr>
<tr><td>Noise Impact Assessment</td><td>Enviro-Acoustic Research</td></tr>
<tr><td>Transportation Impact Assessment</td><td>WSP Group Africa</td></tr>
<tr><td>Wake Effect Analysis</td><td>Not yet appointed</td></tr>
</table>

xiii. All specialist studies must be undertaken at the most appropriate time, and detailed reasons must be provided for why the study was undertaken during said period.
xiv. Where specialist studies are conducted in-house or by a specialist other than a suitably qualified specialist in the relevant field, such specialist reports must be peer reviewed by a suitably qualified external specialist in the relevant field. The terms of reference for the peer review must include:
➢ A CV clearly showing expertise of the peer reviewer;
➢ Acceptability of the terms of reference;
➢ Is the methodology clearly explained and acceptable;
➢ Evaluate the validity of the findings (review data evidence);
➢ Discuss the suitability of the mitigation measures and recommendations;
➢ Identify any short comings and mitigation measures to address the short comings;
➢ Evaluate the appropriateness of the reference literature;
➢ Indicate whether a site-inspection was carried out as part of the peer</td><td>Assessment (Appendix J and N respectively). The studies were peer reviewed by Dr Liz Day of Freshwater Consulting and Dr Elena Broughton of Urban-Econ Development Economists respectively (the reviews are included in Appendix J and N respectively). The ToRs of the reviewers abide by the requirements stipulated by DEA.
xv. The EIAr adheres to all the comments issued by DEA on the DSR dated 29 November 2017.
xvi. Noted. The Project Applicant is in on-going consultation with WWF, SANPARKS, DENC and DEA to mitigate some of the potential negative impacts on the plant species and habitats of special concern on the Kap Vley WEF site.
xvii. An Ecological Offset Study has been prepared by Simon Todd Consulting and is included in Appendix Q of this Draft EIAR. Details regarding the proposed offset can be found in this study.
xviii. The Draft EIAR has been submitted to the Department's Protected Area Management and Biodiversity & Conservation units, as well as the DENC for comment. All other relevant documents on the offset process will also be submitted to the said Departments for comment.
xix. The specialist studies (Appendices G to P) have highlighted sensitive features within the original development footprint, and thus the footprint has been adjusted to avoid such features. Based on the findings of the specialist studies, an environmental sensitivity map has been produced (see Figure 5.7 in Chapter 5). This map shows the sensitivities on site (terrestrial, watercourse features, and sensitive heritage features) within the areas that</td></tr>
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	review; and ➢ Indicate whether the article is well-written and easy to understand. xv. The EIAr must adhere to all the comments issued by this Department on the Draft SR dated 29 November 2017. xvi. The "in principle letters" for the process of determining an offset from WWF and SANParks dated 10 August 2017 and 25 August 2017, respectively, are noted. xvii. As advised in various email correspondence, this Department requests that all necessary information which will include inter alia the total loss of biodiversity versus the net gain, where the loss will occur and where it will be replaced, be provided in order to be able to make an informed decision on the application. xviii. This Department will be guided by colleagues from this Department's Protected Area Management and Biodiversity & Conservation units, as well as the DENC on the offset process. As such, the EAP must ensure that all documents related to this project are also submitted to these commenting authorities. xix. Based on the above, as well as the Scoping process identifying the majority of the turbines located in medium to high and very high sensitivity areas, the EAP must assess location alternatives within the assessed areas. xx. The bat and avifaunal specialist assessments must assess and make recommendations for the definite measurements for the preferred hub heights and rotor diameter. xxi. The specialist studies to be conducted must provide a detailed description of their methodology, as well as indicate the locations and descriptions of turbines that they have assessed. xxii. The specialist studies must also provide a detailed description of all limitations to their studies. It must be also noted that all specialist studies must be conducted in the correct season, and conducting a specialist study in the incorrect season and providing that as a limitation will not be allowed. xxiii Should the appointed specialists specify contradicting	were assessed. Based on this map, the preferred location for the 128 ha Kap Vley WEF, avoids the sensitive features that were identified by the specialists. Following the exclusion of the required areas, sufficient developable area is still available on site which does not compromise the current ecological integrity of the site or disobey the wishes of the landowners. The areas with feasible wind resources are, however limited to the ridges where the footprints are currently located. xx. This requirement was included in the ToRs for the bat and avifaunal specialist assessments. The bird specialist assessed and accepted the range as proposed (see Bird Impact Assessment in Appendix H). The bat specialist assessed the range as proposed and indicated that it would be preferential to use a higher hub height and shorter rotor diameter (see Bat Impact Assessment in Appendix I). xxi. The specialist studies conducted provide a detailed description of their methodology, as well as indicate the locations and descriptions of turbines that they have assessed. xxii. The specialist studies provide a detailed description of all limitations to their studies. The specialist studies were conducted in the correct season. xxiii. This is noted and agreed. There are currently no contradicting recommendations from the specialists. xxiv. Where a different interpretation to No-Go areas was used by a specialist it was clearly indicated in

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	recommendations, the EAP must clearly indicate the most reasonable recommendation and substantiate this with defendable reasons; and where necessary, include further expertise advice. xxiv. Please note that the Department considers a 'no-go' area, as an area where no development of any infrastructure is allowed; therefore, no development of associated infrastructure including access roads and internal cables is allowed in the 'no-go' areas. xxv. Should the specialist definition of 'no-go' area differ from the Department's definition; this must be clearly indicated. The specialist must also indicate the 'no-go' area's buffer. xxvi. The ElAr must provide a detailed description of the need and desirability, not only providing motivation on the need for clean energy in South Africa of the proposed activity. <u>The need and desirability must also indicate if the proposed development is needed in the region and if the current proposed location is desirable for the proposed activity compared to other sites.</u> The need and desirability must take into account cumulative impacts of the proposed development in the area. xxvii. The proposed development is located adjacent to the authorised Eskom's Kleinzee WEF. The PoSEIA in the final SR must include a terms of reference for a wake effect analysis input to assess the impact of the proposed development on this development; where this is not necessary, specialist input must be included. xxviii. The EIAr must include a detailed **<u>cumulative impact assessment</u>** of the facility if there are other similar facilities within a 30 km radius of the proposed development site. All the specialist studies e.g. biodiversity, visual, heritage etc. in the PoSEIA which is incorporated as part of the SR must also assess the facility in terms of potential cumulative impacts. The cumulative impact assessment for all identified and assessed impacts must indicate the following: ➢ Identified cumulative impacts must be clearly defined, and where possible the size of the identified impact must be quantified and indicated, i.e. hectares of cumulatively transformed land. ➢ Detailed process flow and proof must be provided, to indicate how	the study. xxv. The specialist studies indicate what is allowed and what should be excluded from the no-go areas. The Terrestrial Ecological Impact Assessment indicates that no development of turbines, roads of other infrastructure are allowed within no-go areas. The Heritage Impact Assessment notes that the graves on site will be avoided as they are regarded as no-go areas. The Bat Impact Assessment notes that a confirmed roost was located at a farmstead approximately 1,600 m to the nearest turbine. This roost has been buffered with a no go buffer of 1 km in which no turbines, or parts of a turbine, should be constructed. Other infrastructure, such as roads and powerlines, is permitted in this buffer. xxvi. Please see the Needs and Desirability table (Table 1.3) in Chapter 1 of this report which also details regional and locational motivation. It also takes cumulative impacts into account. xxvii. A Terms of Reference for a wake effect analysis was included in the FSR. A Wake Effect study statement was conducted as requested by DEA in their comment letter on the Draft Scoping Report. juwi appointed DNV GL South Africa (Pty) Ltd ("DNV GL") to qualitatively evaluate the potential wake impact of the Kap Vley wind farm on a proposed relatively nearby wind farm undergoing development by Eskom ("Eskom Project"). The full Wake Effect study statement and the implications of this proposed project for this is attached as Appendix R. Based on the location of the proposed wind farms, the wind rose and the distance of the

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	the specialist's recommendations, mitigation measures and conclusions from the various developments in the area were taken into consideration in the assessment of cumulative impacts and when the conclusion and mitigation measures were drafted for this project. ➢ Identified cumulative impacts associated with the proposed development must be rated with the significance rating methodology approved with the acceptance of the scoping report. ➢ The cumulative impact significance rating must also inform the need and desirability of the proposed development. ➢ A cumulative impact environmental statement on whether the proposed development must proceed. xxix. Please note that information on location of renewable energy developments can be accessed from https://www/environment.gov.za/mapsgraphics xxx. A copy of the final site layout map. All available biodiversity information must be used in the finalisation of the layout map. Existing infrastructure must be used as far as possible e.g. roads. The layout map must indicate the following: • Wind turbine positions (numbered) and its associated infrastructure; • Permanent laydown area footprint; • Internal roads indicating width (construction period width and operation period width) and with numbered sections between the other site elements which they serve (to make commenting on sections possible); • Wetlands, drainage lines, rivers, stream and water crossing of roads and cables indicating the type of bridging structures that will be used; • The location of sensitive environmental features on site e.g. CBAs, heritage sites, wetlands, drainage lines etc. that will be affected by the facility and its associated infrastructure; • Substation(s) and/or transformer(s) sites including their entire footprint; • Connection routes (including pylon positions) to the distribution/transmission network;	projects from one another, DNV GL believes that wake impact of the proposed Kap Vley wind farm on the neighbouring Eskom wind farm to be negligible. xxviii. Please see each specialist study attached as Appendix G to P for an assessment of the cumulative impacts as per your comment. In addition, Chapter 6 and 7 include an assessment of the cumulative impacts. xxix. This website is noted and was used to identify other renewable energy projects within 50 km from the proposed Kap Vley WEF. A list of other renewable energy projects is provided in Table 6.1 as well as spatially depicted in Figure 6.1 of Chapter 6. xxx. Please see Chapter 2 (and the EMPr) for the final site layout map and Chapter 3 (and EMPr) for the site sensitivity layout map which has been informed by all environmental sensitivities. xxxi. Please see Chapter 3 (and the EMPr) for a map inclusive of all environmental sensitivities on site. xxxii. Please see the EMPr (Appendix B) for a map with the final site layout superimposed on the environmental sensitivities map. xxxiii. A shapefile of the preferred development layout/footprint has been submitted to DEA in electronic format in conjunction with the submission of this Draft EIAR. The Environmental Management Programme (EMPr) requirements (i) to (xvii) are included below and have also been included in Table 5 of the EMPr attached as Part B to this Draft EIAR. The EMPr is inclusive of the Final Site layout

<table>
<tr><th>DATE OF COMMENT, FORMAT OF COMMENT, NAME OF ORGANISATION/I&AP</th><th>COMMENT</th><th>RESPONSE FROM EAP/APPLICANT/SPECIALIST</th></tr>
<tr><td></td><td>

All existing infrastructure on the site, especially roads;
Buffer areas;
Buildings, including accommodation; and
All “no-go” areas.

xxxi. An environmental sensitivity map indicating environmental sensitive areas and features identified during the EIA process.
xxxii. A map combining the final layout map superimposed (overlain) on the environmental sensitivity map.
xxxiii. A shapefile of the preferred development layout/footprint must be submitted to this Department. The shapefile must be created using the Hartebeesthoek 94 Datum and the data should be in Decimal Degree Format using the WGS 84 Spheroid. The shapefile must include at a minimum the following extensions i.e. .shp; .shx; .dbf; .prj; and, .xml (Metadata file). If specific symbology was assigned to the file, then the .avl and/or the .lyr file must also be included. Data must be mapped at a scale of 1:10 000 (please specify if an alternative scale was used). The metadata must include a description of the base data used for digitizing. The shapefile must be submitted in a zip file using the EIA application reference number as the title. The shape file must be submitted to:

Postal Address:
Department of Environmental Affairs
Private Bag X447
Pretoria, 0001

Physical address:
Environment House
473 Steve Biko Road
Pretoria

For Attention: Muhammad Essop
Integrated Environmental Authorisations
Strategic Infrastructure Developments</td><td>
map as well as the layout overlain on the environmental sensitivities map.

<table>
<tr><th>DEA Requirements</th><th>Relevant Section in the EMPr</th></tr>
<tr><td>i. All recommendations and mitigation measures recorded in the EIAr and the specialist studies conducted.</td><td>Recommended mitigation measures and monitoring actions as noted in the EIA Report and specialist studies have been included in this EMPr, where relevant.</td></tr>
<tr><td>ii. The final site layout map</td><td>Refer to Figure 1 and Appendix A of this EMPr for the site layout map. Refer to Section 1.1 of the EMPr for a description of the approach followed to determine the site layout.</td></tr>
<tr><td>iii. Measures as dictated by the final site layout map and micro-siting.</td><td>Refer to Appendix A of this EMPr for the site layout map. Refer to Section 1.1 of the EMPr for a description of the approach followed to determine the site layout.</td></tr>
<tr><td>iv. An environmental sensitivity map indicating environmental sensitive areas and</td><td>Refer to Appendix B of the EMPr for an environmental sensitivity map. Refer to Section 1.1 of this EMPr for a description of the</td></tr>
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</td></tr>
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DATE OF COMMENT, FORMAT OF COMMENT, NAME OF ORGANISATION/I&AP	COMMENT	RESPONSE FROM EAP/APPLICANT/SPECIALIST	
	Telephone Number: (012) 399 9406 Email Address: MEssop@environ ment.gov.za The Environmental Management Programme (EMPr) to be submitted as part of the ElAr must include the following: i. All recommendations and mitigation measures recorded in the ElAr and the specialist studies conducted. ii. The final site layout map. iii. Measures as dictated by the final site layout map and micro-siting. iv. An environmental sensitivity map indicating environmental sensitive areas and features identified during the EIA process. v. A map combining the final layout map superimposed (overlain) on the environmental sensitivity map. vi. An alien invasive management plan to be implemented during construction and operation of the facility. The plan must include mitigation measures to reduce the invasion of alien species and ensure that the continuous monitoring and removal of alien species is undertaken. vii. A plant rescue and protection plan which allows for the maximum transplant of conservation important species from areas to be transformed. This plan must be compiled by a vegetation specialist familiar with the site and be implemented prior to commencement of the construction phase. viii. An avifauna monitoring and management plan to be implemented during the construction and operation of the facility. This plan must be drafted by a suitably qualified avifauna specialist. ix. A re-vegetation and habitat rehabilitation plan to be implemented during the construction and operation of the facility. Restoration must be undertaken as soon as possible after completion of construction activities to reduce the amount of habitat converted at any one time and to speed up the recovery to natural habitats. x. An open space management plan to be implemented during the construction and operation of the facility.		
		features identified during the EIA Process.	approach followed to identify the environmental sensitivities.
		v. A map combining the final layout map superimposed (overlain) on the environmental sensitivity map.	Refer to Appendix B of the EMPr for a combined environmental sensitivity and layout map. Refer to Section 1.1 of the EMPr for a description of the approach followed to identify the environmental sensitivities and to determine the site layout.
		vi. An alien invasive management plan to be implemented during the construction and operation of the facility. The plan must include mitigation measures to reduce the invasion of alien species and ensure that the continuous monitoring and removal of alien species is undertaken.	Refer to Section 4 of the EMPr.
		vii. A plant rescue and protection plan which allows for the transplant of	Refer to Section 5 of the EMPr. It should be noted that faunal protection and habitat rehabilitation has

DATE OF COMMENT, FORMAT OF COMMENT, NAME OF ORGANISATION/I&AP	COMMENT	RESPONSE FROM EAP/APPLICANT/SPECIALIST	
	xi. A traffic management plan for the site access roads to ensure that no hazards would result from the increased truck traffic and that traffic flow would not be adversely impacted. This plan must include measures to minimize impacts on local commuters e.g. limiting construction vehicles travelling on public roadways during the morning and late afternoon commute time and avoid using roads through densely populated built-up areas so as not to disturb existing retail and commercial operations. xii. A transportation plan for the transport of components, main assembly cranes and other large pieces of equipment. xiii. A storm water management plan to be implemented during the construction and operation of the facility. The plan must ensure compliance with applicable regulations and prevent off-site migration of contaminated storm water or increased soil erosion. The plan must include the construction of appropriate design measures that allow surface and subsurface movement of water along drainage lines so as not to impede natural surface and subsurface flows. Drainage measures must promote the dissipation of storm water run-off. xiv. A fire management plan to be implemented during the construction and operation of the facility. xv. An erosion management plan for monitoring and rehabilitating erosion events associated with the facility. Appropriate erosion mitigation must form part of this plan to prevent and reduce the risk of any potential erosion. xvi. An effective monitoring system to detect any leakage or spillage of all hazardous substances during their transportation, handling, use and storage. This must include precautionary measures to limit the possibility of oil and other toxic liquids from entering the soil or storm water systems. xvii. Measures to protect hydrological features such as streams, rivers, pans, wetlands, dams and their catchments, and other environmental sensitive areas from construction impacts including the direct or indirect spillage of pollutants.		
		conservation important species from areas to be transformed. This plan must be compiled by a vegetation specialist familiar with the site and be implemented prior to commencement of the construction phase.	also been included in this section.
		viii. An avifauna monitoring and management plan to be implemented during the construction and operation of the facility. This plan must be drafted by a suitably qualified avifauna specialist	Refer to Section 12 of the EMPr.
		ix. A re-vegetation and habitat rehabilitation plan to be implemented during the construction and operation of the facility. Restoration must be undertaken as soon as possible after completion of construction activities	Refer to Section 5 of the EMPr. It should be noted that faunal protection and habitat rehabilitation has also been included in this section.

DATE OF COMMENT, FORMAT OF COMMENT, NAME OF ORGANISATION/I&AP	COMMENT	RESPONSE FROM EAP/APPLICANT/SPECIALIST	
			to reduce the amount of habitat converted at any one time and to speed up the recovery to natural habitats.
		x.	An open space management plan to be implemented during the construction and operation of the facility.	Refer to Section 6 of the EMPr.
		xi.	A traffic management plan for the site access roads to ensure that no hazards would result from the increased truck traffic and that traffic flow would not be adversely impacted. This plan must include measures to minimise impacts on local commuters e.g. limiting construction vehicles travelling on public roadways during the morning and late afternoon commute time and avoid using roads through densely	Refer to Section 7 of the EMPr.

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			populated built-up areas so as not to disturb existing retail and commercial operations.
		xii.	A transportation plan for the transport of components, main assembly cranes and other large pieces of equipment.	Refer to Section 7 of the EMPr.
		xiii.	A storm water management plan to be implemented during the construction and operation of the facility. The plan must ensure compliance with applicable regulations and prevent off-site migration of contaminated storm water or increased soil erosion. The plan must include the construction of appropriate design measures that allow surface and subsurface movement of water along drainage lines so	Refer to Section 8 of the EMPr.

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		as not to impede natural surface and subsurface flows. Drainage measures must promote the dissipation of storm water run-off.	
		xiv. A fire management plan to be implemented during the construction and operation of the facility.	Refer to Section 11 of the EMPr. It should be noted that this has been combined with an Environmental Awareness Plan.
		xv. An erosion management plan for monitoring and rehabilitating erosion events associated with the facility. Appropriate erosion mitigation must form part of this plan to prevent and reduce the risk of any potential erosion.	Refer to Section 9 of the EMPr.
		xvi. An effective monitoring system to detect any leakage or spillage of all hazardous substances during their transportation,	Refer to Section 10 of the EMPr.

<table>
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<tr><td></td><td>The EAP must provide detailed motivation if any of the above requirements is not required by the proposed development and not included in the EMPr.

The EAP must provide the final detailed Site Layout Plan as well as the final EMPr for approval with the final EIAr as this Department needs to make a decision on the EA, EMPr and Layout Plan.

Please ensure that all the relevant Listing Notice activities are applied for, that the Listing Notice activities applied for are specific and that they can be linked to the development activity or infrastructure in the project description.

<u>You are hereby reminded that should the EIAr fail to comply with the requirements of this acceptance letter, the project will be refused in accordance with Regulation 24(1)(b) of the EIA Regulations, 2014 as amended.</u>
The applicant is hereby reminded to comply with the requirements of Regulation 45 with regard to the time period allowed for complying with the requirements of the Regulations, and Regulations 43 and 44 with regard to the allowance of a comment period for interested and affected parties on all reports submitted to the competent authority for decision-making. The reports referred to are listed in Regulation 43(1).

Furthermore, it must be reiterated that, should an application for Environmental Authorisation be subject to the provisions of Chapter II, Section 38 of the National Heritage Resources Act, Act 25 of 1999, then this Department will not be able to make nor issue a decision in terms of your application for Environmental Authorisation pending a letter from the pertinent heritage authority categorically stating that the application fulfils the requirements of the relevant heritage resources authority as described in Chapter II, Section 38(8) of the National Heritage Resources Act, Act 25 of 1999. Comments from SAHRA and/or the provincial department of heritage must be provided in the EIAr.

You are requested to submit two (2) electronic copies (1 CD/DVD and 1 USB)</td><td>
<table>
<tr><td>handling, use and storage. This must include precautionary measures to limit the possibility of oil and other toxic liquids from entering the soil or storm water systems</td><td></td></tr>
<tr><td>xvii. Measures to protect hydrological features such as streams, rivers, pans, wetlands, dams and their catchments, and other environmental sensitive areas from construction impacts including the direct or indirect spillage of pollutants.</td><td>Measures to protect hydrological features such as streams, rivers, pans, wetlands, dams and their catchments have been included throughout the EMPr, such as Sections 8, 9 and 10.</td></tr>
</table>

All of the above requirements have been included in the EMPr.

A final detailed Site Layout Plan as well as the final EMPr will be provided with the final EIAr to DEA for decision-making.

All relevant listed activities are applied for. The activities are specific and can be linked to the development activity or infrastructure in the project description.</td></tr>
</table>

DATE OF COMMENT, FORMAT OF COMMENT, NAME OF ORGANISATION/I&AP	COMMENT	RESPONSE FROM EAP/APPLICANT/SPECIALIST
	and one (1) hard copy of the ElAr to the Department as per Regulation 23(1) of the EIA Regulations, 2014. Please also find attached information that must be used in the preparation of the ElAr. This will enable the Department to speedily review the ElAr and make a decision on the application. You are hereby reminded of Section 24F of the National Environmental Management Act, Act No 107 of 1998, as amended, which stipulates that no activity may commence prior to an Environmental Authorisation being granted by the Department. **Annexure 1**	The EIAr complies with the requirements of the acceptance letter of the FSR by DEA. The stipulated timeframes under the NEMA EIA Regulations, 2014, as amended will be complied with (Regulations 43, 44 and 45). Comments from SAHRA on the Draft EIAR will be included in the Final EIAR. The EIAr will be submitted in the formats requested by DEA. **Annexure 1**

DATE OF COMMENT, FORMAT OF COMMENT, NAME OF ORGANISATION/I&AP	COMMENT	RESPONSE FROM EAP/APPLICANT/SPECIALIST
	Format for the comments and responses trail.	The format has been adhered to (i.e. this table).
	A1. General Site information	A1. This can be found in Chapters 1-3 of the Draft EIAR.
	A2. Sample of technical details for the proposed facility	A2. This table is reflected in Chapter 1, Table 1.1. Further details on the project description can also be found in Chapter 2.
	A3. Site maps and GIS information	A3. A map package is being submitted to the Competent Authority together with the submission of this DEIAR in electronic format (CD) as per request xxxiii. All the listed map details have been included in the shapefiles and the maps (if applicable). The slope analysis is also included.
	A4. Regional map and GIS information	A4. Please see Chapter 1, 2 and 3 for regional locality maps inclusive of these requested aspects. In addition, the site layout maps and environmental sensitivity maps are also found in these chapters. The EMPr includes the final layout map superimposed (overlain) on the environmental sensitivity map. The map package mentioned above that is being submitted with this DEIAR is also inclusive of this information in the form of shapefiles and PDF maps.
	A5. Important Stakeholders	A5. Please see Appendix C for the I&AP database. Comments from the officials at the national Department of Agriculture, Forestry and Fisheries (DAFF) and Eskom will be obtained and submitted to DEA. The relevant officials indicated in the DEA letter of acceptance of the FSR will be contacted in this regard.
	B. Agriculture Study requirements	B. A Soils and Agricultural Potential Impact Assessment was conducted by Johan Lanz (Appendix M). The study

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		addresses the requirements listed in the DEA letter of acceptance of the FSR.
	C. Astronomy Geographic Advantage Act, 2007 (Act No. 21 of 2007)	C. The said Act is not relevant to this project as the study area does not fall within the ambit of the Square Kilometre Array - South Africa.

Table 4: Comments received following the release of the Draft EIA Report for the 30-day review period, together with the response from the EIA team

NO.	COMMENTS	COMMENTATOR	DATE & FORMAT	RESPONSE
1	COMMENTS ON THE DRAFT ENVIRONMENTAL IMPACT ASSESSMENT REPORT FOR THE PROPOSED 300MW KAP VLEY WIND ENERGY FACILITY AND ITS ASSOCIATED INFRASTRUCTURE NEAR KLEINZEE WITHIN THE NAMA KHOI LOCAL MUNICIPALITY IN THE NORTHERN CAPE PROVINCE The draft Environmental Impact Assessment report (EIAr) dated April 2018 and received by this Department on 12 April 2018 refers. This Department has the following comments on the above-mentioned application: i. Please ensure that all relevant listed activities are applied for, are specific and that it can be linked to the development activity or infrastructure as described in the project description. ii. If the activities applied for in the application form differ from those mentioned in the final EIA, an amended application form must be submitted. Please note that the Department's application form template has been amended and can be downloaded from the following link: https://www.environment.gov.za/ Documents/forms iii. Please ensure that all issues raised and comments received during the circulation of the draft EIA from registered I&APs and organs of state which have jurisdiction (including this Department's Biodiversity Section) in respect of the proposed activity are	Department Environmental Affairs REPUBLIC OF SOUTH AFRICA Private Bag X 447 PRETORIA 0001. Environment House 473 Arcadia, PRETORIA Tel: + 27 12 339 9372 DEA Reference: 14/12/161313/2/1046 Enquiries: Ms Thabite Sangweni Telephone: (012) 399 9409 E-mail: TSangweni@environment.gov.za	Letter dated 10/05/2018 sent via email and mail	(i) The relevant activities are specific and can be linked to the relevant development activity (see Table 4.1 in Section 4.1 in Chapter 4 for the table of listed activities). (ii) The listed activities applied for are correct. (iii) All comments received are included and responded to in this report. (iv) The final layout plan is included in this Updated Draft EIA Report (see Figure 3.28 in Section 3.4 of Chapter 3) as well as Appendix B of the EMPr. (v) Please see Figure 2.1 in Section 2.1 in Chapter 2 for numbered turbine layout as required. (vi) All hard copy and soft copy maps are clear as required. (vii) A collaborative process with surrounding developers is underway with meetings having been held in collaboration with Eskom to discuss connection options. Due to the commercial nature of these engagements they have been undertaken outside of this EIA consultation process. Comments received from surrounding developers

NO.	COMMENTS	COMMENTATOR	DATE & FORMAT	RESPONSE
	adequately addressed and included in the final EIA. Proof of correspondence with the various stakeholders must be included in the final EIAr. Should you be unable to obtain comments, proof should be submitted to the Department of the attempts that were made to obtain comments. The Public Participation Process must be conducted in terms of Regulation 39, 40 41, 42, 43 and 44 of the EIA Regulations 2014 as amended. iv. The preferred Layout Plan with the preferred substation, service routes, existing roads and new roads, and construction camp must be indicated in the final EIAr. A map combining the final Layout Plan superimposed (overlain) on the environmental sensitivity map must also be included in the final EIAr. v. The preferred Layout Plan must clearly indicate turbine position numbers. vi. Please ensure that all hardcopy and softcopy maps are clear and legible. Hardcopy maps must be at least A3 size. vii. Comments from all other developers surrounding the development must be obtained and included in the final EIA. viii. Recommendations provided by specialist reports must be considered and used to inform the preferred layout alternative. Specifically, turbines and associated services must be removed from all sensitive areas as recommended by the specialists.			as part of the EIA process have been addressed and responded to in the Comments and Responses Trail. (viii) Specialist inputs have been used to inform the final layout as presented in this report. All project infrastructure has been removed from no-go areas. (ix) All conditions contained in the Acceptance of the Final Scoping Report and the comment letter from DEA on the Draft EIA Report were adhere to. (x) These required documents are included in the EMPr (section B of this report). (xi) All mitigation recommendations are in line with applicable and most recent guidelines. (xii) The cumulative impacts of all relevant projects within a radius of 30 km have been considered and addressed by all specialists for cumulative impact assessments as required. (xiii) The technical details for the proposed facility are provided in Table 1.1 of Chapter 1. (xiv) All requirements of Appendix 3 of the EIA Regulations have been met (see Table 1.2 in Chapter 1). (xv) This report is submitted within the extended timeframes as has been granted in terms of Regulation 23 (1)(b) of the NEMA EIA Regulations, as

NO.	COMMENTS	COMMENTATOR	DATE & FORMAT	RESPONSE
	ix. Please note that the final ElAr must comply with **all conditions of the acceptance of the scoping report) signed on 12 February 2018**, and must address all comments contained in the final SR and this letter. x. The EMPr must include a provision to make the following reports available to the Department and applicable competent authority on request: alien/invasive plant management report; plant rescue and protection report; and re-vegetation and habitat rehabilitation report. xi. Please ensure that all mitigation recommendations are in line with applicable and most recent guidelines. xii. Should there be any other similar projects within a 30km radius of the proposed development site, the cumulative Impact assessment for all identified and assessed impacts must be refined to indicate the following: • Identified cumulative impacts must be clearly defined, and where possible the size of the identified impact must be quantified and indicated, i.e. hectares of cumulatively transformed land. • Detailed process flow and proof must be provided, to indicate how the specialist's recommendations, mitigation measures and conclusions from the various similar developments in the area were taken into			amended. The activity will not commence prior to Environmental Authorisation being granted by DEA.

NO.	COMMENTS	COMMENTATOR	DATE & FORMAT	RESPONSE
	consideration in the assessment of cumulative impacts and when the conclusion and mitigation measures were drafted for this project. • The cumulative impacts significance rating must also inform the need and mitigation measures were drafted for this project. The cumulative impacts significance rating must also inform the need and desirability of the proposed development. • A cumulative impact environmental statement on whether the proposed development must proceed. xiii. The ElAr must provide the technical details for the proposed facility in a table format, as well as their description and dimensions. A sample of the minimum information required is listed under point 2 of the EIA information required for wind energy facilities as requested in the acceptance of the SR. xiv. You are further reminded that the final ElAr to be submitted to this Department must comply with all the requirements in terms of the scope of assessment and content of the ElR in accordance with Appendix 3 of the EIA Regulations, 2014 as amended. xv. Further note that in terms of Regulation 45 of the EIA Regulations 2014 as amended, this application will lapse if the applicant fails to meet any of the time frames prescribed in terms of these Regulations, unless an extension has been granted			

NO.	COMMENTS	COMMENTATOR	DATE & FORMAT	RESPONSE
	in terms of Regulation 3(7). You are hereby reminded of Section 24F of the National Environmental Management Act, Act No 107 of 1998: as amended, that no activity may commence prior to an environmental authorisation being granted by the Department. Yours faithfully, Mr Sabelo Malaza.			
2	WWF South Africa ("WWF-SA") hereby confirms that it has reviewed the draft EIA report for the proposed development of the Kap Vley Wind Energy Facility near Kleinzee, Northern Cape of April 2018 with DEA Reference number 14/12/16/3/3/2/1046. In particular, WWF-SA has reviewed Appendix Q, the Ecological Offset Study Report, and has conducted a subsequent site visit to the affected area. Based on these, WWF South Africa hereby confirms that it has no objection to the contents of the EIA report, in particular Appendix Q and the approach proposed in Appendix Q. Further to the above, WWF-SA would like to disclose a possible conflict of interest in that it has been identified as a potential implementation partner for the biodiversity offset in terms of the proposed development. We would be happy to answer any further questions from the competent environmental authority in this regard.	World Wide Fund for Nature (WWF)	Letter dated 16 May 2018 sent via email	**Response from CSIR:** WWF's position of no objection to the project, in particular the Ecological Offset study (Appendix Q) is acknowledged.

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3	**Attention: Juwi Renewable Energies (Pty) Ltd** DRAFT ENVIRONMENTAL INPACT ASSSESSMENT (EIA) REPORT FOR THE PROPOSED DEVELOPMENT OF THE KAP VLEY WIND ENERGY FACILITY ON THE FARMS KAMAGGAS FARM 200 PORTION 5 RIE, KAAP VLEY FARM 315 RIE, KAAP VLEY FARM 315 PORTION 1 & PORTION 2 & PORTION 3, PLATVLEY FARM 314 PORTION 3, KOUROOTJlE FARM 316 RE, AND GRA'WATER FARM 331 RE, NEAR KLEINZEE, NORTHERN CAPE. The Department of Water & Sanitation (DWS) hereby acknowledges receipt of the Draft EIA Report for the proposed development of the Kap Vley Wind Energy Facility situated on the above mentioned farms near Kleinzee, Northern Cape. The Department takes note of the proposed activity and therefore provides the following comments: Please note that taking of water from a water resource needs to be authorized by this Department. All sewage, grey and wash water, as well as waste generated during the construction should be contained, collected and disposed of at a permitted or licensed facility. Any spillage of any hazardous materials including diesel that may occur during storage, excavation and operation must be reported immediately to this Department. Please note that no development should take place within the 1:100 year flood line.	Department of Water and Sanitation Private Bag X5912, Upington 8800 Tel: (054) 338-5800 Fax: (054) 334-0205 www.dwa.gov.za Enquiries: M. Ntoi Email NtoiM@dws.gov.za	Letter dated 23/05/2018 sent via email and mail	(1) The relevant applications for approval will be submitted to DWS as required. (2) All sewage, grey and wash water, as well as waste generated during the construction will be contained, collected and disposed of at a permitted or licensed facility. (3) Any spillage of hazardous materials will be reported immediately to DWS. (4) No development will take place within the 1:100 year flood line. (5) A Stormwater Management Plan is included in the EMPr (see Section 8 of the EMPr included in Part B of this report). (6) All relevant water uses will be applied for as required by DWS.

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	A Stormwater Management Plan should be put in place. Any other water use(s) as listed on page 7 of the draft EIA, subject to section 21 of the National Water Act 36 (1998), must be adhered to and authorized by this department. Please feel free to contact this Department, should there be any enquiries.			
4	juwi Renewable Energies (Pty) Ltd (hereinafter referred to as "juwi") proposes to construct and operate a 300 MW Wind Energy Facility (WEF) and associated electrical infrastructure (subject to a separate Basic Assessment Process), The proposed Kap Vley WEF will be constructed on the following land: Remainder (RE) Kommagas Farm 200 Portion 5, RE Kap Vley Farm 315, Portion 1 of Kap Vley Farm 315, Portion 2 of Kap Vley Farm 315, Portion 3 of Kap Vley Farm 315, Portion 3 of Platvley Farm 314, RE Kourootjie Farm 316 and RE Gra'water Farm 331. The CSIR was appointed by juwi Renewable Energies (Pty) Ltd to conduct a Scoping and Environmental Impact Assessment (S&EIA) Process in support of an Environmental Authorisation Application for the Proposed 300MW Kap Vley Wind Energy Facility, near Kleinzee, Northern Cape Province. A draft Scoping Report (DSR) has been completed in terms of the National Environmental Management Act, 1998 (NEMA) and the 2017 EIA Regulations. The proposed development will comprise the construction of 20-56 turbines, reinforced concrete foundations 20 m x 20 m, a	Natasha Higgitt (Heritage officer) & Phillip Hine (Acting Manager: Archaeology, Palaeontology and Meteorites Unit), SAHRA Tel: 021 462 4502 Email: nhiggitt@sahra.org.za CaseID: 11654	Letter dated 24 May 2018 sent via email	All requirements as stipulated in this submission have been included in the EMPr (including areas to be avoided, and preconstruction walk through as required by SAHRA). Impacts of roads have been minimised as far as technically feasible. All relevant heritage permits will be applied for prior to commencement of construction as required by SAHRA. SAHRA will be informed of any finds or proposed relocation of heritage features as required by SAHRA. A Heritage Management Plan (including a Chance Finds Procedure and Fossil Finds Procedure) is included in the EMPr (Section 13) and will be finalised and submitted to SAHRA for approval prior to construction. The Final EIA and EMPr will be submitted to SAHRA

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	crane platform 1.4 ha each, a collector substation, operations and maintenance buildings, site office, laydown area, on-site concrete batching plant, service roads, and a 132kv transmission line. ASHA Consulting (Pty) Ltd has been appointed to conduct the Heritage Component of the S&EIA process. Orton, J. 2017. Scoping Inputs from the Specialist: Heritage Impact Assessment. Scoping and Environmental Impact Assessment for the proposed Kap Vley Wind Energy Facility, Namakwaland Magisterial District, Northern Cape Province: Scoping Report. The Heritage Scoping Report identified a total of 28 heritage resources which includes surface scatters of Stone Age lithics and associated material, two burial grounds, historical structures and associated material, historical werf, stone walled features and foundations. Sites KAP2017/001, KAP2017/003, KAP2017/005, GRW2017/001, KAP2017/006, PAN2017/004, PAN2017/005, KAP2017/009 were rated as low medium significance sites, KAP2017/002 (the site contains an old bees nest), KAP2017/004, KAP2017/008 rated as medium significance sites, PAN2017/002 were rated as medium-low significance sites, and PAN2017/001 and PAN2017/003 were rated as highly significant sites. The cultural landscape of the proposed development area fragments, marine shell fragments and hammer stones, rated as sites of between low, low-medium and medium significance ratings, a historical farmhouse of medium-low significance with associated features of low significance, two stone foundations with associated historical artefacts			for record purposes. Should the project be granted Environmental Authorisation, SAHRA will be notified and all relevant documents submitted to the case file.

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	scatters if low-medium significance, surface scatters of historical artefacts of low significance, a stone farm boundary beacon of low significance and two graveyards of high significance. The cultural landscape of the proposed development area has an intangible heritage component i.e. The White Dunes as referenced by historical travelers and in historical maps, the "coloured reserve" in which traditional stock farming and the collection of medicinal plants occurred, and the reference to local San gathering the honey from the bees nests to make honey beer (presumably site KAP2017/002). The landscape and its link with traditional land uses will also be impacted and it will be necessary to ensure that only minimal loss of land takes place within the Kamaggas farm area. Importantly, however, the Nama Khoi municipality on behalf of the Komaggas community has agreed to a part of the proposed development occurring on their communal land, should it receive Environmental Authorisation. The only project alternatives available for assessment were the access roads. While neither will result in any impacts, Option 1, is slightly favored as Option 2 is located in close proximity to identified heritage resources. Recommendations provided in the report include the following: All significant archaeological sites identified must be protected from harm. Where necessary to effect this, sites should be cordoned off i.e. KAP2017/001, KAP2017/002, KAP2017/003, KAP2017/004, KAP2017/005, and			

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	GRW2017/001; The graveyards at PAN2017/001 (waypoint 1376) and PAN2017/003 (waypoint 1378) must be cordoned off as necessary, avoided and protected; The historical sites at PAN2017/002 (waypoint 1377), PAN2017/004 (waypoint 1399), PAN2017/005 (waypoint 1413) and KOM2017/001 (waypoint 1420) must be cordoned off if necessary, protected and Avoided; Roads must be designed in such a way as to minimise cut and fill operations in order to reduce landscape scarring; The final approved layout should be subjected to a pre-construction walk-down survey to identify any further sites that may require mitigation; If any archaeological material or human burials are uncovered during the course of development, then work in the immediate area should be halted. The find would need to be reported to the heritage authorities and may require inspection by an archaeologist. Such heritage is the property of the state and may require excavation and curation in an approved institution. Pether, J. 2017. Palaeontological Assessment: Desktop Study for the Proposed Kap Vley Wind Energy Facility, Namakwa District Municipality, Northern Cape Province. The proposed development area is located within the			

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	Springbok Formation which does not contain fossils. The ridges and superficial coversands deposits are of low fossil bone potential. Fossil bones from the activities of carnivores and scavengers may be present within the hills and channel lag deposits. The overall impact of the proposed development on palaeontological material is rated as low. It is recommended that a requirement to be alert for possible fossils and buried archaeological material be included in the Environmental Management Programme (EMPr) for the Construction Phases of the Kap Vley WEF, with a Fossil Finds Procedure in place. In the event of the exposure of fossil bones all work at that spot must cease and the Environmental Control Office (ECO) must inform SAHRA and a professional palaeontologist, who will then decide if avoidance or mitigation are preferred. Only a professional palaeontologist may excavate uncovered fossils with a valid mitigation permit from SAHRA. <u>Final Comment</u> The SAHRA Archaeology, Palaeontology and Meteorites (APM) Unit has no objections to the proposed development and supports the recommendations of the heritage specialists. The recommendations of the specialists and the following conditions must be included in the Final EMPr: A walk-down of the final layout must be conducted by a qualified archaeologist and the results of the walk-down must be submitted to SAHRA for review and comment. No construction may occur without comment from SAHRA on			

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	the walk-down report; Should it be necessary to mitigate the archaeological sites, a permit in terms of section 35 of the NHRA and Chapter II and III of the NHRA Regulations must be applied for prior to construction. No mitigation measures may be implemented without a permit issued by SAHRA for the specified work; Should it be necessary to mitigate any of the burial grounds, a consultation process as per section 36 of the NHRA and Chapter XI of the NHRA Regulations must be conducted prior to construction; If relocation of the graves if found to be feasible, a permit in terms of section 36 of the NHRA and Chapter IX of the NHRA Regulations must be applied for prior to construction. No relocation may occur without a permit issued by SAHRA for this expressed purpose; A Heritage Management Plan (HMP) must be developed and implemented as part of the EMPr for the in-situ management of all heritage resources located within the development boundary. This HMP must be submitted to SAHRA for review prior to construction; A Chance Finds Procedure and Fossil Finds Procedure must be developed and implemented as part of the EMPr. These procedures must be submitted to SAHRA for review and comment prior to construction; The Final EIA and EMPr must be submitted to SAHRA for record purposes.			

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	If any evidence of archaeological sites or remains (e.g. remnants of stone-made structures, indigenous ceramics, bones, stone artefacts, ostrich eggshell fragments, charcoal and ash concentrations), fossils or other categories of heritage resources are found during the proposed development, SAHRA APM Unit (Natasha Higgitt/Phillip Hine 021 462 5402) must be alerted. If unmarked human burials are uncovered, the SAHRA Burial Grounds and Graves (BGG) Unit (Thingahangwi Tshivhase/Mimi Seetelo 012 320 8490), must be alerted immediately. A professional archaeologist or palaeontologist, depending on the nature of the finds, must be contracted as soon as possible to inspect the findings. If the newly discovered heritage resources prove to be of archaeological or palaeontological significance, a Phase 2 rescue operation may be required subject to permits issued by SAHRA. Should the project be granted Environmental Authorisation, SAHRA must be notified and all relevant documents submitted to the case file. Should you have any further queries, please contact the designated official using the case number quoted above in the case header.			

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5	*5.1* There is insufficient detail of methodology in the specialist reports (specifically the ecological, botanical and to lesser extent the fauna! sections). E.g. it is predominantly referred to 'walk- throughs' but in the specialist report walk-through and surveys are mentioned, but no detail on what surveys entailed, or the extent of the surveys. This makes it challenging to assess the content provided i.t.o. representivity of the study/impacted area and if the opinions raised under limitations and confidence in data.	Department of Environment and Nature Conservation (DENC), Northern Cape Province	Letter dated 25 May 2018 received via email	**Response by Simon Todd:** The detail on the specific sampling approach for the flora has been included in the revised Ecology specialist study.
	5.2 Clear management guidelines must be in place and authorized i.t.o. mitigation process prior to development, during development, operational and decommissioning phases. A specialist who will be able to demarcate and mark no-go areas must be present throughout to ensure this mitigation is implemented correctly and within appropriate seasons (demarcation must occur in the wet season while construction must be in the dry season).			**Response by Simon Todd:** The specialist ecological study includes a variety of mitigation and avoidance measures to reduce the impacts of the development as far as possible. Additional mitigation to address this comment has been included in the suggested measures.
	5.3 The consultant who provided the Offset Report has no Biodiversity Offset experience or background in this field which necessitates that (a) the final Offset Report must be completed by another consultant with proven experience and expertise in offsets, OR (b) an accredited and recognized Offset specialist must signed off on the non-experienced offset consultant's report. This specialist in Offsets have to declare that he/she will take responsibility for any shortcomings and/ or inferiorities detected in the content of such offset report they sign-off on.			**Response by Simon Todd:** The Ecological Offset Study is ecological in nature and addresses the impacts associated with the Kap Vley development, the presence of suitable offset target areas in the wider area, a suggested offset ratio as well as details and amounts of offset target habitats. These are well within the qualifications and experience of the specialist. The Ecological Offset Study does not provide for operational implementation of the offset at this stage as under the REIPPP the project must still be selected as a preferred bidder before it can go ahead. Construction if it occurs is several years away and as such it is considered premature to detail and

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				enter into an actual offset at this stage. The conditions required to be met by an Offset Implementation Agreement are highlighted in the Offset Study and it is stipulated that such an agreement should form part of the RoD for the development. The offset study has further been peer-reviewed by Mark Botha a recognised biodiversity offset expert. Comments received have been included in the revised study. The basic recommendations of the study were supported and found to be soundly derived.
	5.4 It is requested that some of the environmental arguments used in the documentation (specialist reports) be critically assessed as several is poorly constructed i.t.o. why certain recommendations and assumptions are made.			**Response by Simon Todd:** It is not clear which assumptions or which specialist reports are being referred to. Very few assumptions have been made with regards to the ecological study as the site has been very thoroughly sampled and assessed in the field with the result that detailed information on the fauna and flora of the site is available.
	5.5. Specific focus on sustainability and resilience also lack - when you compare environmental and economic and social aspects towards suggesting which weighs more than the other. For example, if you use the doughnut model principles, how do these relate to each other and on what basis would you suggest an activity is sustainable and resilient to future environmental events.			**Response by Simon Todd:** Ecologically, the development has been assessed as having a moderate residual impact on fauna and flora and the loss of approximately 2% of the site to hard infrastructure is not likely to compromise the overall resilience of the system.
	5.6 One of the major information gaps relates to vegetation unit transformation. Most inferences are often based on Mucina and Rutherford 2006 data of transformation and protection statuses, however these are more than 1O years outdated! Accordingly, information gaps and confidence in some data must be revised and constructed in accordance.			**Response by Simon Todd:** These shortcomings are acknowledged in the report. However, transformation levels are also derived from the List of Threatened Ecosystems (2011) where relevant. Further details and analysis have been provided in the Ecological Offset study. That said, the dominant vegetation types at the site

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				are not vulnerable to transformation and the Klipkoppe Shrubland has not been significantly impacted by transformation since 2006. Namaqualand Strandveld is also an extensive vegetation type that has not been significantly impacted in the last 10 years, although some loss has occurred due to mining and other destructive activities.
	5.7 Further to the DENC references listed below and attached hereto, the following are points to be addressed additionally/emphasised: *5.7.1* One of the aspects that makes this specific area unique is that it coincides with the archeological Fynbos range of expansion and contraction. In this context the facilitation of the north-south corridor ecological and evolutionary functional role is important, but no reference or discussion was included in the provided documentation.			**Response by Simon Todd:** Additional comment and analysis of this role has been included in the revised report.
	5.7.2 The second ecological facilitative corridor route links west-east, which (in addition to the north-south) is aimed at facilitating natural mitigation for climate change.			**Response by Simon Todd:** Additional comment and analysis of this role has been included in the revised report.
	5.7.3 In context of both (a) and (b) the Offset discussions should reflect how the development might have an impact, and how the offset area of choice also address these.			**Response by Simon Todd:** It is premature to select a specific offset target property at this point. But the landscape linkage and process orientated requirements of the offset have been included and highlighted in the revised Ecological Offset study.
	5.7.4 Spatial extent to consider include local, district, regional, landscape and national. Ecological function and mitigation must take all of these into consideration, and where applicable the scale not applicable must be justified. The same principle i.t.o. temporal scale.			**Response by Simon Todd:** As above, greater attention to spatial and temporal processes has been included in the revised Ecological Offset study.

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	5.7.5 The writer disagree with the suggestion that rehabilitation will take 5 years and consequently that the total temporal impact period is around 30 years. What is regarded as rehabilitation under the proposed 5 years?			**Response by Simon Todd:** Criteria to be met have been added to the report. The report stipulated that monitoring should take place for at least 5 years. This is considered adequate provided that the rehabilitation benchmarks have been attained. Greater detail has been added to the report to clarify.
	5.7.6 The short- medium- and long-term impacts of renewable energy developments within South Africa and specifically along our west·coast is uncertain/unknown. Monitoring must form part of the EMPr and must occur during all three phases of this development (construction, operation, decommissioning). The data must be databased and analysed by an appropriate and accredited person/institute to ensure that more knowledge is obtained to better guide future developments of similar nature.			**Response by Simon Todd:** Post-construction avifaunal and bat monitoring is a requirement of wind energy facilities, but there is currently no formal requirement to monitor terrestrial ecosystems. However, as part of the EMPr for the development, it will require various management plans which should make provision for monitoring of the site to ensure that environmental degradation is avoided.
	5.7.7 Insufficient justification is reflected towards the ratio of offset and no indication of ratio of specific habitats, vegetation unit and species are reflected. E.g. if only 5% of the local species of conservation concern is going to be impacted, how would this impact on the conservation status on a provincial and national level. The 5% of a population with a size of 50 plant is significantly higher than 5% of a species with a population of 5 000. Similar principle i.t.o. habitats and vegetation units. Nine plant species of conservation concern (Red Data Listed) are listed for the site in the report. There are however potential additional species such as *Nemesia saccata* which is on the SANBI GIS shapefile list of Red Data species for the site, or nearby.			**Response by Simon Todd:** These details have been added to the revised Ecological Offset study. Specifically with regards *Nemesia saccata*, the consultant is familiar with this species having encountered it frequently in the Hondeklip Bay area. But it was not observed at the current site, which is not to say that it is not present, but rather that it is not likely to be common at the site and may have been grazed by livestock. In addition, this species is usually found on deep red sands and is most likely to occur in low-lying parts of the site where the footprint is low. A preconstruction walk-through of the development footprint would further clarify the presence of species of concern

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				within the footprint and suggest further measures to mitigate impact on such species such as translocation or seed banking.
	5.7.8 Specification is needed of how much of what exactly needs to be offset. The sensitivity and fine scale (Figure 1) maps will assist in this regard. The uniqueness of the site is also attributed to the closed proximity between very different habitats, with deep sand habitat bordering directly against rocky terrain. I postulate that this would likely result in high beta diversity across the diverse terrain. It is uncertain if this feature would repeat itself in the area of extent of Namaqualand Sand Fynbos vegetation unit.			**Response by Simon Todd:** This detail has been included in the revised Ecological Offset study.
	5.7.9 The habitat diversity of the landscape applies to both flora and fauna diversity patterns and can be translated to edaphic and terrain diversity. This is a key environmental feature also used for climate change mitigation /facilitation planning and should be incorporated/considered accordingly.			**Response by Simon Todd:** This detail has been included in the revised Ecological Offset study.
	5.7.10 The diversity of reptiles have been documented and should be considered. The 2014 Reptile Atlas and Red List shows that of the 1888 grid cells in RSA (93.2% of RSA with data), the study area grid cell falls into the highest category of number of reptile taxa per Quarter Degree Grid Cell (38-80 species), which is the top 9.73% of grid cells with data records. The study area also falls within the top category for number of endemic reptile taxa (12-24), which is the top 6.17% of grid cells with data. The occurrence of reptiles of conservation concern is however very low (weighted score of less than 1).			**Response by Simon Todd:** This is noted and the reptile abundance at the site further analysed. The diversity of the area appears to be generated by the variety of different habitats available and the contrast in their nature (i.e. rocky vs sandy, sandy vs compacted etc.). The total diversity *within* most habitats is low apart from the rocky hills which are identified in the report as being of specific significance for reptiles. This is a contributing to fact to the delineation of some of the no-go areas which include the rock hills. A requirement for the offset area to include an extent of rocky hills habitat has been included in

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				the revised Ecological Offset study.
	5.7.11. From the description in the report important indicators for offset properties would be the presence of Sand Fynbos, Restio Fynbos and Dune Fynbos, as well as the presence of indicator species of conservation concern (extent and ratio of each to form part of the offset still lacks). This assemblage does not occur north of the Spoegrivier where a mosaic of Namaqualand Strandveld and Sandstone Fynbos occurs (although this can be investigated in more detail through field work). Proposed possible suitable offset sites occur approximately 50 km south of the sites, inland of Hondeklip Bay, but this requires further investigation. The closest similar habitat to the study area is the Sandstone Fynbos assemblages between the Spoeg and Groen Rivers, inland of Namaqua National Park (Figure 2 and Figure 3). The offset localities adjacent to Namaqua National Park are of more strategic value, as they could be incorporated into an existing protected area network. The report does not provide recommendations on any specific properties as potential biodiversity offsets for the development with the need for field verification of suitability being required. Potential biodiversity offset options can be gauged from Figure 2 and Figure 3 where vegetation unit and farm sizes are indicated.			**Response by Simon Todd:** Additional details on this have been included in the revised Ecological Offset study, which now demonstrates the distribution and availability of the target habitats.
	5.7.12. The proposed development have a footprint of 128 ha, and with the 1:20 offset principle a preliminary offset of 2 560 ha is required.			**Response by Simon Todd:** An offset target of 1 580 has been calculated. This is based on a 1:20 ratio in the less sensitive parts of the site and a 1:30 ratio in the more sensitive areas.
	To conclude, the development is expected to have a high impact on ecosystem function and specialized/unique habitats and thus the consequent impacts species (spatial			**Response by Simon Todd:** A specialist statement which includes details on the requirements of the offset and the additional

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	and temporal scales). Should DEA assess the EIA and EMPr and feel authorisation can be granted, the Offset must be a condition within the EA and details of what must be offset must be specific. Timeframes (including legally binding contract agreement) and responsibilities must be provided as well to ensure that the Offset process is done in a legal and appropriate manner and that each party to the offset know their roles and responsibilities towards securing the offset and its management. No authorisation can be considered without an Offset agreement in place.			measures to be complied with in regards to the offset has been included in the revised Ecological Offset study. DEA can use this information to inform their own Environmental Authorisation for the development, should they approve it and stipulate the requirements to ensure that the offset is met before construction commences.
	In principal, offset(s) adjacent to the Namaqualand National Park can be supported as long as SANParks is willing to accept the properties and if the offset area(s) is appropriate ('like-for-like' preferably, while alternatives can only be considered during robust discussions with strong motivation as to why the deviation from like-for-like must be deviated from). Please feel free to contact our department should you need any further information and or clarity.			**Response by Simon Todd:** Details on this and other options for the offset have been included in the revised Ecological Offset study.
6	The proposed development falls within the Buffer Zone of Namaqua National Park (NNP) which include critical priority natural areas, as wells as the view shed protected zone. In addition, the proposed development also impinges upon the planned park expansion footprint. In particular, SANParks notes that the proposed development falls within a CBA and NCPAES Areas. Furthermore, a number of plant species of conservation concern are confirmed present at the site. SANParks is concerned about potential negative impacts on the integrity of NNP and surrounding area. SANParks takes note of the ecological offset study. SANParks reserves the right to revise initial comments based on additional	South African National Parks Park Planning & Development South African National Parks PO Box 76693 Port Elizabeth Email: mknight@nmmu.ac.za Tel: 041 508 5411	Letter dated 2018/05/2516 received via email on 25 May 2018	**Response by Simon Todd:** The issues regarding impacts on CBAs and NC-PAES areas are addressed in the revised Ecological Offset study. The impact on plant species of concern is less than 2% of the local population and as such would not compromise the local or regional population of these species. It should however also be noted that the NC-PAES includes a very large area that could never be fully attained for protected area expansion. As such the map must be seen as representing various options for expansion and not the final desirable park

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	information that may be received.			boundaries. Furthermore, both the site and the wider NC-PAES include significant areas of communal ground which would be very difficult to transfer to formal protectionist-style conservation. The wind farm is well in-line with the working landscapes concept that must be associated with communally-owned landscapes. It would be very difficult to provide a reasoned scenario in which the development compromises the ecological integrity of the NNP in any way. Visual impact is not equivalent to ecological impact and while this may impact on sense of place for visitors to the park, the fauna and flora of the park are sufficiently distant from the park to be fully buffered from significant impact. Further with respect to visual impact, it is important to note that the project falls within a gazetted Renewable Energy Development Zone (REDZ).
7	*7.1*. The report does lack the required detail in the specialist reports. I question when the assessments were done, as this area ideally needs to be looked at twice in the year, winter and spring. The no-go or highly sensitive areas seem rather small given our knowledge of the area.	South African National Parks Park Planning & Development South African National Parks PO Box 76693 Port Elizabeth Email: mknight@nmmu.ac.za	Letter dated 11 June 2018 received via email	**Response by Simon Todd:** This detail is contained in the specialist report. The sampling periods includes the winter, spring and early summer periods when all faunal and flora activity is at its maximum. The sensitivity mapping is based on detailed, fine-scale feature and SCC population mapping at the site and this is highly reliable and fully ground-truthed.

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	7.2. The Mucina & Rutherford 2006 vegetation map of SA – is useful to give background but for this type of proposed impact assessment, proper field work should be done. The scale of the map (1:1 000 000) is totally inadequate for an assessment of this size. Working at a scale of 1:30 000 or at the most 1: 50 000 would be more appropriate.	Tel: 041 508 5411		**Response by Simon Todd:** The limitations of this map are fully acknowledged in the specialist study and only provide the broadest context. Several subsequent levels of more detailed mapping are included in the specialist study. It appears that the respondent has only read those parts of the specialist study contained within the main EIA report and has not consulted the specialist study itself. Highly detailed and fully ground-truthed maps at the appropriate scale for assessment and avoidance are included in the specialist study.
	7.3. The offset study appeared to lack credibility. Support of an accredited offset specialist would have helped with the output and recommendations. Taking appropriate cognisance of the north-south, and well as the east-west corridors would have assisted in recommending appropriate offsets as would justification for the offset ratios for species of conservation concern.			**Response by Simon Todd:** The Ecological Offset Study is ecological in nature and addresses the impacts associated with the Kap Vley development, the presence of suitable offset target areas in the wider area, a suggested offset ratio as well as details and amounts of offset target habitats. These are well within the qualifications and experience of the specialist. The Offset Study does not provide for operational implementation of the offset at this stage as under the REIPPP the project must still be selected as a preferred bidder before it can go ahead. Construction, if it occurs, is several years away and as such it is considered premature to detail and enter into an actual offset at this stage. The conditions required to be met by an Offset Implementation Agreement are highlighted in the Ecological Offset Study and it is stipulated that such an agreement should form part of the Environmental Authorisation for the development. The offset study has further been peer-reviewed by Mark Botha, a recognised

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				biodiversity offset expert. Comments received have been included in the revised study. The basic recommendations of the study were supported and found to be soundly derived.
	7.4. The five years rehabilitation time for this arid landscape is unrealistic.			**Response by Simon Todd:** Criteria to be met have been added to the report. The report stipulated that monitoring should take place for **at least** 5 years. This is considered adequate provided that the rehabilitation benchmarks have been attained. Greater detail has been added to the report to clarify.
	7.5. The proposed development falls within the Buffer Zone of Namaqua National Park (NNP) which include critical priority natural areas, as wells as the view shed protected zone. In addition, the proposed development also impinges upon the planned park expansion footprint. In particular, SANParks notes that the proposed development falls within a CBA and NCPAES Areas.			**Response by Simon Todd:** These issues are addressed in the revised offset study. It should however be noted that the NC-PAES includes a very large area that could never be fully attained for protected area expansion. As such the map must be seen as representing various options for expansion and not the final desirable park boundaries. Furthermore, both the site and the wider NC-PAES include significant areas of communal ground which would be very difficult to transfer to formal protectionist-style conservation. The wind farm is well in-line with the working landscapes concept that must be associated with communally-owned landscapes.

NO.	COMMENTS	COMMENTATOR	DATE & FORMAT	RESPONSE
	7.6. SANParks is concerned about potential negative impacts on the integrity of NNP and surrounding area. Although this wind farm is far from our boundary the turbines will be visible form certain places in the park and will impact on the remote and open sense of place. Each turbine will have a red light on the top for aircraft and this will also be visible from a distance at night, potentially spoiling the view from the park now and into the future should we develop tourism products closer to Kommagas. SANParks reserves the right to revise initial comments based on additional information that may be received.			**Response by Simon Todd:** It would be very difficult to provide a reasoned scenario in which the development compromises the ecological integrity of the NNP in any way. Visual impact is not equivalent to ecological impact and while this may impact on sense of place for visitors to the park, the fauna and flora of the park are sufficiently distant from the park to be fully buffered from significant impact.

Scoping and Environmental Impact Assessment for the proposed Kap Vley Wind Energy Facility near Kleinzee in the Northern Cape

UPDATED DRAFT ENVIRONMENTAL IMPACT ASSESSMENT REPORT

PART B:

Environmental Management Programme (EMPr)

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1. INTRODUCTION

This Environmental Management Programme (EMPr) has been prepared as part of the requirements of the National Environmental Management Act (Act 107 of 1998, as amended) (NEMA) and the 2014 amended Environmental Impact Assessment (EIA) Regulations promulgated in Government Gazette 40772 and Government Notice (GN) R326, R327, R325 and R325 on 7 April 2017. This EMPr is being submitted to the National Department of Environmental Affairs (DEA) as part of the Application for Environmental Authorisation (EA) for the proposed construction of the Kap Vley Wind Energy Facility (WEF) and associated electrical infrastructure 30 km south east of Kleinzee in the Northern Cape within the Nama Khoi Local Municipality, Northern Cape Province (Figure 1). The proposed project is referred to as Kap Vley WEF and has been assigned the following DEA Reference Number: 14/12/16/3/3/2/1046. The Project Applicant for this proposed Kap Vley WEF is Kap Vley Wind Farm (Pty) Ltd, a subsidiary of juwi Renewable Energies (PTY) Ltd (hereinafter referred to as juwi).

The proposed Kap Vley WEF will be developed on the following land portions:

- Remainder (RE) Kamaggas Farm 200 Portion 5;
- RE Kap Vley Farm 315;
- Portion 1 of Kap Vley Farm 315;
- Portion 2 of Kap Vley Farm 315,
- Portion 3 of Kap Vley Farm 315;
- Portion 3 of Platvley Farm 314;
- RE Kourootjie Farm 316; and
- RE Gra'water Farm 331

This EMPr is being made available to Interested and Affected Parties (I&APs), stakeholders and Organs of State, as part of the Updated Draft EIA Report, for a 30-day review period. Comments received from stakeholders during this aforementioned review period will be incorporated into the EMPr, where applicable. Following the incorporation of comments from I&APs, stakeholders and Organs of State, this EMPr is intended as a "living" document and should continue to be updated regularly, as needed.

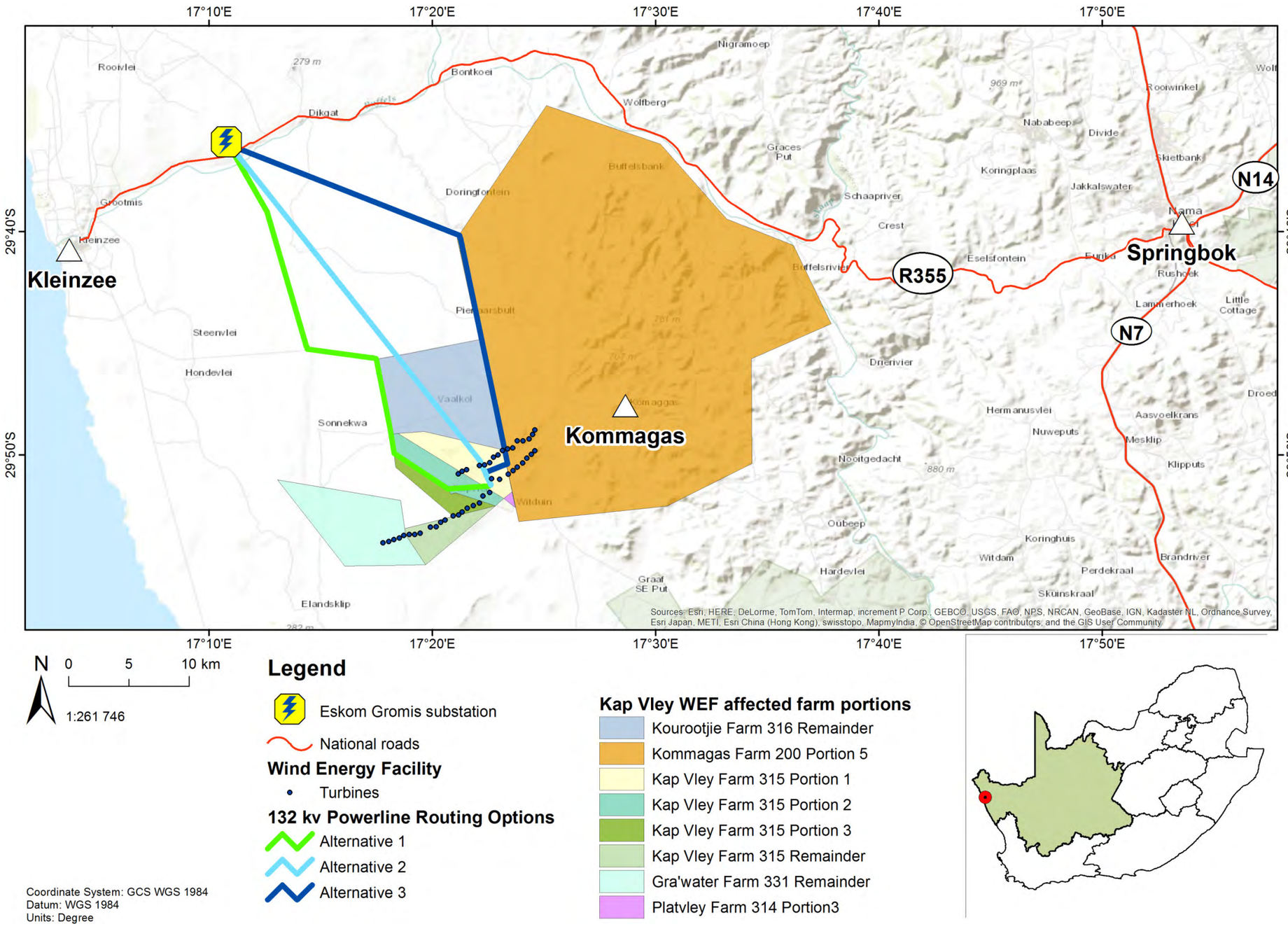


Figure 1: Locality map for the proposed Kap Vley WEF near Kleinzee in the Northern Cape.

1.1 PROJECT DESCRIPTION

The proposed project size is 50-300 MW. Once commercial operation date is achieved, the proposed facility will generate electricity for a minimum period of 20 years. The properties on which the Kap Vley is to be constructed will be leased by the project owner from the property owners for the life span of the project. It is proposed that the proponent will implement the Self-Build Option for the additional electrical infrastructure to be constructed [which was assessed separately as part of a Basic Assessment (BA) Process]. Following the construction phase, the proposed transmission line will be transferred into the ownership of Eskom.

The Kap Vley WEF will consist of the following components:

- ***Wind turbines:***

  - Number of 20-45 turbines;
  - Hub height of 80 - 150 m and rotor diameter of 100 - 160 m;
  - Reinforced concrete foundation: 25 m x 25 m;
  - Crane platform: 1 ha at each turbine; and
  - Turbine capacity: To be confirmed.

- ***Collector substation:***

  22/33 kV to 132 kV collector substation of approximately 2.3 ha to receive, convert and step up electricity from the WEF to the 132 kV grid suitable supply. The facility will house control rooms and grid control yards for both, Eskom and the IPP.

- ***Operations and Maintenance building:***

  - Operations and Maintenance (O&M) building of approximately 1 ha. This building will comprise the following:
    - Parking area, reception area, offices, guest accommodation and ablution facilities for operational staff, security and visitors;
    - Workshops, storage areas for materials and spare parts;
    - Water storage tanks or lined ponds;
    - Septic tanks and sewer lines to service ablution facilities;
    - Central waste collection and storage area; and
    - The buildings and other infrastructure, including a communication tower, will be less than 32 m high.

- ***Construction site office area and laydown area (used during construction and rehabilitated thereafter):***

  - Site offices, construction camp area, and lay down areas: 13 ha, consisting of several areas along internal roads and centrally located; and
  - On-site concrete batching plant: 0.25 ha.

- ***Access road:***

  - The proposed development site may be accessed via the R355 from Springbok, the Komaggas gravel road off the R355 or a combination of gravel roads from Garies via Hondeklip Bay and Koingnaas.

- ***Service roads:***
  - 37 km of internal road linking turbine locations. The road will be 5 m in width and 15 m in some sections to allow for passing, curvature and the physical footprint due to cut and fill requirements. Turning areas are also included.

- ***Other infrastructure:***

  - Fencing of 5 m high around the O&M building and the on-site substation;
  - Cabling between turbines to be laid underground where practical, which will connect to an on-site substation; and
  - Stormwater channels and culverts.

The proposed Kap Vley WEF will connect to the Gromis Substation located on the remainder of the Farm Dikgat 195 or closer to the new Eskom substation for which the location still needs to be determined via a 132 kV overhead transmission line.

Depending on the location of the substation on-site, a maximum of 40 km will be accommodated for the length of the proposed overhead line, connecting the on-site substation to the Gromis Substation or the new Eskom substation for which the location still needs to be determined.

The proposed project can be divided into the following three main phases:

- Construction Phase;
- Operational Phase; and
- Decommissioning Phase.

Activities will be undertaken during each phase which may cause an environmental impact. These activities have therefore been considered by the appointed specialists, and considered during the EIA and management and mitigation measures required to address all the impacts included within this EMPr.

The main activities that are proposed to take place during the construction phase will entail the removal of vegetation within the footprint of the infrastructure that will be constructed (including but not limited to the turbines, laydown areas, internal access roads and building structures). The temporary laydown area will then be constructed to enable the storage of construction equipment and machinery and will include the establishment of the construction site camp (including site offices and other temporary facilities for the appointed contractors). The wind turbine foundations will then be constructed at each turbine location. As noted above, each turbine will be supported by a concrete foundation of approximately 625 m^2, with the aid of a mechanical excavator.

Thereafter, the on-site substation, including the substation building will be constructed. The construction of the substation building will entail construction of the foundations and building structure as well as the installation of electrical infrastructure (such as transformers, conductors, etc.). The construction phase will also involve the transportation of personnel, construction material and equipment to and from the site. Subsequently, the trenches will be excavated at a depth of approximately 1.5 m, between each wind

turbine, for the laying of the cables to facilitate the connection of the wind turbines to the on-site substation.

The following activities will occur during the operational phase:

- Operation of the WEF and generation of electricity to add to the national grid;
- Routine Maintenance of the WEF; and
- Unscheduled Maintenance of the WEF.

The operational lifespan of the proposed Kap Vley WEF is expected to be approximately 20 years. Wind turbines will be operational for this entire period except under circumstances of mechanical breakdown, extreme weather conditions and/or maintenance activities. Wind turbines will be subject to regular maintenance and inspection (i.e. routine servicing) to ensure the continued optimal functioning of the turbine components. It is expected that the WEF will operate throughout the day and night. During the operational phase, most of the WEF project area will continue its current agricultural use. The only development related activities on-site will be routine servicing and unscheduled maintenance. Approximately 35 employment opportunities (skilled and unskilled) will be created during the operational phase of the project.

Should it be decided not to extend the operational lifespan of the project beyond 20 years, the project will be decommissioned. The main aim of decommissioning is to return the land to its original, pre-construction condition. Decommissioning involves removing the wind turbines and associated infrastructure, and covering the concrete turbine foundations with soil to a depth sufficient for the re-growth of natural vegetation. Any supporting infrastructure no longer in use will be removed from the site and either disposed of at a registered disposal facility or recycled if possible.

1.2 ENVIRONMENTAL SENSITIVITY AND PROJECT LAYOUT

The preferred site extends approximately 75 572 ha, while only approximately 128 ha will be required for the proposed development of the Kap Vley WEF, accounting for 0.17 % of the total area of the farm. All high resource areas along the ridges of the relevant properties, as well as potential locations for all supporting infrastructure were assessed by the specialists. The footprint was subsequently significantly reduced through detailed technical planning to avoid environmentally sensitive areas as much as possible, while still retaining a technically and financially viable layout. Based on the findings of the specialist studies, an environmental sensitivity map was compiled (Figure 2). This map shows the sensitivities on site [terrestrial (including birds and bats) and freshwater, ecology, as well as sensitive heritage features] within the Kap Vley WEF site that were assessed.

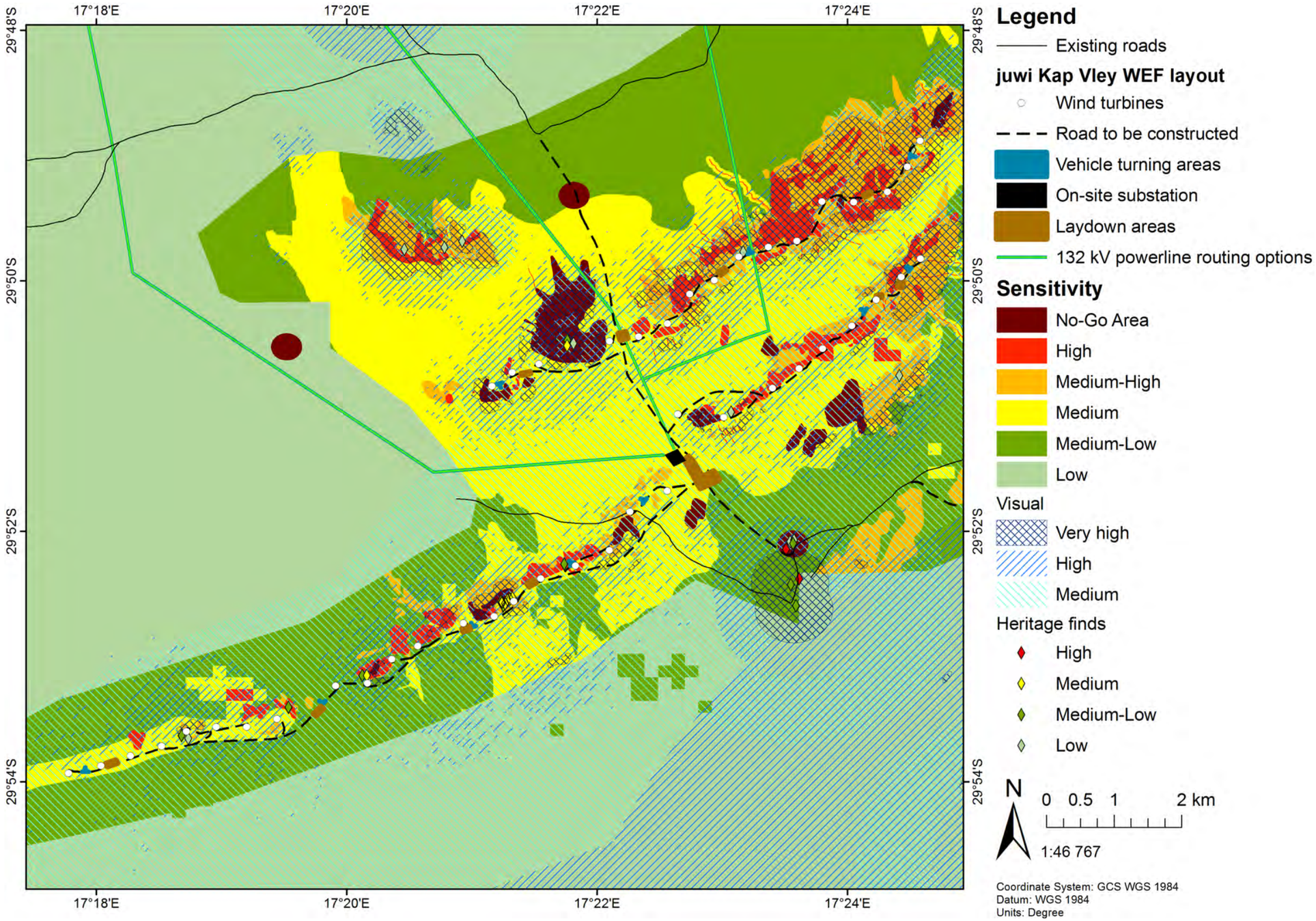


Figure 2: The environmental sensitivities on site overlain with the Development Envelope and site layout of the proposed Kap Vley WEF

1.3 AUTHORS OF THE EMPr

This EMPr has been compiled by the Environmental Assessment Practitioner (EAP) and the various specialists on the team (as indicated in Table 1). The details and expertise of the EAP and the specialists are provided in Appendix A of the EIA Report. The expertise of the EAP who compiled the report is provided below:

Minnelise Levendal, Pri. Sci. Nat. registered, 117078 (EAP): Minnelise is a Senior EAP in the EMS group of the CSIR and has a Master's degree in Botany. She has 15 years of experience in Environmental Management (which includes nine years working as an EAP). Before she joined the CSIR she was employed at the Western Cape Department of Environmental Affairs and Development Planning (DEA&DP) where she assessed EIAs, BAs and EMPs. Minnelise is currently managing various EIAs for wind and solar renewable energy projects in South Africa. Minnelise was the CSIR project manager for the 100 MW Ubuntu WEF near Jeffrey's Bay (Environmental Authorisation granted in June 2012), as well as the 50 MW Banna Ba Pifhu WEF proposed by WKN Wind current near Humansdorp in the Eastern Cape (Environmental Authorisation granted in July 2014). She was the project manager of ten BAs for wind monitoring masts in South Africa as part of the National Wind Atlas Project of the Department of Energy. Environmental Authorisation from the national Department of Environmental Affairs for all the ten masts was obtained in 2010. She was also the Project Leader for seven Solar Photovoltaic facilities near Kenhardt in the Northern Cape in 2016 for Mulilo Renewable Project Developments. Minnelise is the Project Manager of the Special Needs and Skills Development Programme of DEA which provides *pro bono* environmental assessments (BAs) to applicants with special needs (i.e. financial constraints).

Table 1: The EIA Team

NAME	ORGANISATION	ROLE/STUDY TO BE UNDERTAKEN
Environmental Management Services (CSIR)		
Paul Lochner	CSIR	Technical Advisor and Quality Assurance (EAPSA) Certified
Minnelise Levendal	CSIR	EAP (*Pr. Sci. Nat.)*
Specialists		
Simon Todd	Simon Todd Consulting	Ecology Impact Assessment (Terrestrial Ecology including fauna and flora); Biodiversity Offset study
Mark Botha	Conservation Strategy Tactics and Insight	Review of the Ecological Offset Study
Bernard Oberholzer and Quinton Lawson	Bernard Oberholzer Landscape Architect and BOLA	Visual Impact Assessment
Luanita Snyman van der Walt *External Reviewer:* Dr Liz Day	CSIR *External Reviewer:* Freshwater Consulting	Dry and Ephemeral Watercourses Impact Assessment
Dr. Jayson Orton	ASHA Consulting (Pty) Ltd	Heritage Impact Assessment (Archaeology and Cultural Landscape)
John Pether	Private, sub-contracted by ASHA Consulting (Pty) Ltd	Desktop Palaeontological Impact Assessment
Andrew Pearson and	ARCUS	Bird Impact Assessment

NAME	ORGANISATION	ROLE/STUDY TO BE UNDERTAKEN
Anja Albertyn		
Jonathan Aronson		Bat Impact Assessment
Johann Lanz	Private	Soils and Agricultural Potential Assessment
Surina Laurie *External Reviewer:* Elana Broughton	CSIR *External Reviewer:* Urban-Econ Development Economists	Socio-Economic Impact Assessment
Morné de Jager	Enviro-Acoustic Research	Noise Impact Assessment
Christo Bredenhann	WSP Group Africa (Pty) Ltd	Transportation Impact Assessment

An Ecological Offset Study was commissioned by the proponent to determine the impact of the proposed project on sensitive vegetation of the site. It is noted that the site is of high biodiversity significance and falls within a CBA 1 and 2. An Ecological Offset study has been undertaken by Simon Todd Consulting and is included in Appendix Q. This study has been updated following inputs from the Scoping and EIA phase (undertaken to date) and following discussions and agreements between the different parties involved. The revised Ecological Offset study was externally reviewed by a biodiversity offset expert, Mark Botha (see review included in Annexure 1 of Appendix Q). Comments received from Mark Botha have been included in the revised Ecological Offset study. The basic recommendations of the study were supported by the reviewer and found to be soundly derived.

As such, the development, with the implementation of an offset, is considered to have acceptable terrestrial ecological impacts and is therefore supported from a terrestrial ecological point of view. In order to ensure that the offset is located within appropriate offset receiving areas, the developer has engaged WWF-SA to facilitate the land purchase. As WWF-SA has an active land purchase programme in Namaqualand which works in collaboration with SANParks and DENC, this will ensure that the offset is located within identified target areas. The land would be purchased by WWF-SA on behalf of the client and management would be transferred to SANParks.

A Wake Effect study was conducted as requested by DEA in their comment letter on the Draft Scoping Report. juwi appointed DNV GL South Africa (Pty) Ltd (“DNV GL”) to qualitatively evaluate the potential wake impact of the Kap Vley wind farm on a proposed relatively nearby wind farm undergoing development by Eskom ("Eskom Project"). The full Wake Effect statement and the implications of this proposed project for this is attached as Appendix R.

The Eskom Project is located 16 km northwest of the closest proposed Kap Vley wind turbine at a bearing of approximately 300 degrees. It is noted that 31 of the 45 proposed Kap Vley wind turbines are 20 km or further from the closest outer boundary of the Eskom Project. DNV GL typically does not consider neighbouring wind farms that are in excess of 20 km away in the evaluation of external wake impact, as the wake impact tends to be negligible and the magnitude of the wake impact predicted by the models at this distance from the wind farm has a higher degree of uncertainty associated with it. Based on the location of the proposed wind farms, the wind rose and the distance of the projects from one another, DNV GL believes that wake impact of the Kap Vley wind farm on the neighbouring wind farm to be negligible.

These two studies, i.e. the Ecological Offset Study and the Wake Effect Study are not standard specialist studies in terms of Appendix 6 of the EIA Regulations, but rather detailed technical studies.

1.4 IMPACTS IDENTIFIED DURING THE EIA PROCESS

Based on the specialist studies, the following main direct potential impacts, as indicated in Table 2, have been identified and appropriate management and mitigation measures included within the EMPr (where required) as per the recommendations made in the specialist studies to ensure the potential impacts are suitably addressed and managed during all phases of the project.

It should be noted that other impacts for which specialist studies were not undertaken but where mitigation or management actions may be required, are also included in the EMPr.

Table 2: Key Impacts identified during the EIA process

KEY IMPACT	IMPACTS IDENTIFIED
Terrestrial Ecology (fauna and flora),	**Construction Phase:** ▪ Impact on vegetation and plant SCC; and ▪ Direct and indirect impacts on fauna. **Operational Phase:** ▪ Increased soil erosion; ▪ Increased alien plant invasion; ▪ Impacts on fauna; and ▪ Impacts on CBAs. **Decommissioning Phase:** ▪ Increased alien plant invasion; ▪ Increased soil erosion; and ▪ Direct and indirect impacts on fauna.
Birds	**Construction Phase:** ▪ Habitat destruction; ▪ Habitat loss through perceived increased predation risks (displacement); and reduced breeding success. **Operational Phase:** ▪ Bird mortality due to collisions with operational wind turbines; ▪ Habitat loss through perceived increased predation risk (displacement); and ▪ Disruption of local bird movement patterns. **Decommissioning Phase:** ▪ Habitat loss through perceived increased predation risk (displacement); and ▪ Reduced breeding success.
Bats	**Construction Phase:** ▪ Roost disturbance; ▪ Roost destruction; and ▪ Habitat modification. **Operational Phase:** ▪ Bat mortality during commuting and/or foraging and during migration by colliding with the operational wind turbines and/or due to barotrauma; ▪ Habitat creation in high risk locations leading to bat mortality; and ▪ Displacement and reduced foraging opportunities for bats due to light pollution.

KEY IMPACT	IMPACTS IDENTIFIED
	Decommissioning Phase: ▪ Roost disturbance.
Dry and Ephemeral Watercourses	**Construction Phase:** ▪ Physical disturbance and destruction of dry and ephemeral watercourses (incl. drainage lines); and ▪ Altered drainage patterns, increased runoff, erosion and sedimentation of surrounding ecosystems. **Operational Phase:** ▪ Altered drainage patterns, increased runoff, erosion and sedimentation of surrounding ecosystems **Decommissioning Phase:** ▪ Physical disturbance and destruction of dry and ephemeral watercourses (incl. drainag lines); and ▪ Altered drainage patterns, increased runoff, erosion and sedimentation of surroundin ecosystems.
Visual	**Construction Phase:** ▪ Potential visual intrusion, dust and noise affecting the rural sense of place. **Operational Phase:** ▪ Potential visual intrusion caused by large-scale wind turbines on the skyline of the rural landscape; ▪ Potential visual clutter caused by infrastructure (substation and operations / maintenance structures and overhead powerlines) on the open landscape; and ▪ Potential visual effect of lighting at night on dark skies. **Decommissioning Phase:** ▪ Potential visual effect of remaining roads, platforms and concrete slabs on the landscape after decommissioning of the WEF.
Heritage (Archaeology and Cultural Landscape)	**Construction Phase:** ▪ Potential direct and indirect impacts to archaeological resources; ▪ Potential direct and indirect impacts to palaeontological resources; ▪ Potential direct and indirect impacts to graves; and ▪ Potential direct impacts to the cultural landscape and disruption of traditional activities. **Operational Phase:** ▪ Potential direct impacts to the cultural landscape and disruption of traditional activities. **Decommissioning Phase:** ▪ Potential direct and indirect impacts to archaeological resources; ▪ Potential direct and indirect impacts to palaeontological resources; ▪ Potential direct and indirect impacts to graves; and ▪ Potential direct impacts to the cultural landscape and disruption of traditional activities.
Soils and Agricultural Potential .	**Construction Phase:** ▪ Loss of agricultural land use; ▪ Soil erosion; ▪ Loss of topsoil; and ▪ Degradation of veld vegetation

KEY IMPACT	IMPACTS IDENTIFIED
	Operational Phase: ▪ Loss of agricultural land use; ▪ Soil erosion; and ▪ Additional land use income. **Decommissioning Phase:** ▪ Loss of agricultural land use; ▪ Soil erosion; ▪ Loss of topsoil; and ▪ Degradation of veld vegetation.
Socio-Economic .	**Construction Phase:** ▪ Influx of people causes a disturbance in the existing social order; ▪ Additional strain on municipal services; ▪ Employment opportunities and skills development; ▪ The presence of workers could increase the risk of stock theft, poaching, increased veld fire and damage to farm infrastructure; and ▪ Increased income via employment and new economic opportunities. **Operational Phase:** ▪ Employment opportunities and skills development; ▪ Impact of project expenditure and long-term diversification of the economy; and ▪ Impact of the visibility, operation and audibility of the development. **Decommissioning Phase:** ▪ Loss of increased income through employment; ▪ Loss of new economic opportunities; ▪ Loss of SED spending; and ▪ Loss of employment.
Noise	**Construction Phase:** ▪ Increase in ambient sound levels as a result of construction activities during the day. ▪ Increase in ambient sound levels as a result of construction activities during the day. ▪ Increase in ambient sound levels as a result of day-time construction traffic. **Operational Phase:** ▪ Increase in ambient sound levels as result of operational wind turbines at night. **Decommissioning Phase:** ▪ Increase in ambient sound levels as a result of decommissioning activities during the day. ▪ Increase in ambient sound levels as a result of decommissioning activities at night
Transportation	**Construction, Operational and Decommissioning Phases** ▪ Noise, dust & exhaust pollution due to the increased vehicles trips on the internal on-sit roads; ▪ Noise, dust & exhaust pollution due to the increased vehicles trips on the local unsurface access roads; ▪ Noise, dust & exhaust pollution due to the increased vehicles trips on the local provincia road (R355); and ▪ Noise, dust & exhaust pollution due to the increased vehicles trips on the High-orde (National) road network (N7).

2. APPROACH TO PREPARING THE EMPr

2.1 COMPLIANCE WITH RELEVANT LEGISLATION

In terms of legal requirements, a crucial objective of the EMPr is to satisfy the requirements of Section 24N of the NEMA, as amended, and Appendix 4 of the amended NEMA EIA Regulations published in Government Notice No. R 326 of 7 April 2017. These regulations prescribe the content of the EMPr and specify the type of supporting information that must accompany the submission of the report to the authorities. An overview of where the requirements are addressed in this EMPr is presented in Tables 3 and 4.

Table 3: Compliance with Section 24N of NEMA

Requirements of Section 24N of NEMA	Where it is included in this EMPr
2) The environmental management programme must contain- a) information on any proposed management, mitigation, protection or remedial measures that will be undertaken to address the environmental impacts that have been identified in a report contemplated in subsection 24(1A), including environmental impacts or objectives in respect of- (i) planning and design; (ii) pre-construction and construction activities; (iii) the operation or undertaking of the activity in question; (iv) the rehabilitation of the environment; and (v) closure, if applicable;	Section 1.3 (Pages 9-10) and the columns detailing the impact description, mitigation and management objectives, and mitigation and management actions in Sections 4 to 15 (Pages 23-162) of this EMPr.
b) details of (i) the person who prepared the environmental management programme; and (ii) the expertise of that person to prepare an environmental management programme;	Section 1.2 (Pages 7-8) and Appendix A (Page 156-157) of the EIA Report.
c) a detailed description of the aspects of the activity that are covered by the environmental management programme;	Section 1 (Pages 3-4) and Section 1.1 (Pages 5-6).
d) information identifying the persons who will be responsible for the implementation of the measures contemplated in paragraph (a);	Columns in Section 4 to 15 (Pages 23-162) of the EMPr regarding the monitoring responsibility, including the requirements for monitoring and reporting on compliance and the responsible parties noted in Section 3.
e) information in respect of the mechanisms proposed for monitoring compliance with the environmental management programme and for reporting on the compliance;	The columns detailing the mitigation and management actions, and the monitoring methodology, frequency and responsibility in Sections 4 to 15 of this EMPr.
f) as far as is reasonably practicable, measures to rehabilitate the environment affected by the undertaking of any listed activity or specified activity to its natural or predetermined state or to a land use which conforms to the generally accepted principle of sustainable development; and	Sections 4 to 15 (Pages 23-162) of this EMPr, as applicable to the post-construction, rehabilitation phase and the decommissioning phase.
g) a description of the manner in which it intends to- (i) modify, remedy, control or stop any action, activity or process	The columns detailing the mitigation and management objectives,

Requirements of Section 24N of NEMA	Where it is included in this EMPr
which causes pollution or environmental degradation; (ii) remedy the cause of pollution or degradation and migration of pollutants; and (iii) Comply with any prescribed environmental management standards or practices.	mitigation and management actions, and the monitoring methodology, frequency and responsibility in Sections 4 to 15 (Pages 23-162) of this EMPr.
3) The environmental management programme must, where appropriate- a) set out time periods within which the measures contemplated in the environmental management programme must be implemented; b) contain measures regulating responsibilities for any environmental damage, pollution, pumping and treatment of polluted or extraneous water or ecological degradation which may occur inside and outside the boundaries of the operations in question; and c) develop an environmental awareness plan describing the manner in which- (i) the applicant intends to inform his or her employees of any environmental risk which may result from their work; and (ii) risks must be dealt with in order to avoid pollution or the degradation of the environment.	The columns detailing the mitigation and management actions, and the monitoring methodology, frequency and responsibility in Sections 4 to 15 (Pages 23-162) of this EMPr. Section 11 (Pages 72-80) of this EMPr includes an Environmental Awareness Plan.
5) The Minister, the Minister responsible for mineral resources or an MEC may call for additional information and may direct that the environmental management programme in question must be adjusted in such a way as the Minister, the Minister responsible for mineral resources or the MEC may require.	Not applicable at this stage.
6) The Minister, the Minister responsible for mineral resources or an MEC may at any time after he or she has approved an application for an environmental authorisation approve an amended environmental management programme.	Not applicable at this stage.
7) The holder and any person issued with an environmental authorisation- a) must at all times give effect to the general objectives of integrated environmental management laid down in section 23; b) must consider, investigate, assess and communicate the impact of his or her prospecting or mining on the environment; c) must manage all environmental impacts (i) in accordance with his or her approved environmental management programme, where appropriate; and (ii) as an integral part of the prospecting or mining, exploration or production operation, unless the Minister responsible for mineral resources directs otherwise; d) must monitor and audit compliance with the requirements of the environmental management programme; e) must, as far as is reasonably practicable, rehabilitate the environment affected by the prospecting or mining operations to its natural or predetermined state or to a land use which conforms to the generally accepted principle of sustainable development; and f) is responsible for any environmental damage, pollution, pumping and treatment of polluted or extraneous water or ecological degradation as a result of his or her operations to which such right, permit or environmental authorisation relates.	Throughout the EMPr.
8) Notwithstanding the Companies Act, 2008 (Act No. 71 of 2008), or	Section 3.1 (Page 21) details the

Requirements of Section 24N of NEMA	Where it is included in this EMPr
the Close Corporations Act, 1984 (Act No. 69 of 1984), the directors of a company or members of a close corporation are jointly and severally liable for any negative impact on the environment, whether advertently or inadvertently caused by the company or close corporation which they represent, including damage, degradation or pollution.	responsibility of the Project Owner.

Table 4: Appendix 4 of the amended EIA Regulations

Requirements of Appendix 4 of the 2014 amended NEMA EIA Regulations GN R 326	Where it is included in this EMPr?
1. (1) An EMPr must comply with section 24N of the Act and include: (a) details of: (i) the EAP who prepared the EMPr; and (ii) the expertise of that EAP to prepare an EMPr, including a curriculum vitae;	Section 1.2 (Pages 7-8) and Appendix A (Pages 156-157) of the EIA Report
(b) a detailed description of the aspects of the activity that are covered by the EMPr as identified by the project description;	Section 1 (Pages 3-4) and Section 1.1 (Pages 5-6)
(c) a map at an appropriate scale which superimposes the proposed activity, its associated structures, and infrastructure on the environmental sensitivities of the preferred site, indicating any areas that should be avoided, including buffers;	Appendix B of this EMPr (Pages 162-159).
(d) a description of the impact management outcomes, including management statements, identifying the impacts and risks that need to be avoided, managed and mitigated as identified through the environmental impact assessment process for all phases of the development including: (i) planning and design; (ii) pre-construction activities; (iii) construction activities; (iv) rehabilitation of the environment after construction and where applicable post (v) closure; and (vi) where relevant, operation activities;	Section 1.4 (Pages 10-13) and the columns detailing the impact description, mitigation and management objectives, and mitigation and management actions in Sections 4 to 15 (Pages 23-162) of this EMPr.
(f) a description of proposed impact management actions, identifying the manner in which the impact management outcomes contemplated in paragraphs (d) will be achieved, and must, where applicable, include actions to: (i) avoid, modify, remedy, control or stop any action, activity or process which causes pollution or environmental degradation; (ii) comply with any prescribed environmental management standards or practices; (iii) comply with any applicable provisions of the Act regarding closure, where applicable; and (iv) comply with any provisions of the Act regarding financial provisions for rehabilitation, where applicable;	The columns detailing the mitigation and management actions in Sections 4 to 15 (Pages 23-162) of this EMPr.
(g) the method of monitoring the implementation of the impact management actions contemplated in paragraph (f);	The columns detailing the monitoring methodology in Sections 4 to 15 (Pages 23-162) of this EMPr.
(h) the frequency of monitoring the implementation of the impact management actions contemplated in paragraph (f);	The columns detailing the monitoring frequency in Sections 4 to 15 (Pages 23-162) of this EMPr.

Requirements of Appendix 4 of the 2014 amended NEMA EIA Regulations GN R 326	Where it is included in this EMPr?
(i) an indication of the persons who will be responsible for the implementation of the impact management actions;	The columns detailing the monitoring responsibility in Sections 4 to 15 (Pages 23-162) of this EMPr.
(j) the time periods within which the impact management actions contemplated in paragraph (f) must be implemented;	The columns detailing the mitigation and management actions, and the monitoring methodology and frequency in Sections 4 to 15 (Pages 23-162) of this EMPr.
(k) the mechanism for monitoring compliance with the impact management actions contemplated in paragraph (f);	The columns detailing the mitigation and management actions, and the monitoring methodology, frequency and responsibility in Sections 4 to 15 (Pages 23-162) of this EMPr.
(l) a program for reporting on compliance, taking into account the requirements as prescribed by the Regulations;	Section 4 to 15 (Pages 23-162) of the EMPr, including the requirements for monitoring and reporting on compliance and the responsible parties noted in Section 3 (Pages 20-22).
(m) an environmental awareness plan describing the manner in which: (i) the applicant intends to inform his or her employees of any environmental risk which may result from their work; and (ii) risks must be dealt with in order to avoid pollution or the degradation of the environment; and	Section 11 of this EMPr (Pages 72-80).
(n) Any specific information that may be required by the competent authority.	Section 2.2 (Pages 17-19) and the management objectives and management actions in Sections 4 to 15 (Pages 23-162).

2.2 COMPLIANCE WITH DEA REQUIREMENTS

The Final Scoping Report was received by DEA on the 11h of December 2017, in accordance with Regulation 21 (1) of the amended 2014 NEMA EIA Regulations, for decision-making in terms of Regulation 22 of the amended 2014 NEMA EIA Regulations. The DEA accepted the Final Scoping Report and Plan of Study for EIA on 12 February 2018, which marked the end of the Scoping Phase. The acceptance letter is included in Appendix E5 of the EIA Report.

The requirements listed in the acceptance letter from the DEA (dated 12 February 2018), stipulated certain plans that must be included in the EMPr. The EMPr is therefore structured in such a way to comply with the requirements of the DEA and to ensure that the mitigation and management measures that have been identified during the EIA Process are included in the respective plans. The requirements listed within the acceptance letter are detailed in Table 5.

It is important to note that other project specific aspects (such as the findings and recommendations of the specialist studies), in addition to those covered by the plans required by the DEA, have been included in Section 13 of the EMPr.

Table 5: DEA Requirement for the EMPr

DEA Requirements	Relevant Section in the EMPr
i. All recommendations and mitigation measures recorded in the EIAr and the specialist studies conducted.	Recommended mitigation measures and monitoring actions as noted in the EIA Report and specialist studies have been included in this EMPr, where relevant.
ii. The final site layout map	Refer to Figure 1 and Appendix A of this EMPr for the site layout map. Refer to Section 1.1 of this EMPr for a description of the approach followed to determine the site layout.
iii. Measures as dictated by the final site layout map and micro-siting.	Refer to Appendix A of this EMPr for the site layout map. Refer to Section 1.1 of this EMPr for a description of the approach followed to determine the site layout.
iv. An environmental sensitivity map indicating environmental sensitive areas and features identified during the EIA Process.	Refer to Appendix B of this EMPr for an environmental sensitivity map. Refer to Section 1.1 of this EMPr for a description of the approach followed to identify the environmental sensitivities.
v. A map combining the final layout map superimposed (overlain) on the environmental sensitivity map.	Refer to Appendix B of this EMPr for a combined environmental sensitivity and layout map. Refer to Section 1.1 of this EMPr for a description of the approach followed to identify the environmental sensitivities and to determine the site layout.
vi. An alien invasive management plan to be implemented during the construction and operation of the facility. The plan must include mitigation measures to reduce the invasion of alien species and ensure that the continuous monitoring and removal of alien species is undertaken.	Refer to Section 4 of this EMPr.
vii. A plant rescue and protection plan which allows for the transplant of conservation important species from areas to be transformed. This plan must be compiled by a vegetation specialist familiar with the site and be implemented prior to commencement of the construction phase.	Refer to Section 5 of this EMPr. It should be noted that faunal protection and habitat rehabilitation has also been included in this section.
viii. An avifauna monitoring and management plan to be implemented during the construction and operation of the facility. This plan must be drafted by a suitably qualified avifauna specialist	Refer to Section 12 of this EMPr.
ix. A re-vegetation and habitat rehabilitation plan to be implemented during the construction and operation of the facility. Restoration must be undertaken as soon as possible after completion of construction activities to reduce the amount of habitat converted at any one time and to speed up the recovery to natural habitats.	Refer to Section 5 of this EMPr. It should be noted that faunal protection and habitat rehabilitation has also been included in this section.
x. An open space management plan to be implemented during the construction and operation of the facility.	Refer to Section 6 of this EMPr.
xi. A traffic management plan for the site access roads to ensure that no hazards would result from the increased truck traffic and that traffic flow would not be adversely impacted. This plan must include measures to minimise impacts on local	Refer to Section 7 of this EMPr.

DEA Requirements	Relevant Section in the EMPr
commuters e.g. limiting construction vehicles travelling on public roadways during the morning and late afternoon commute time and avoid using roads through densely populated built-up areas so as not to disturb existing retail and commercial operations.	
xii. A transportation plan for the transport of components, main assembly cranes and other large pieces of equipment.	Refer to Section 7 of this EMPr.
xiii. A storm water management plan to be implemented during the construction and operation of the facility. The plan must ensure compliance with applicable regulations and prevent off-site migration of contaminated storm water or increased soil erosion. The plan must include the construction of appropriate design measures that allow surface and subsurface movement of water along drainage lines so as not to impede natural surface and subsurface flows. Drainage measures must promote the dissipation of storm water run-off.	Refer to Section 8 of this EMPr.
xiv. A fire management plan to be implemented during the construction and operation of the facility.	Refer to Section 11 of this EMPr. It should be noted that this has been combined with an Environmental Awareness Plan.
xv. An erosion management plan for monitoring and rehabilitating erosion events associated with the facility. Appropriate erosion mitigation must form part of this plan to prevent and reduce the risk of any potential erosion.	Refer to Section 9 of this EMPr.
xvi. An effective monitoring system to detect any leakage or spillage of all hazardous substances during their transportation, handling, use and storage. This must include precautionary measures to limit the possibility of oil and other toxic liquids from entering the soil or storm water systems	Refer to Section 10 of this EMPr.
xvii. Measures to protect hydrological features such as streams, rivers, pans, wetlands, dams and their catchments, and other environmental sensitive areas from construction impacts including the direct or indirect spillage of pollutants.	Measures to protect hydrological features such as streams, rivers, pans, wetlands, dams and their catchments have been included throughout the EMPr, such as Sections 8, 9 and 10.

2.3 CONTENTS OF THE EMPr

Where applicable, each section of the EMPr is divided into the following four phases of the project cycle:

- Design Phase;
- Construction Phase;
- Operational Phase; and
- Decommissioning Phase.

The EMPr includes the findings and recommendations of the EIA Process and specialists studies. However, the EMPr is considered a “living” document and must be updated with additional information or actions during the design, construction, operational and decommissioning phases if applicable.

The EMPr follows an approach of identifying an over-arching goal and objectives, accompanied by management actions that are aimed at achieving these objectives. The management actions are presented in a table format in order to show the links between the goal and associated objectives, actions, responsibilities, and monitoring requirements and targets.

The management plans for the design, construction, operational and decommissioning phases consist of the following components:

- **Impact:** The potential positive or negative impact of the development that needs to be enhanced, mitigated or eliminated.
- **Objectives:** The objectives necessary in order to meet the goal; these take into account the findings of the specialist studies.
- **Mitigation/Management Actions**: The actions needed to achieve the objectives of enhancing, mitigating or eliminating impacts; taking into consideration factors such as responsibility, methods, frequency, resources required and prioritisation.
- **Monitoring**: The key monitoring actions required to check whether the objectives are being achieved, taking into consideration methodology, frequency and responsibility.

2.4 GOAL FOR ENVIRONMENTAL MANAGEMENT

The overall goal for environmental management for the proposed Kap Vley WEF is to construct and operate the project in a manner that:

- Minimises the ecological footprint of the project on the local environment;
- Minimises impacts on fauna, flora and freshwater ecosystems;
- Facilitates harmonious co-existence between the project and other land uses in the area; and
- Contributes to the environmental baseline and understanding of environmental impacts of WEFs in a South African context.

3. ROLES AND RESPONSIBILITIES

For the purposes of the EMPr, the generic roles that need to be defined are those of the:

- Project Owner or Project Developer;
- Environmental Control Officer (ECO);
- Construction Manager (Lead Contractor); and
- Facility Manager.

Note: The specific titles for these functions will vary from project to project. The intent of this section is to give a generic outline of what these roles typically require. It is expected that this will be appropriately defined at a later stage.

3.1 PROJECT OWNER/DEVELOPER

The Project Developer (i.e. juwi Renewable Energies) is the current 'owner' of the project and, as such, is responsible for ensuring that the conditions of the EA issued in terms of NEMA (should the project receive such authorisation) are fully adhered to, as well as ensuring that any other necessary permits or licences are obtained and complied with. It is expected that the project owner at the point of construction will appoint the ECO and the Lead Contractor, and possibly an Environmental Manager (or Health, Safety and Environmental Manager).

3.2 ENVIRONMENTAL CONTROL OFFICER

An independent ECO must be appointed to ensure that the provisions of the EMPr as well as the conditions of the EA (should such authorization be granted by DEA) are complied with at all times. The ECO must also monitor compliance of the proposed project with environmental legislation and recommendations of the EMPr, as well as oversee the implementation of the EMPr during the phases of the project, monitor environmental impacts, undertake record-keeping.

The ECO will be responsible for updating the EMPr as and when necessary, and compiling a monitoring checklist based on the EMPr. The roles and responsibilities of the ECO should include the following:

- The ECO must undertake periodic environmental audits during the relevant phases of the proposed project in order to monitor and record environmental impacts and non-conformances, and to monitor site activities to ensure adherence to the specifications contained in the EMPr, using a monitoring checklist. The timeframes for environmental audits will be indicated in the EA (should such authorisation be granted by the DEA).
- Environmental compliance/audit reports must be compiled and submitted by the ECO to the Competent Authority (i.e. DEA and/or Northern Cape Department of Environment and Nature Conservation) on a regular basis (i.e. at intervals as indicated in the EA (should such authorisation be granted by the DEA)).
- The ECO must maintain a diary of site visits and audits, a copy of the EA (should such authorisation be granted by the DEA) and relevant permits for reference purposes, a non-conformance register, a public complaint register, and a copy of previous environmental audits undertaken.
- Prior to the commencement of construction, the ECO must meet on site with the Contractor to confirm the construction procedure and designated construction areas and work activity zones.
- Reporting of any non-conformances within 48 hours of identification of such non-conformance to the relevant agents.
- Conducting an environmental inspection on completion of the construction period and 'signing off' the construction process with the Contractor.
- Ensure that records are kept of all monitoring activities and results.
- Conducting an environmental inspection on completion of decommissioning and 'signing off' the site rehabilitation process.

The Lead Contractor and sub-contractors may have their own Environmental Officers, or designate Environmental Officer functions to certain personnel.

3.3 CONSTRUCTION MANAGER

The Construction Manager will be responsible for the following:

- Ensure that all appointed contractors and sub-contractors are aware of the EMPr and their respective responsibilities;
- Prior to the commencement of construction, the Lead Contractor must meet on site with the ECO in order to confirm the construction procedure and designated construction areas and work activity zones.
- Ensure that each sub-contractor employs an Environmental Officer (or employs a designated suitably qualified individual to fulfil the role of an Environmental Officer) to monitor and report on the daily activities on-site during the construction period;
- Implementation of the overall construction programme, project delivery and quality control for the construction for the WEF;
- Overseeing compliance with the Health, Safety and Environmental Responsibilities specific to the project management related to project construction;
- Promoting total job safety and environmental awareness by employees, contractors and sub-contractors and stress to all employees and contractors and sub-contractors the importance that the project proponent attaches to safety and the environment;
- Ensuring that safe, environmentally acceptable working methods and practices are implemented and that sufficient plant and equipment is made available properly operated and maintained, to facilitate proper access and enable any operational to be carried out safely;
- Ensuring that all appointed contractors and sub-contractors repair, at their own cost, any environmental damage as a result of a contravention of the specifications contained in the EMPr, to the satisfaction of the Project Owner's ECO;
- Implement the Traffic Management Plan (Section 7), Transportation Plan (Section 7) and Storm Water Management Plan (Section 8).

3.4 FACILITY MANAGER

The Facility Manager will be responsible for the following:

- Operation of the Kap Vley WEF;
- Required maintenance of the facility; and
- Overall compliance with the EMPr and EA (should such authorisation be granted by the DEA).

4. ALIEN INVASIVE VEGETATION MANAGEMENT PLAN

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	*Frequency*	*Responsibility*
A. DESIGN PHASE					
4.1. Impacts due to establishment of alien invasive plants.	Ensure the appropriate removal of alien invasive vegetation from the proposed project area and prevent the establishment and spread of alien invasive plants due to the project activities.	4.1.1. Compile an alien and invasive species control and monitoring plan as required in the Alien and Invasive Species Regulations under the National Environmental Management Biodiversity Act (Act 10 of 2004). 4.1.2. Ensure compliance with relevant Environmental Specifications for the control and removal of alien invasive plant species. 4.1.3. Compile and finalise an alien weed eradication programme.	▪ Ensure that this is done and taken into consideration during the planning and design phase by reviewing signed minutes of meetings or signed reports. ▪ Appoint a suitable specialist/ Contractor or contact the relevant authorities to seek guidance on the removal of the planted alien invasive species.	▪ Once-off during the design phase. ▪ Once-off during the design phase with possible follow up tasks during the construction phase.	▪ Project Owner ▪ Project Owner and ECO ▪ ECO
B. CONSTRUCTION PHASE					
4.2. Impacts due to the establishment of and increased spread of alien invasive plants.	Avoid establishment and reduce the spread of alien invasive plants due to the project activities.	4.2.1. Appoint a suitable specialist or contractor to undertake a sweep and survey of the final development footprint site, with an alien invasive eradication team to remove exotic vegetation prior to the commencement of construction. 4.2.2. Establish an ongoing monitoring programme for the construction phase to detect and quantify any alien species that may become established and identify the problem species (as per Conservation of Agricultural Resources Act (Act 43 of 1983) (CARA) and National Environmental Management:	▪ Appoint a suitable vegetation contractor to inspect the site and remove any exotic weeds prior to the commencement of construction. ECO to ensure that this is taken into consideration and implemented. ▪ Prepare monitoring programme which will monitor the presence of alien invasive species on the site. If any alien invasive species are detected then the distribution of these should be mapped (GPS co-	▪ Prior to the commencement of construction. ▪ Once-off	▪ Project Owner, ECO and Specialist Contractor ▪ ECO and Contractor

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	***Frequency***	***Responsibility***
		Biodiversity Act (Act 10 of 2004) (NEM: BA).	ordinates of concentrations of plants). The results should be interpreted in terms of the risk posed to sensitive habitats within and surrounding the project area.		
		4.2.3. Ensure proper management of soil stockpiles. Do not import soil stockpiles from areas with alien plants to ensure proper management of stockpiles.	▪ Monitor the presence of alien invasive plants during the construction phase via visual inspections and take action to remove and control these species.	▪ On-going	▪ ECO and Contractor
		4.2.4. Undertake rehabilitation of disturbed areas as soon as possible after construction. Stockpile the shallow topsoil layer separately from the subsoil layers. Reinstate the topsoil layers (containing seed and vegetative material) when construction is complete to allow the plants to rapidly re-colonise the bare soil areas.	▪ Rehabilitate disturbed areas and monitor the presence of alien invasive species on site.	▪ On-going	▪ ECO and Contractor
		4.2.5. Keep clearance and disturbance of indigenous vegetation to a minimum.	▪ Monitor and manage vegetation clearing by undertaking visual inspections to ensure minimal disturbance and to restrict activities to within demarcated areas.	▪ On-going	▪ ECO and Contractor
		4.2.6. Ensure that the footprint required for the proposed project activities (such as temporary stockpiling, earthworks, storage areas, site establishment etc.) is kept at a	▪ Verify that the proposed project area is determined and outlined prior to the commencement of the construction phase by undertaking	▪ Once-off prior to construction and as required during the construction	▪ ECO and Contractor

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	***Frequency***	***Responsibility***
		minimum.	visual inspections.	process.	
		4.2.7. Ensure that alien invasive vegetation found on site, within the proposed project footprint, is immediately controlled and removed promptly, in a scheduled manner throughout the construction phase. The removal of alien vegetation on site during the construction phase should use registered control methods and take into consideration the Alien and Invasive Species Regulations published in terms of Section 97(1) of the NEM: BA, if applicable.	▪ Monitor the presence of alien invasive plants during the construction phase via visual inspections and take action to remove and control these species. If any alien invasive species are detected then the distribution of these should be mapped (GPS co-ordinates of concentrations of plants). The results should be interpreted in terms of the risk posed to sensitive habitats within and surrounding the project area. Any alien invasive should be cleared from site.	▪ On-going	▪ ECO and Contractor
		4.2.8. The removed alien invasive vegetation should be immediately disposed at a suitable waste disposal facility and should not be kept on site for prolonged periods of time, as this will enhance the spread of these species.	▪ Monitor the removal of the alien vegetation found on site via visual inspections.	▪ As necessary during the construction phase.	▪ ECO
		4.2.9. All construction machinery and plant equipment delivered to site for use during the construction phase should be cleaned in order to limit the introduction of alien species.	▪ Clean machinery and equipment prior to the construction phase. ▪ ECO to conduct visual inspections to verify that machinery and equipment are cleaned, and report any non-compliance.	▪ Prior to the commencement of construction. ▪ As necessary during the construction phase.	▪ ECO and Contractor

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	***Frequency***	***Responsibility***
C. OPERATIONAL PHASE					
4.3. Impacts due to establishment of alien invasive plants. Exotic weed invasion may result in the ousting of natural vegetation and alteration of ecological processes on site, with incremental impacts on the adjacent veld types.	Reduce the establishment and spread of alien invasive plants. To remove exotic weeds as and when they may arise and thereby prevent alteration of local and adjacent habitat forms.	4.3.1. Continue with on-going monitoring programme to detect and quantify any alien species that may become established and identify the highly invasive species during the operation phase.	▪ Annual audit of project area and immediate surroundings. If any alien invasive species are detected then the distribution of these should be mapped (GPS co-ordinates of concentrations of plants). The results should be interpreted in terms of the risk posed to sensitive habitats within and surrounding the project area.	▪ Annual	▪ Project Owner
		4.3.2. Immediately control any alien plants that become established using registered control methods. Use of herbicides and manual removal of alien vegetation on site where this may arise to be undertaken as advised by a specialist. Regular address and redress of weeds identified on site by a suitable contractor. The clearance of exotic weed to be undertaken bi-annually at a minimum and on a needs basis at an intermittent level.	▪ Monitor the use of herbicide sprays and manual removal of alien vegetation by undertaking visual inspections and reporting any non-compliance. ▪ Maintain register of weed spraying activities and ensure that herbicide use is recorded.	▪ Bi-annually	▪ Project Owner and Environmental Manager/ECO
D. DECOMMISSIONING PHASE					
4.4. Exotic weed invasion of the decommissioned site resulting in ecological change.	To prevent the excessive growth and propagation of exotic weeds on disturbed lands that formed a portion of the	4.4.1. All natural areas must be rehabilitated with species indigenous to the area. Re-seed with locally-sourced seed of indigenous grass species that were recorded on site pre-construction.	▪ Final external audit of area to confirm that area is rehabilitated to an acceptable level.	▪ Once off	▪ Lead Contractor with advice from specialist

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	***Frequency***	***Responsibility***
	WEF.	4.4.2. Exotic weed control measures to be instituted through weed control programme. Regular redress of exotic weed through the use of herbicide and manual removal.	▪ Compile weed eradication programme for a period of 12 months after the decommissioning exercise. ▪ Appoint contractor to undertake the weed eradication programme.	▪ Weed eradication exercise to be undertaken every 6 months for a period of 12 months following decommissioning. ▪ Prior to the commencement of the decommissioning phase.	▪ Project Owner ▪ Project Owner

5. PLANT RESCUE AND PROTECTION PLAN INCLUDING RE-VEGETATION AND HABITAT REHABILITATION PLAN (INCLUDING FAUNA AND AVIFAUNA)

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	*Frequency*	*Responsibility*
A. DESIGN PHASE					
5.1. The ousting of fauna through anthropogenic activities, disturbance of refugia and general change in habitat, with impacts on terrestrial and aquatic ecology as a result of the final site layout and routes of the access roads.	Avoidance of unnecessary disturbance to the site and surrounds, and to establish buffers where required.	5.1.1. Avoidance of drainage features during the design and layout of the proposed WEF. Ensure that sensitive habitat and features (as defined in the Ecological Impact Assessment, Appendix G of the EIA Report) are considered in the design. 5.1.2. Incorporate minor drainage lines into design and avoid unnecessary disturbance, where applicable. Refer to Appendix B and C of this EMPr. Refer to the Dry and Ephemeral Watercourses Impact Assessment in Appendix J of the Draft EIA Report. 5.1.3. Consider the most applicable access road to site. 5.1.4. Appoint a specialist or suitable contractor to identify any plant species on site that may require “rescue” as well as any exotic weeds/vegetation that require removal. Appoint a specialist team flush game from the construction area. 5.1.5. Consideration of the siting and layout of the temporary construction site and worker camp to avoid all sensitive areas as identified	▪ Review the site plan with the ECO and possibly an ecologist (if required). ▪ Appoint a specialist to oversee the final development footprint area and undertake search and rescue, game sweep and alien removal. ▪ Ensure that this is taken into consideration during the planning and design phase by reviewing signed minutes of meetings or signed reports.	▪ Once-off, prior to the commencement of construction. ▪ Appoint specialist once-off, prior to the commencement of construction. ▪ Once-off during the planning and design phase.	▪ Project Owner and ECO ▪ Project Owner ▪ Project Owner

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	***Frequency***	***Responsibility***
		in the relevant specialist studies included in the EIA Report.			
5.2. Destruction of indigenous vegetation without relevant licences or permits.	Ensure compliance with relevant Provincial and National legislation in respect of habitat and vegetation forms.	5.2.1. Ensure the necessary permits or licences are identified and applied for as applicable for the removal of protected, indigenous vegetation. 5.2.2. Await response and provision of permit (as required) from the relevant Authorities prior to the removal of the indigenous species (if required). Once these permits are obtained, search and rescue must be undertaken for the indigenous species.	▪ Review the findings of the Ecological Impact Assessment and consider legislative requirements in respect of loss of indigenous vegetation etc. ▪ Appoint a suitable Search and Rescue Specialist/Contractor to undertake Search and Rescue. ▪ Ensure that this is taken into consideration during the planning and design phase by reviewing signed minutes of meetings or signed reports.	▪ Once-off, prior to the commencement of construction ▪ Once-off, prior to the commencement of construction ▪ Once-off during the planning and design phase.	▪ Project Owner and ECO ▪ Project Owner , Specialist/ Contractor and ECO ▪ Project Owner
5.3. Loss of Species of Special Concern (SSC) and protected species and their habitats.	Minimise fragmentation and loss of SSC and protected species and their habitats through the careful siting and layout planning for the project.	5.3.1. Avoid the removal of listed SSC and protected species as far as possible.	▪ Ensure that this is taken into consideration during the planning and design phase by reviewing signed minutes of meetings or signed reports.	▪ Once-off during the planning and design phase	▪ Project Owner
		5.3.2. Avoid construction within drainage lines as far as possible.	▪ Ensure that this is taken into consideration during the planning and design phase by reviewing signed minutes of meetings or signed reports.	▪ Once-off during the planning and design phase	▪ Project Owner ▪ ECO

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	***Frequency***	***Responsibility***
5.4. Impact on avian (birds and bats) behaviour and avian species as a result of collision with infrastructure of the proposed WEF.	Reduce impact on avifauna.	5.4.1. The more sensitive habitat areas for birds and bats on the site should be avoided. The sensitivity buffers outlined in the Bird Impact Assessment (Appendix H) and Bat Impact Assessment (Appendix I) must be adhered to.	▪ Ensure that this is taken into consideration during the planning and design phase. ▪ Ensure that this is taken into consideration during the planning and design phase by reviewing	▪ Once-off ▪ Once during the design and planning phase	▪ Project Owner and Contractor ▪ Project Owner and Contractor
B. CONSTRUCTION PHASE					
5.5. Excessive loss of natural vegetation in and outside the development footprint area and veld degradation.	Minimise loss of natural vegetation. Prevent impacts on natural vegetation in sensitive habitats and SSC.	5.5.1. Sensitive habitats and areas outside of the project development area should be clearly demarcated as no go areas during the construction phase to avoid accidental impacts.	▪ Strict control over the behaviour of construction workers, restricting activities to within demarcated areas for construction. ▪ ECO must monitor activities and record and report non-compliance. Fines should be issued for non-compliance and the payment of fines should be specified in the contract of the construction workers and in the contract of the ECO. ▪ Strict control and proper education of staff to prevent misconduct. If ECO is absent, there should be a designated ECO present to deal with any urgent issues.	▪ Daily	▪ ECO and Contractor
		5.5.2. Ensure that the footprint required for the proposed project activities is kept at a	▪ Verify that the proposed project area is determined and outlined	▪ Once-off prior to construction and	▪ ECO

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	***Frequency***	***Responsibility***
		minimum.	prior to the commencement of the construction phase by undertaking visual inspections.	as required during the construction process.	
		5.5.3. The proposed project footprint must be demarcated to reduce unnecessary disturbance beyond the proposed project area.	▪ Carry out visual inspections to ensure strict control over the behaviour of staff in order to restrict activities to within demarcated areas.	▪ Weekly	▪ ECO
		5.5.4. The Contractors and construction personnel must be made aware that indigenous vegetation must not be removed or damaged.	▪ Carry out Environmental Awareness Training. ▪ Conduct audits of the signed attendance registers.	▪ Once-off training and ensure that all new staff are inducted. ▪ Monthly	▪ Contractor/ ECO ▪ ECO
		5.5.5. Ensure that the temporary site camp is not located within any drainage lines on site	▪ Monitor the placement of the site camp via visual inspections, and record and report any non-compliance.	▪ Once-off prior to construction and as required during the construction phase.	▪ ECO
		5.5.6. Unnecessary impacts on surrounding natural vegetation must be avoided during construction. All construction vehicles should remain on properly and clearly demarcated roads.	▪ Strict control over the behaviour of construction workers, restricting activities to within demarcated areas for construction. ▪ Include periodical site inspection in environmental performance reporting that specifically record occurrence of off-road vehicle	▪ Daily	▪ ECO and Contractor

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	***Frequency***	***Responsibility***
			tracks in specific areas.		
		5.5.7. Undertake rehabilitation of disturbed areas as soon as possible after construction. Stockpile the shallow topsoil layer separately from the subsoil layers. Reinstate the topsoil layers (containing seed and vegetative material) when construction is complete to allow the plants to rapidly re-colonise the bare soil areas. Re-seed with locally-sourced seed of indigenous grass species that were recorded on site during the pre-construction phase.	▪ Undertake audits following the construction phase and report any non-compliance.	▪ Monthly	▪ ECO and Contractor
		5.5.8. The collection, hunting or harvesting of any plants, fuel wood or animals at the site during construction should be strictly forbidden and the staff must be educated to prevent this from happening.	▪ Strict control over the behaviour of construction workers, restricting activities to within demarcated areas for construction. ▪ Carry out Environmental Awareness Training. ▪ Conduct audits of the signed attendance registers.	▪ Daily ▪ Once-off training and ensure that all new staff are inducted. ▪ As needed	▪ ECO and Contractor ▪ Contractor/ ECO ▪ ECO
		5.5.9. Fires should only be allowed within fire-safe demarcated areas. Open fires must be prohibited. Appropriate fire safety training should also be provided to staff that are to be on site for the duration of the construction phase.	▪ Strict control over the behaviour of construction workers, restricting activities to within demarcated areas. ▪ Ensure fire safety requirements are well understood and respected by	▪ Daily	▪ ECO and Contractor

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	***Frequency***	***Responsibility***
			workers (by providing basic fire safety training).		
		5.5.10. Existing access roads/servitudes must be used and should be located along the boundaries of existing disturbed areas, if possible.	▪ Compile plan pre-construction.	▪ Prior to construction commencing.	▪ Project Developer and ECO
5.6. Impact on indigenous vegetation, and on SSC and their habitats.	To reduce negative impacts on and loss of indigenous vegetation and protected trees. Minimise impacts on SSC and protected trees.	5.6.1. Appoint a specialist to undertake a second review and site visit of the final layout of the development footprint, in order to identify any plant species of SCC on site that may require "rescue" as well as any exotic weeds/vegetation that require removal.	▪ Appoint an Ecologist to oversee the final development footprint area through a reconnaissance survey.	▪ Prior to the commencement of construction.	▪ Project Owner, Specialist and ECO
		5.6.2. Identification of roadways and areas where extensive vegetation loss will result is required. Upon consideration, the avoidance of unnecessary clearance of vegetation on site should be undertaken through minor deviations to the design. 5.6.3. Ensure that the footprint required for the proposed project activities is kept at a minimum.	▪ Review how larger vegetation will be dealt with by contractors.	▪ Ongoing	▪ ECO and Project Owner
		5.6.4. A plant rescue operation must be initiated to confirm that no other species are located within the development site.	▪ ECO must undertake a final walkthrough of the site prior to commencement of construction to ensure no SCC will be impacted on	▪ Once-off	▪ ECO and Contractor

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	***Frequency***	***Responsibility***
		5.6.5. Clearing of vegetation should be kept to a minimum, keeping the width and length of the earthworks to a minimum.	▪ Monitor activities and record and report non-compliance.	▪ Daily	▪ ECO and Contractor
		5.6.6. Avoid the removal of listed SSC or protected species as far as possible. Should any of the listed/protected species need to be removed, the requisite permits must be obtained prior to the removal of the species.	▪ Monitor activities and record and report non-compliance.	▪ Daily	▪ ECO and Contractor
5.7. Disturbance of terrestrial fauna and flora on site due to construction workers and activities.	To advise construction staff of the requirements in respect of management of flora and fauna on site during the construction phase.	5.7.1. Conduct an Environmental Awareness Training and induction for all construction staff and personnel.	▪ Carry out Environmental Awareness Training with a discussion on the management of terrestrial fauna and flora on site. ▪ Conduct audits of the signed attendance registers.	▪ Prior to construction and as required by the ECO. Ensure that all new staff are inducted. ▪ Monthly	▪ ECO and Contractor ▪ ECO
5.8. Impact on fauna as a result of construction activities.	To identify any faunal mortalities and record the details (such as the reason, spatial extent etc.) in order to avoid repetition of fatality.	5.8.1. Establish a recording method in order to monitor the construction activities, including species presence within site, mortalities and sightings.	▪ Establish database of species, sightings etc. ▪ Construction personnel should advise on the findings and presence of fauna on site.	▪ Daily to monthly	▪ ECO
	To remove species that may be found present in the construction footprint and laydown area.	5.8.2. Appoint a specialist to conduct an inspection of the final project area and sweep or inspect the site for any fauna, once the fencing is complete (i.e. the established site should be flushed to ensure any large wildlife is not	▪ Team to flush game as required. ▪ ECO to monitor flushing process and record any incidents or non-compliance.	▪ Once off prior to commencement and thereafter if required.	▪ ECO and Project Owner

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	***Frequency***	***Responsibility***
		contained within the fenced area). Appoint a small team to flush game during the early evening. Game should be flushed by driving a team through the gated facility towards the exit.			
		5.8.3. The Contractor or Contractors Environmental Officer should monitor trenches at the start and end of each working day to check if any small animals are trapped.	▪ Monitor activities and record and report non-compliance.	▪ Daily and record as required during construction.	▪ ECO and Contractor
		5.8.4. No animals (including snakes) shall be killed on site. An expert or a suitable specialist should be appointed to remove and relocate any poisonous snakes during the construction phase.	▪ Monitor activities and record and report non-compliance. ▪ Ensure that the ECO receive the appropriate snake handling training.	▪ As required during construction.	▪ ECO and Contractor
5.9. Impacts on birds due to the construction of the WEF.	Reduce impact on birds.	5.9.1. An extensive post construction monitoring programme is recommended for this site in order to document any impacts and provide the basis for an adaptive management approach to any impacts. 5.9.2. A site specific avifaunal walk through should be conducted by a qualified ornithologist as part of the site specific EMP just prior to construction, so as to ensure that no sensitive bird species have started breeding on or near site.	▪ Compile and implement a monitoring plan, and record any findings. ▪ If any such sites are found case specific mitigation measures will need to be designed.	▪ Daily to monthly record keeping. ▪ Once-off prior to construction	▪ Project Owner and ECO ▪ ECO

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	***Frequency***	***Responsibility***
5.10. Faunal and avifaunal road mortality as a result of increased vehicles travelling to and within the site.	Minimise loss of fauna as a result of road mortalities.	5.10.1. The construction personnel and staff should be made aware of the presence of fauna within the proposed project area. The construction personnel and staff must also be made aware of the general speed limits on site and must be alert at all times for potential crossings.	▪ Carry out Environmental Awareness Training. ▪ Conduct audits of the signed attendance registers.	▪ Once-off training and ensure that all new staff are inducted. ▪ Monthly	▪ ECO and Contractor ▪ ECO
		5.10.2. To ensure that animals are not attracted to the site (and potentially resulting in increased road mortality), the waste collection bins and skips should be covered with suitable material, where appropriate, and the site camp must be kept clean on a daily basis.	▪ Monitor the activities via visual inspections, and record and report any non-compliance.	▪ Daily	▪ ECO and Contractor
5.11. Impact and loss of fauna as a result of the fence line and exclusion of fauna from site resulting in ecological change within the site.	To reduce incidental mortality and injury of fauna within the construction area.	5.11.1. Ensure that the live electrical fence wire is not placed at ground level. 5.11.2. Conduct inspections of the fence line to address any animals that may be affected by the fence. 5.11.3. A site specific avifaunal walk through should be conducted by a qualified ornithologist as part of the site specific EMP just prior to construction, so as to ensure that no sensitive bird species have started breeding on or near site. If any such sites are found case specific mitigation measures will need to be designed.	▪ Construct fence to ensure the live fence is not placed at ground level? ▪ Conduct regular (daily) inspections of the fence line to address any animals that may be affected by the fence. ▪ Conduct a site specific avifaunal walk through.	▪ Daily to monthly record keeping. A register of all faunal sightings indicating date of siting; species affected; position of species (specific or indicative) and other observations	▪ Project Owner and Contractor ▪ ECO ▪ Ornithologist

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	***Frequency***	***Responsibility***
				should be established. ▪ Once-off prior to construction.	
5.12. Increased Electrical Light Pollution (ELP), leading to changes in nocturnal behavioural patterns amongst fauna.	The avoidance of electrical light pollution through prudent positioning of external lighting.	5.12.1. Placement of lighting, particularly security lighting, to avoid excessive influence on surrounding areas. Placement of lighting to be judiciously considered at time of implementation.	▪ Review lighting plans and identify important habitat zones to be avoided.	▪ Prior to the installation of lighting.	▪ Project Owner, Contractor and ECO
C. OPERATIONAL PHASE					
5.13. Vegetation management on site - consideration of redress methods of growth and habitat form around site.	Manage vegetation throughout the site to avoid conflict with operations of the proposed WEF. Management of vegetation at an optimum level of growth and height is required.	5.13.1. Identify protocol for pruning of vegetation and clearance where required. 5.13.2. Identify level of pruning and vegetation management required.	▪ Identify means of pruning and clearance of vegetation. For example, brushcutter, grazing etc.	▪ Ongoing and as required.	▪ Environmental Manager/ECO
5.14. Loss of SSC and their habitats.	Control loss of natural vegetation during the operational phase. Prevent impacts on natural	5.14.1. Unnecessary impacts on surrounding natural vegetation must be avoided. All operational and maintenance vehicles to remain on the roads and no driving off road allowed. No unauthorized persons should be allowed onto the site.	▪ Strict control over the behaviour of operation workers, restricting activities to within demarcated areas for operation. Strict control and proper education of staff to prevent misconduct.	▪ Ongoing and as required	▪ Environmental Manager/ECO

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	***Frequency***	***Responsibility***
	vegetation in sensitive habitats and SSC.	5.14.2. The collection, hunting or harvesting of any plants, any protected trees, fuel wood or animals at the site should be strictly forbidden and the staff educated to prevent this from happening. 5.14.3. Educate personnel and staff members about the biodiversity importance of the area by means of environmental awareness programmes. 5.14.4. Staff must remain within the boundaries of the WEF at all times. The undeveloped portions of the site must be treated as conservation areas.	▪ Strict control over the behaviour of construction workers, restricting activities to within demarcated areas for construction. ▪ Carry out Environmental Awareness Training. ▪ Conduct audits of the signed attendance registers. ▪ Issue fines for non-conformance as appropriate and as specified in the worker's contracts. ▪ Ensure that the awareness raising programmes are implemented.	▪ Daily ▪ Once-off training and ensure all new staff are inducted. ▪ As required ▪ As required during the operational phase.	▪ Facility Manager and Environmental Manager/ECO ▪ Facility Manager ▪ Environmental Manager/ECO
		5.14.5. All hazardous materials should be stored in the appropriate manner to prevent impacts on vegetation. Any accidental chemical, fuel and oil spills that occur at the site should be cleaned up in the appropriate manner as related to the nature of the spill.	▪ Monitor the activities via visual inspections, and record and report any non-compliance.	▪ Daily	▪ Environmental Manager/ECO
		5.14.6. Fires should only be allowed within fire-safe demarcated areas. Open fires must be prohibited. Appropriate fire safety training should also be provided to staff that are to be on site for the duration of the operational phase.	▪ Strict control over the behaviour of construction workers, restricting activities to within demarcated areas. ▪ Ensure fire safety requirements are well understood and respected by workers (by providing basic fire safety training).	▪ Daily	▪ Facility Manager and Environmental Manager/ECO

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	***Frequency***	***Responsibility***
		5.14.7. A storm-water management plan must be implemented during the operational phase. Regular inspections of stormwater infrastructure should be undertaken to ensure that it is kept clear of all debris and weeds.	▪ Verify that the stormwater management plan is being implemented and signed off prior to the commencement of operations. ▪ Undertake regular inspections of the stormwater infrastructure (i.e. by implementing walk through inspections).	▪ Prior to commencement of operations. ▪ Weekly/Monthly	▪ Environmental Manager/ECO ▪ Facility Manager
		5.14.8. Undertake maintenance of rehabilitated areas in accordance with the rehabilitation and landscaping plan.	▪ Monitor topsoil removal and rehabilitation activities, and record and report non-compliance.	▪ Weekly or Monthly	▪ Facility Manager and Environmental Manager/ECO
		5.14.9. Continue with on-going monitoring programme to detect and quantify any alien species that may become established and identify the highly invasive species during the operation phase.	▪ Monitor the presence of alien invasive species on the development site.	▪ Reporting frequency depends on legal compliance framework	▪ Facility Manager and Environmental Manager/ECO
5.15. Impact and loss of fauna as a result of operational activities.	To reduce the loss of and impact on fauna.	5.15.1. Prior to the commencement of the operational phase, the plant manager and the landowner need to reach a decision in terms of the allowance of faunal activities or redress of faunal activities within site. 5.15.2. Identify points of excessive faunal activity and impact on operations. Undertake monitoring of faunal activities within the fenced area of the site and the immediate proximity of the site.	▪ Establish reporting procedure. ▪ Monitor the presence of fauna during the operational phase via visual inspections and site visits. ▪ Carry out Environmental Awareness Training. ▪ Conduct audits of the signed attendance registers. ▪ Issue fines for non-conformance as	▪ Daily ▪ Daily ▪ Once-off training and ensure all new staff are inducted. ▪ As required ▪ As required	▪ Facility Manager and Environmental Manager/ECO ▪ Facility Manager and Environmental Manager/ECO ▪ Facility Manager

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	***Frequency***	***Responsibility***
	Reduce nesting of birds on the facility infrastructure during the operational phase.	5.15.3. Reduction in speed limits in and around site. 5.15.4. No hunting or trapping of animals. 5.15.5. The operational phase EMP must include provision for application to the provincial authority for permits for any necessary nest management.	appropriate and as specified in the worker's contracts. ▪ Nest relocation or removal should be done under permit from the provincial authority.		▪ Environmental Manager/ECO ▪ Environmental Manager/ECO
5.16. Impact and loss of fauna as a result of the fence line and exclusion of fauna from site resulting in ecological change within the site.	To reduce the impact and loss of fauna from site as a result of their exclusion from the area.	5.16.1. Avoidance of damage to infrastructure by faunal activity as well as impact on fauna as a result of the site infrastructure. 5.16.2. Identify impact of burrowing and other faunal activities on the fence line and operations activities. 5.16.3. Undertake the management of faunal intrusion through the fence, including possible mortalities. 5.16.4. Provide critter paths through the fence line to allow species access to site. 5.16.5. Ensure that the live electrical fence wire is not placed at ground level. 5.16.6. Conduct inspections of the fence line to address any animals that may be affected by the fence. 5.16.7. Promote and support faunal presence and activities within the proposed WEF.	▪ Identify where fauna may be affecting operations of site (burrows etc.) Consider redress if necessary. ▪ Conduct regular (daily) inspections of the fence line to address any animals that may be affected by the fence. ▪ Monitor the activities via visual inspections, and record and report any non-compliance.	▪ Daily to monthly record keeping. ▪ A register of all faunal sitings indicating date of siting; species affected; position of species (specific or indicative) and other observations should be established. ▪ Daily	▪ Environmental Manager/ECO and Project Owner ▪ Environmental Manager/ECO and Project Owner ▪ Environmental Manager/ECO and Project Owner

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	***Frequency***	***Responsibility***
5.17. Impact of ELP around the site.	The avoidance of electrical light pollution through prudent positioning of external lighting.	5.17.1. Placement of lighting, particularly security lighting to avoid excessive influence on surrounding areas.	▪ Review lighting plans and identify important habitat zones to be avoided.	▪ Prior to the installation of lighting.	▪ Project Owner and Environmental Manager/ECO
5.18. Faunal and avifaunal road mortality as a result of increased vehicles travelling to and within the site.	Minimise loss of fauna as a result of road mortalities.	5.18.1. The operational personnel and staff should be made aware of the presence of fauna within the proposed project area. The operational personnel and staff must also be made aware of the general speed limits on site and must be alert at all times for potential crossings.	▪ Carry out Environmental Awareness Training. ▪ Conduct audits of the signed attendance registers.	▪ Once-off training and ensure that all new staff are inducted. ▪ Monthly	▪ Facility Manager ▪ Environmental Manager/ECO
		5.18.2. To ensure that animals are not attracted to the site (and potentially resulting in increased road mortality), the waste collection bins and skips should be covered with suitable material, where appropriate, and the offices must be kept clean on a daily basis.	▪ Monitor the activities via visual inspections, and record and report any non-compliance.	▪ Daily	▪ ECO and Contractor
5.19. Impact on avifauna as a result of electrocution.	The reduction in the impact that electrical structures will have on avifauna within the area.	5.19.1. Mitigation is complex at electrical structures since there are many ways in which birds could get electrocuted as the hardware is complex and provides many different potential perches for birds. It is therefore recommended that mitigation be applied reactively once the facility is operational, only if a significant problem is detected.	▪ Monitoring of this infrastructure for bird fatalities should be built into the operational environmental management plan for the facility.	▪ As needed	▪ ECO and contractor

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	***Frequency***	***Responsibility***
D. DECOMMISSIONING PHASE					
5.20. Rehabilitation of flora on site.	Re-vegetation of the disturbed site is aimed at approximating as near as possible the natural vegetative conditions prevailing prior to operation.	5.20.1. All damaged areas shall be rehabilitated upon completion of the contract. 5.20.2. All natural areas must be rehabilitated with species indigenous to the area. Re-seed with locally-sourced seed of indigenous grass species that were recorded on site pre-construction. 5.20.3. Rehabilitation must be executed in such a manner that surface run-off will not cause erosion of disturbed areas.	▪ Conduct a final external audit to confirm that area is rehabilitated to an acceptable level.	▪ Once off	▪ Project Owner with feedback and input from an appropriate specialist.

6. OPEN SPACE MANAGEMENT PLAN

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	*Frequency*	*Responsibility*
A. DESIGN PHASE					
6.1. Loss of vegetation and habitat fragmentation.	Keeping the area cleared of vegetation to a minimum.	6.1.1. Clearing of vegetation should be kept to a minimum and take into consideration the sensitivities on site shown in Appendices A and B of this EMPr.	▪ Ensure that no unnecessary areas are cleared of vegetation and that the project is constructed within its proposed footprint area.	▪ Once-off during design	▪ Project Owner
6.2. Impacts due to establishment of alien invasive plants.	Ensure the appropriate removal of alien invasive vegetation from the proposed project area and prevent the establishment and spread of alien invasive plants due to the project activities.	6.2.1. Ensure compliance with relevant Environmental Specifications for the control and removal of alien invasive plant species. 6.2.2. Appoint a specialist or contact relevant authorities to seek guidance on the removal of the alien vegetation on site. 6.2.3. Compile and finalise an alien weed eradication programme.	▪ Appoint a suitable specialist/ Contractor or contact the relevant authorities to seek guidance on the removal of the planted alien invasive species. ▪ Appoint a suitable specialist to compile an alien invasive vegetation eradication plan. ▪ Ensure that this is taken into consideration during the planning and design phase by reviewing signed minutes of meetings or signed reports.	▪ Once-off during the design phase. ▪ Once-off during the design phase. ▪ Once-off during the design phase.	▪ Project Owner ▪ Project Owner ▪ ECO
6.3. Permanent barriers to animal movement and habitat fragmentation.	The reduction in the impact that barrier will have on animal movement within the area.	6.3.1. Provide critter paths through the fence line to allow species access to site.	▪ Ensure that this is taken into consideration during the planning and design phase.	▪ Once-off during the planning and design phase	▪ Project Owner
		6.3.2. All remaining areas that are not impacted upon by the proposed development footprint should remain unfenced to allow for movement corridors between the	▪ Ensure that this is taken into consideration during the planning and design phase by reviewing signed minutes of meetings or signed reports.	▪ Once-off during the planning and design phase	▪ Project Owner

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	***Frequency***	***Responsibility***
		remainder of the farm.			
B. CONSTRUCTION PHASE					
6.4. Permanent barriers to animal movement and habitat fragmentation.	The reduction in the impact that barrier will have on animal movement within the area.	6.4.1. Fencing should allow for the passage of small and medium sized mammals and all forms of mesh fencing should be avoided.	▪ This should be monitored by the ECO to determine whether this is effective.	▪ Daily	▪ ECO and Contractor
6.5. Loss of vegetation and habitat fragmentation.	Keeping the area cleared of vegetation to a minimum.	6.5.1. Clearing of vegetation should be kept to a minimum, keeping the width and length of the earthworks to a minimum.	▪ Monitor activities and record and report non-compliance.	▪ Daily	▪ ECO and Contractor
C. OPERATIONAL PHASE					
6.6. Increased risk of alien plant invasion.	Ensure that the site is kept free from alien invasive species.	6.6.1. Continuously monitor the site and remove alien invasive species that are found.	▪ Monitor the presence of alien invasive species on the development site.	▪ Reporting frequency depends on legal compliance framework	▪ Facility Manager and Environmental Manager/ECO
6.7. Increased animal road mortality and mortality to birds and bats during the operation of the WEF,	Minimise loss of fauna as a result of road mortalities and operation of the WEF.	6.7.1. Create awareness during staff induction programmes. Staff must be made aware of the general speed limits as well as the potential animals that may cross and how to react in these situations.	▪ Conduct staff awareness training programmes.	▪ Once-off training and ensure all new staff are inducted.	▪ Facility Manager and Environmental Manager
		6.7.2. The relevant requirements and methodology for post construction bird and bat monitoring in terms of the applicable and most recent Best practice Guideline at the time, e.g. “Birds/Bats and Wind Energy,	▪ Ensure that the relevant requirements for the post-construction bird monitoring in terms of the applicable Birds/Bats and Wind Energy Best	▪ As prescribed in the relevant Guidelines	▪ Project Owner

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	***Frequency***	***Responsibility***
		Best Practice Guidelines" must be adhered to.	Practice Guidelines are adhered to.		
		6.7.3. Any avian mortality or injury at the facility should be duly recorded and reported.	▪ Record any bird fatalities and undertake the necessary reporting to relevant authority.	▪ When required	▪ Project Owner
D. DECOMMISSIONING PHASE					
6.8. No specific impacts are associated with the decommissioning phase other than those from the operational phase that will still be relevant for the duration of the decommissioning phase due to on-going occupation of the area.	To manage impacts on the surrounding environment during the operational phase.	6.8.1. Disturbed and transformed areas should be contoured to approximate naturally occurring slopes to avoid lines and forms that will contrast with the existing landscapes	▪ Final external audit of area to confirm that area is rehabilitated to an acceptable level	▪ Once off	▪ Project Owner
		6.8.2. Stockpiled topsoil should be reapplied to disturbed areas and these areas should be re-vegetated using a mix of native species in such a way that the areas will form as little contrast in form, line, colour and texture with the surrounding undisturbed landscape.	▪ Final external audit of area to confirm that area is rehabilitated to an acceptable level	▪ Once off	▪ Project Owner
		6.8.3. Edges of re-vegetated areas should be feathered to reduce form and line contrasts with surrounding undisturbed landscape.	▪ Final external audit of area to confirm that area is rehabilitated to an acceptable level	▪ Once off	▪ Project Owner

7. TRAFFIC MANAGEMENT PLAN INCLUDING TRANSPORTATION PLAN

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	*Frequency*	*Responsibility*
A. DESIGN PHASE					
7.1. Increased traffic generation.	Manage impact that additional traffic generation will have on road network.	7.1.1. If abnormal loads need to be transported by road to the site, a permit needs to be obtained from the Provincial Government Northern Cape (PGNC) Department of Public Works, Roads and Transport.	▪ Ensure that the permits are applied for and obtained prior to commencement. ▪ Verify that this has been undertaken by reviewing approved permits.	▪ Once-off during the design phase ▪ Once-off during the design phase.	▪ Contractor ▪ ECO
		7.1.2. Provide a Transport Traffic Plan to SANRAL (if required).	▪ Ensure that the plan is compiled and submitted prior to commencement. ▪ Verify that this has been undertaken by reviewing approved plans.	▪ Once-off during the design phase ▪ Once-off during the design phase.	▪ Contractor ▪ ECO
7.2. Accelerated degradation of road structure due to construction and operational traffic.	Limit the deterioration of the road condition due to construction and operational traffic.	7.2.1. A Road Maintenance Plan should be developed if necessary, including but not limited to, grading, dust suppressant mechanisms, drainage, signage, and speed limits.	▪ Ensure that the plan is compiled and submitted prior to commencement. ▪ Verify that this has been undertaken by reviewing approved plans.	▪ Once-off during the design phase ▪ Once-off during the design phase.	▪ Contractor ▪ ECO

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	*Frequency*	*Responsibility*
B. CONSTRUCTION PHASE					
7.3. Increased traffic generation during the construction phase resulting in a reduction of road based level of service	Reduce the amount of road based traffic during the construction phase.	7.3.1. Well maintained vehicles should be used together with well-trained drivers during the construction phase. Vehicle maintenance and driver competency should be monitored. Proof of driver competency as well as the vehicle checks should be verified and undertaken to ensure that vehicles are roadworthy and hence, do not pose a safety risk. The Contractors must ensure that construction vehicles are roadworthy, properly serviced and maintained, and respect the vehicle safety standards implemented by the Project Owner.	▪ Carry out random checks of driver licences and conduct random visual inspections of construction vehicles for roadworthiness.	▪ Random visual inspection of vehicles weekly.	▪ Contractor
		7.3.2. During the construction phase, suitable parking areas should be designated for trucks and vehicles.	▪ Monitor the placement of the designated parking area for trucks and vehicles via visual inspections and record and report any non-compliance.	▪ Once-off prior to construction and as required during the construction phase.	▪ Project Owner and ECO
		7.3.3. The use of public transport (buses and/or minibus taxis) to convey construction personnel to the site should be encouraged If possible.	▪ Contractor may record arrival and departure times as well as number of workers using minibuses.	▪ Once a month on a randomly selected day.	▪ Contractor
		7.3.4. It is recommended that vehicles are not overloaded during the construction phase in order to reduce impacts on the road	▪ Perform visual inspection of vehicles during the construction phase.	▪ Random visual inspection of vehicles weekly.	▪ Contractor

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	***Frequency***	***Responsibility***
		structures, particularly the access roads leading to the site. Random visual inspection of vehicles should be undertaken in order to monitor for overloading. The inspections should also verify if the trucks are covered with appropriate material (such as tarpaulin) if and where possible.			
7.4. Increased level of road accidents (involving pedestrians, animals, other motorists on the surrounding tarred/ gravel road network) due to increased traffic during construction.	Minimise the impact of the construction activities on the local traffic and avoid accidents with pedestrians, animals and other drivers on the surrounding tarred/ gravel roads. Reduce number of road accidents due to increased traffic during construction.	7.4.1. Well maintained vehicles should be used together with well-trained drivers during the construction phase. Vehicle maintenance and driver competency should be monitored. Proof of driver competency as well as the vehicle checks should be verified and undertaken to ensure that vehicles are roadworthy and hence, do not pose a safety risk. The Contractors must ensure that construction vehicles are roadworthy, properly serviced and maintained, and respect the vehicle safety standards implemented by the Project Owner.	▪ Carry out random checks of driver licences and conduct random visual inspections of construction vehicles for roadworthiness.	▪ Random visual inspection of vehicles weekly.	▪ Contractor
		7.4.2. Road kill monitoring programme (inclusive of wildlife collisions record keeping) should be established	▪ Appropriate monitoring should be undertaken	▪ Weekly	▪ Contractor and ECO
		7.4.3. Adhere to all speed limits applicable to all roads used.	▪ Ensure that speed limits are adhered to. ▪ Carry out random visual inspections to verify speed limits	▪ Daily ▪ Random during the construction phase.	▪ Contractor and ECO ▪ ECO

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	***Frequency***	***Responsibility***
			and general awareness of vehicle drivers.		
7.5. Accelerated degradation of road structure due to construction traffic.	Limit the deterioration of the road condition due to construction traffic.	7.5.1. Construction activities will have a higher impact than the normal road activity and therefore the main access roads to site should be inspected on a weekly basis for structural damage.	▪ Ensure that the main access road to site maintains current condition through photographic surveys and monitoring.	▪ Weekly	▪ Contractor and ECO
		7.5.2. It is recommended that vehicles are not overloaded during the construction phase in order to reduce impacts on the road structures, particularly the access roads leading to the site. Random visual inspection of vehicles should be undertaken in order to monitor for overloading. The inspections should also verify if the trucks are covered with appropriate material (such as tarpaulin) if and where possible.	▪ Perform visual inspection of vehicles during the construction phase.	▪ Random visual inspection of vehicles weekly.	▪ Contractor
		7.5.3. Make provision for the repairing of subgrade deterioration (i.e. pot holes, dust holes) that could possibly result due to loading of heavy construction vehicles as required.	▪ Make provision for repairs required to road	▪ Ongoing	▪ Contractor and ECO
7.6. Impact on air quality due to dust generation, noise and exhaust emissions	Limit the release of noise, pollutants and dust emissions	7.6.1. Implement management strategies for dust generation e.g.apply dust suppressant on the exposed areas and stockpiles as relevant.	▪ Ensure dust management measures are in place to adequately decrease the generation of dust.	▪ On-going	▪ Contractor and ECO

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	***Frequency***	***Responsibility***
from construction vehicles and equipment.		7.6.2. Construction vehicles must have their lights on at all times. Lights to be properly set to not blind train drivers who may then miss important signal, e.g stop signal (Signal Passed At Danger (SPAD).	▪ Ensure lights are on and properly set.	▪ On-going	▪ Contractor and ECO
		7.6.3. Postpone or reduce dust-generating activities during periods with strong wind. Earthworks may need to be rescheduled or the frequency of application of dust control/suppressant increased.	▪ Ensure dust management measures are in place to decrease the dust generated	▪ On-going	▪ Contractor and ECO
		7.6.4. Avoid using old and unmaintained construction equipment (which generate high sound levels) and ensure equipment is well maintained.	▪ Manage the air pollutants from construction vehicles through checking the condition of vehicles	▪ On-going	▪ Contractor and ECO
7.7. Soil contamination from leakage from hazardous materials (during transport and on-site construction).	Avoid soil contamination during transportation and construction of batteries on site.	7.7.1. The transport vehicle should be identified with symbols: the vehicle, must be correctly identified, following international conventions, symbols and colours, identifying the fact that corrosive and hazardous products are being transported.	▪ Check that trucks transporting that corrosive and hazardous materials to site are appropriately identified with the required symbols.	▪ On-going	▪ Contractor and ECO
		7.7.2. PPE should be provided for the transport team and they should be trained in the use of the equipment, in case of any accident.	▪ Provide PPE to transport team.	▪ On-going	▪ Contractor and ECO

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	*Frequency*	*Responsibility*
C. OPERATIONAL PHASE					
7.8. Increased level of road accidents (involving pedestrians, animals, other motorists on the surrounding tarred/ gravel road network) due to increased traffic during the operational phase.	Minimise the impact of the operational activities on the local traffic and avoid accidents with pedestrians, animals and other drivers on the surrounding tarred/ gravel roads. Reduce number of road accidents due to increased traffic during the operational phase.	7.8.1. Well maintained vehicles should be used together with well-trained drivers during the operational phase, as required. Vehicle maintenance and driver competency should be monitored. Proof of driver competency as well as the vehicle checks should be verified and undertaken to ensure that vehicles are roadworthy and hence, do not pose a safety risk. Vehicles must be roadworthy, properly serviced and maintained.	▪ Carry out random checks of driver licences and conduct random visual inspections of vehicles for roadworthiness.	▪ Random visual inspection of vehicles weekly.	▪ Facility Manager
		7.8.2. Adhere to all speed limits applicable to all roads used.	▪ Ensure that speed limits are adhered to. ▪ Carry out random visual inspections to verify speed limits and general awareness of vehicle drivers.	▪ Daily ▪ Random during the operational phase.	▪ Facility Manager ▪ Facility Manager
		7.8.3. The use of public transport (buses and/or minibus taxis) or carpooling to convey operational personnel to the site should be encouraged.	▪ Monitor the requirements	▪ On-going	▪ Facility Manager
		7.8.4. Adhere to requirements made within Transport Traffic Plan.	▪ Monitor the requirements as set out in the Plan as ensure that it is adhered to	▪ On-going	▪ Facility Manager
		7.8.5. Limit access to the site to personnel.	▪ Maintain a register of visitors and staff that enter site and restrict	▪ On-going	▪ Facility

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	***Frequency***	***Responsibility***
			access to personnel.		Manager
7.9. Accelerated degradation of road structure due to operational traffic.	Limit the deterioration of the road condition due to operational phase traffic.	7.9.1. The main access roads to site should be inspected on a weekly basis for structural damage.	▪ Ensure that the main access road to site maintains current condition through photographic surveys and monitoring.	▪ Weekly	▪ Facility Manager
		7.9.2. Implement management strategies for dust generation e.g. apply dust suppressant to exposed areas and stockpiles, as relevant.	▪ Ensure dust management measures are in place to adequately decrease the generation of dust.	▪ On-going	▪ Facility Manager
		7.9.3. It is recommended that vehicles are not overloaded during the operational phase (where applicable) in order to reduce impacts on the road structures, particularly the access roads leading to the site. Random visual inspection of vehicles should be undertaken in order to monitor for overloading (where applicable).	▪ Perform visual inspection of vehicles during the construction phase.	▪ Random visual inspection of vehicles weekly.	▪ Facility Manager
		7.9.4. Make provision for the repairing of subgrade deterioration (i.e. pot holes, dust holes) that could possibly result due to overloading of vehicles (where applicable).	▪ Make provision for repairs required to road.	▪ Ongoing	▪ Project Owner
		7.9.5. Implement requirements of the Road Maintenance Plan.	▪ Adhere to requirements of the Road Maintenance Plan.	▪ On-going	▪ Facility Manager

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	***Frequency***	***Responsibility***
D. DECOMMISSIONING PHASE					
7.10. Ensure that the construction mitigation and management measures are adhered to during the decommissioning phase.					

8. STORM WATER MANAGEMENT PLAN

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	*Frequency*	*Responsibility*
A. DESIGN PHASE					
8.1. Impact of the project if a detailed storm water management plan is not correctly prepared and implemented.	To limit the effect ofuncontrolled storm water run-off from developed areas onto natural areas.	8.1.1. Prepare a detailed stormwater management plan outlining appropriate treatment measures to address runoff from disturbed portions of the site, such that they do not: ▪ result in concentrated flows into natural watercourses i.e. provision should be made for temporary or permanent measures that allow for attenuation, control of velocities and capturing of sediment upstream of natural water courses; ▪ result in any necessity for concrete or other lining of natural water courses to protect them from concentrated flows of the development; ▪ divert flows out of their natural flow pathways, thus depriving downstream watercourses of water.	▪ Check compliance with specified conditions. ▪ Ensure that this is taken into consideration during the planning and design phase by reviewing signed minutes of meetings or signed reports.	▪ Once-off during design followed by regular control. ▪ During the design phase.	▪ Contractor ▪ ECO
B. CONSTRUCTION PHASE					
8.2. Diversion and impedance surface water flows –	Prevent interference with natural run-off patterns, diverting flows and increasing	8.2.1. The appointed Contractor should compile a Method Statement for Stormwater Management during the construction	▪ Compile a Method Statement for Stormwater Management during the construction phase.	▪ Prior to the construction phase. ▪ Once-off prior to	▪ Contractor ▪ ECO

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	***Frequency***	***Responsibility***
Changes to the hydrological regime and increased potential for erosion. Diversion and increased velocity of surface water flows – reduction in permeable surfaces.	the velocity of surface water flows.	phase.	▪ Inspect and verify if a Method Statement for Stormwater Management has been compiled by the Contractor via audits prior to the commencement of the construction phase.	the commencement of the construction phase.	
		8.2.2. Stormwater and any run-off generated by the hard surfaces should be discharged into retention swales or areas with rock rip-rap (or similar). These could be used to enhance the sense of place, if they are planted with indigenous vegetation.	▪ Check compliance with specified conditions of the Stormwater Management Plan and Method Statement.	▪ Weekly or bi-weekly	▪ ECO
		8.2.3. Erosion and sedimentation into water bodies must be minimised through the effective stabilisation (gabions and Reno mattresses or similar) and the re-vegetation of any disturbed riverbanks.	▪ Check compliance with specified conditions of the Stormwater Management Plan and Method Statement.	▪ Weekly or Bi-weekly	▪ ECO
		8.2.4. Place energy dissipation structures in a manner that allows the management of flows prior to being discharged into the natural environment, thus not only preventing erosion, but supporting the maintenance of natural base flows within these systems i.e. hydrological regime (water quantity and quality) is maintained.	▪ Check compliance with specified conditions of the Stormwater Management Plan and Method Statement.	▪ Weekly or bi-weekly	▪ ECO
		8.2.5. Reinforce soil slopes to minimise erosion during rehabilitation (as needed, and once construction in a specific area has been	▪ Monitor activities and record and report non-compliance.	▪ As needed during the construction phase.	▪ ECO

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	***Frequency***	***Responsibility***
		completed).			
		8.2.6. Any irrigation of the development area for landscaping or dust control purposes should be controlled, such that it does not result in any measurable increase in moisture being passed into natural drainage lines.	▪ Check compliance with specified conditions of the Stormwater Management Plan and Method Statement.	▪ Weekly or bi-weekly	▪ ECO
		8.2.7. Drainage along the sides of the roads should be designed so that it does not result in concentrated flows into watercourses.	▪ Check compliance with specified conditions of the Stormwater Management Plan and Method Statement.	▪ Weekly or bi-weekly	▪ ECO
		8.2.8. Perform periodic inspections and maintenance of soil erosion measures and stormwater control structures.	▪ Monitor activities and record and report non-compliance.	▪ As needed during the construction phase.	▪ ECO
8.3. Pollution of the surrounding environment as a result of the contamination of stormwater. Contamination could result from the spillage of chemicals, oils, fuels, sewage, solid waste, litter etc.	To prevent contaminated stormwater from entering into and adversely impacting on freshwater ecosystems and reducing the water quality. To reduce sedimentation of nearby water systems. To apply best practice principles in managing risks to	8.3.1. The appointed Contractor should compile a Method Statement for Stormwater Management during the construction phase.	▪ Compile a Method Statement for Stormwater Management during the construction phase. ▪ Inspect and verify if a Method Statement for Stormwater Management has been compiled by the Contractor via audits prior to the commencement of the construction phase.	▪ Prior to the construction phase. ▪ Once-off prior to the commencement of the construction phase.	▪ Contractor ▪ ECO
		8.3.2. Provide secure storage for fuel, oil, chemicals and other waste materials to prevent contamination of stormwater runoff. Fuels and chemicals (i.e. any	▪ Monitor the storage and handling of dangerous goods and hazardous materials on site via site audits and record non-	▪ Weekly	▪ ECO

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	***Frequency***	***Responsibility***
	storm water pollution.	hazardous materials and dangerous goods) used during the construction phase must be stored safely on site and in bunded areas. Fuel and chemical storage containers must be inspected to ensure that any leaks are detected early.	compliance and incidents. Monitor if spillages have taken place and if they are removed correctly.		
		8.3.3. All stockpiles must be protected from erosion and stored on flat areas where run-off will be minimised. Erosion and sedimentation into water bodies must be minimised through effective stabilisation. No stockpiling should take place within a watercourse.	▪ Monitor the excavations and stockpiling process throughout the construction phase via visual site inspections. Record non-compliance and incidents.	▪ Daily	▪ ECO
		8.3.4. Littering and contamination of water resources during construction must be prevented by effective construction camp management.	▪ Monitor via site audits and record non-compliance and incidents (i.e. by implementing walk through inspections).	▪ Weekly	▪ Contractor and ECO
		8.3.5. Emergency plans must be in place to deal with potential spillages (especially those leading to any watercourses).	▪ Check compliance with specified conditions of the Stormwater Management Plan and Method Statement.	▪ Weekly or Bi-weekly	▪ ECO
		8.3.6. Erosion and sedimentation into water bodies must be minimised through the effective stabilisation (gabions and Reno mattresses or similar) and the re-vegetation of any disturbed riverbanks.	▪ Check compliance with specified conditions of the Stormwater Management Plan and Method Statement.	▪ Weekly or Bi-weekly	▪ ECO
		8.3.7. Ensure that the temporary site camp and ablution facilities are established at least	▪ Monitor the placement of the site camp via visual inspections, and	▪ Once-off prior to construction and as	▪ ECO

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	***Frequency***	***Responsibility***
		32 m away from the banks of drainage lines.	record and report any non-compliance.	required during the construction phase.	
		8.3.8. Ensure that there is no ad-hoc crossing of channels by vehicles during the construction phase. Access routes across the site should be strictly demarcated and selected with a view to minimise impacts on drainage lines.	▪ Check compliance with specified conditions of the Stormwater Management Plan and Method Statement.	▪ Weekly or Bi-weekly	▪ ECO
		8.3.9. Ensure that no waste materials or sediments are left in the surrounding drainage lines (as a result of the construction).	▪ Check compliance with specified conditions of the Stormwater Management Plan and Method Statement.	▪ Weekly or Bi-weekly	▪ ECO
		8.3.10. Regular inspections of stormwater infrastructure should be undertaken to ensure that it is kept clear of all debris and weeds.	▪ Monitor via site audits and record non-compliance and incidents (i.e. by implementing walk through inspections).	▪ Weekly	▪ Contractor and ECO
C. OPERATIONAL PHASE					
8.4. Stormwater discharge into the surrounding environment during operations.	To minimise the contamination of stormwater by uncontrolled release of contaminated or grey water. To protect soil resources and prevent soil erosion.	8.4.1. An operational phase Stormwater Management Plan should be designed and implemented, with a view to prevent the passage of concentrated flows from hardened surfaces and onto natural areas.	▪ Compile a Stormwater Management Plan for the operational phase. ▪ Inspect and verify if a Stormwater Management Plan has been compiled prior to the commencement of the operational phase.	▪ Continuously during operational phase. ▪ Once-off prior to the commencement of the operational phase.	▪ Project Owner
		8.4.2. All release points into the natural	▪ Monitor activities and record and	▪ On-going	▪ ECO

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	***Frequency***	***Responsibility***
		environment must have appropriate energy dissipaters to minimise scouring/erosion.	report non-compliance. ▪ Monitor the placement of energy dissipaters via visual inspections, and record and report any non-compliance.		
		8.4.3. Regular inspections of stormwater infrastructure should be undertaken to ensure that it is kept clear of all debris and weeds.	▪ Undertake regular inspections of the stormwater infrastructure (i.e. by implementing walk through inspections).	▪ Weekly/Monthly	▪ ECO and O&M team
D. DECOMMISSIONING PHASE					
8.5. The proposed WEF would be expected to run for a minimum period of 20 years, after which it would either be decommissioned, alternatively upgraded or an application submitted to obtain a new license. Should the plant be decommissioned, the areas occupied by the wind turbines and associated infrastructure would be rehabilitated to its original (pre-development) state. In the (unlikely) event that none of the mitigation measures outlined for the construction and operational phases of the proposed project had been implemented, the period of time for recovery to take place would be extended. In the event that decommissioning occurs, and assuming implementation of mitigation measures, the hydrological regime should fully recover over time to present day conditions.					

9. EROSION MANAGEMENT PLAN

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	*Frequency*	*Responsibility*
A. CONSTRUCTION PHASE					
9.1. Increased wind erosion and resultant deposition of dust.	Prevent wind erosion and resultant deposition of dust on surrounding indigenous vegetation.	9.1.1. Sand, stone and cement should be stored in demarcated areas, and covered or sealed to prevent wind erosion and resultant deposition of dust on the surrounding indigenous vegetation.	▪ Undertake regular inspections of the via site audits to verify that sand, stone and cement are stored and handled as instructed.	▪ Daily	▪ ECO and Contractor
		9.1.2. During construction, efforts should be made to retain as much natural vegetation as possible on the site, to reduce disturbed areas and maintain plant cover, thus reducing erosion risks.	▪ Monitor activities via site inspections and record and report non-compliance.	▪ Daily	▪ ECO and Contractor
		9.1.3. All stockpiles must be protected from erosion and stored on flat areas where run-off will be minimised. Erosion and sedimentation into water bodies must be minimised through effective stabilisation.	▪ Monitor the stockpiling process throughout the construction phase via visual site inspections. Record non-compliance and incidents.	▪ Daily	▪ ECO
9.2. Excessive loss of natural vegetation within the development footprint area.	Prevent loss of natural vegetation through erosion.	9.2.1. Vegetation clearing during construction must be restricted to the footprint of the proposed project components and planned infrastructure only. It should be phased to ensure that the minimum area of soil is exposed to potential erosion at any one time.	▪ Monitor vegetation clearing throughout the construction phase via visual site inspections. Record non-compliance and incidents. ▪ Undertake regular monitoring for erosion to ensure is reduced and	▪ Daily ▪ Daily	▪ ECO and Contractor ▪ ECO

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	***Frequency***	***Responsibility***
			rectified as soon as possible.		
		9.2.2. Stockpile the shallow topsoil layer separately from the subsoil layers (especially if the excavation exceeds 0.5 m). Reinstate the topsoil layers (containing seed and vegetative material) when construction is complete to allow the plants to rapidly re-colonise the bare soil areas.	▪ Rehabilitate disturbed areas and monitor the presence of alien invasive species on site.	▪ Daily (stockpiling) and once-off for the reinstatement of the top soil layer	▪ ECO and Contractor
		9.2.3. Re-seed with locally-sourced seed of indigenous grass species that were recorded on site pre-construction.	▪ Re-seed with seeds of indigenous grass species.	▪ Once off	▪ ECO with advice from specialist (if required)
		9.2.4. Topsoil stockpiles not used in three months after stripping must be seeded to prevent dust and erosion.	▪ Regular monitoring for erosion to ensure that no erosion problems are occurring at the site. All erosion problems observed should be rectified as soon as possible.	▪ Weekly initially and thereafter monthly	▪ ECO and Contractor
9.3. Erosion of surface soils, rilling and gulleys due to water erosion.	Measures to be implemented that address or avoid the loss of surface soils and exacerbates gulley formation.	9.3.1. Identify cause of erosion and possible means of redress (i.e. implement erosion control measures, where applicable), such as the use of geofabric, stone gabions and re-vegetation or similar measures. 9.3.2. Erosion control measures should seek to reduce surface flow velocity and allow for settlement on site of silt laden	▪ Monitor the erosion on site during construction, as well as the implementation and effectiveness of erosion control on site (such as the use of geofabric, stone gabions and re-vegetation or similar measures).	▪ Ongoing and as required during erosion events.	▪ ECO and Project Owner

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	***Frequency***	***Responsibility***
		surface waters. Washaways, excessive loss of soils and gulleys can be considered to be indicative of excessive erosion.			
B. OPERATIONAL PHASE					
9.4. Excessive loss of natural vegetation in the development footprint area and resulting impacts on SSC, faunal habitat and habitat fragmentation.	Prevent loss of natural vegetation and minimise habitat fragmentation and the loss of connectivity as a result of erosion.	9.4.1. To prevent erosion, indigenous grasses that seed themselves should (where possible) be left to form a ground cover and kept short.	▪ ECO to advise on type seed to be used.	▪ Prior to re-vegetation.	▪ Project Owner
		9.4.2. The use of silt fences, sand bags or other suitable methods must be implemented in areas that are susceptible to erosion. Other erosion control measures that can be implemented are as follows: 1) Brush packing with cleared vegetation, 2) Planting of vegetation, 3) Hydro seeding/hand sowing. All erosion control mechanisms need to be regularly maintained.	▪ Monitor efficiency of erosion control measures.	▪ Weekly or monthly	▪ Project Owner
		9.4.3. Conduct regular monitoring for erosion to ensure that no erosion problems are occurring at the site as a result of the roads and other infrastructure. Ensure that all erosion problems are rectified as soon as possible.	▪ Undertake regular monitoring for erosion to ensure is reduced and rectified as soon as possible.	▪ Monthly	▪ Project Owner

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	***Frequency***	***Responsibility***
9.5. Increased water erosion as a result of run-off water from hardened surfaces.	Manage run-off water to prevent down slope water erosion.	9.5.1. Implement an effective system of run-off control, where it is required, that collects and safely disseminates run-off water from all hardened surfaces and prevents potential down slope erosion.	▪ Include periodic site inspections in environmental performance reporting that inspects the effectiveness and integrity of the run-off control system and specifically records occurrence or non-occurrence of any erosion on site or downstream. Corrective action must be implemented to the run-off control system in the event of any erosion occurring.	▪ Monthly	▪ Project Owner
C. DECOMMISSIONING PHASE					
9.6. No specific impacts are associated with the decommissioning phase other than those from the operational phase that will still be relevant for the duration of the decommissioning phase due to on-going occupation of the area. Rehabilitation must be executed in such a manner that surface run-off will not cause erosion of disturbed areas. Monitoring: Final external audit of area to confirm that area is rehabilitated to an acceptable level (once off event to be conducted by ECO).					

10. HAZARDOUS SUBSTANCES LEAKAGE OR SPILLAGE MONITORING SYSTEM

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	*Frequency*	*Responsibility*
A. CONSTRUCTION PHASE					
10.1. Contamination of soil and risk of damage to vegetation and/or fauna through spillage of concrete and cement.	To control concrete and cement batching activities in order to reduce spillages and resulting contamination of soil, groundwater and the vegetation and/or fauna.	10.1.1. If any concrete mixing takes placed on site, this must be carried out in a clearly marked, designated area at the site camp on an impermeable surface (such as on boards or plastic sheeting and/or within a bunded area with an impermeable surface).	▪ Monitor the handling and storage of sand, stone and cement as instructed.	▪ Daily	▪ Project Owner, Contractor and ECO
		10.1.2. Bagged cement must be stored in an appropriate facility and at least 10 m away from any water courses, gullies and drains.	▪ Monitor the handling and storage of sand, stone and cement as instructed.	▪ Daily	▪ Project Owner, Contractor and ECO
		10.1.3. A washout facility must be provided for washing of concrete associated equipment. Water used for washing must be restricted.	▪ Monitor the handling and storage of sand, stone and cement as instructed.	▪ Daily	▪ Project Owner, Contractor and ECO
		10.1.4. Hardened concrete from the washout facility or concrete mixer can either be reused or disposed of at an appropriate licensed disposal facility. Proof of disposal (i.e. waste disposal slips or waybills) should be retained on file for auditing purposes.	▪ Monitor the handling and storage of sand, stone and cement as instructed. ▪ Monitor waste disposal slips and waybills via site audits and record non-compliance and incidents.	▪ Daily ▪ Monthly	▪ Project Owner, Contractor and ECO ▪ ECO

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	***Frequency***	***Responsibility***
		10.1.5. Empty cement bags must be secured with adequate binding material if these will be temporarily stored on site. Empty cement bags must be collected from the construction area at the end of every day. Sand and aggregates containing cement must be kept damp to prevent the generation of dust.	▪ Monitor the handling and storage of sand, stone and cement as instructed.	▪ Daily	▪ Project Owner, Contractor and ECO
		10.1.6. Any excess sand, stone and cement must be removed from site at the completion of the construction period and disposed at a licensed waste disposal facility. Proof of disposal (i.e. waste disposal slips or waybills) should be retained on file for auditing purposes.	▪ Monitor the handling and storage of sand, stone and cement as instructed. ▪ Monitor waste disposal slips and waybills via site audits and record non-compliance and incidents.	▪ Daily ▪ Monthly	▪ Project Owner, Contractor and ECO ▪ ECO
10.2. Contamination of soil and risk of damage to vegetation and/or fauna through spillage of fuels and oils.	To control and eliminate fuel and oil spillages which may result in soil contamination and damage to vegetation and/or fauna.	10.2.1. Ensure that adequate containment structures are provided for the temporary storage of liquid dangerous goods and hazardous materials on site (such as chemicals, oil, fuel, hydraulic fluids, lubricating oils etc.). Appropriate bund areas must be provided for the storage of these materials at the site camp. Bund areas should contain an impervious surface in order to prevent spillages from entering the ground. Bund areas should have a capacity of 110 % of the volume of the largest tank in the bund (tanks include storage of fuel/diesel).	▪ Monitor the storage and handling of dangerous goods and hazardous materials on site via site audits and record non-compliance and incidents.	▪ Weekly	▪ Contractor and ECO

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	***Frequency***	***Responsibility***
		10.2.2. Monitor and inspect construction equipment and vehicles to ensure that no fuel spillage takes place. Ensure that drip trays are provided for construction equipment and vehicles as required.	▪ Monitor the construction equipment and vehicles and monitor the occurrence of spills and the management process thereof. ▪ Record all spills and lessons learnt.	▪ Daily ▪ During spill events	▪ Contractor and ECO ▪ ECO
		10.2.3. Contractor to compile a Method Statement for refuelling activities under normal and emergency situations. If on-site servicing and refuelling is required in emergency situations, a designated area must be created at the construction site camp for this purpose. Drip trays or similar impervious materials must be used during these procedures.	▪ Verify if a Method Statement is compiled by reviewing approved and signed off reports. ▪ Monitor the refuelling/ servicing process and record the occurrence of any spillages.	▪ Once-off prior to commencement of construction. ▪ During emergency refuelling and servicing activities.	▪ ECO ▪ ECO
		10.2.4. Spilled fuel, oil or grease must be retrieved and contaminated soil removed, cleaned and replaced.	▪ Monitor the handling and storage of fuels and oils via site audits and monitor if spillages have taken place and if so, are removed correctly. Monitor waste disposal slips and waybills via site audits and record non-compliance and incidents.	▪ Daily (or during spills)	▪ Contractor and ECO

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	***Frequency***	***Responsibility***
		10.2.5. Contaminated soil to be collected by the Contractor (under observation of the ECO) and disposed of at a registered waste facility designated for this purpose. Proof of disposal (i.e. waste disposal slips or waybills) should be retained on file for auditing purposes.	▪ Monitor the correct removal of contaminated soil. Monitor waste disposal slips and waybills via site audits and record non-compliance and incidents.	▪ Daily (or during spills)	▪ Contractor and ECO
		10.2.6. A Spill Response Method Statement must be compiled by the Contractor for the construction phase in order to manage potential spill events.	▪ Compile a Spill Response Method Statement. ▪ Audit signed and approved Spill Response Method Statement.	▪ Once-off (and thereafter updated as required during the construction phase). ▪ Once-off (and thereafter as required during the construction phase).	▪ Contractor and Project Owner ▪ ECO
		10.2.7. The Contractor must ensure that adequate spill containment and clean-up equipment are provided on site for use during spill events.	▪ Monitor via site audits and record incidents and non-compliance.	▪ Daily/Weekly	▪ ECO and Contractor
		10.2.8. Portable bioremediation kit (to remedy chemical spills) is to be held on site and used as required.	▪ Ensure that a well-maintained portable bioremediation kit is available on site and that construction personnel and contractors are	▪ Daily	▪ Contractor and ECO

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	***Frequency***	***Responsibility***
			aware of its location and instructions		
		10.2.9. In case of a spillage of hazardous chemicals where contamination of soil occurs, depending on the degree and level of contamination, excavation and removal to a hazardous waste disposal facility could be necessary. If the spillage is widespread and the soil is considered to be significantly contaminated, a specialist will need to be immediately appointed to address the spillage. This will usually entail the collection of samples of the contaminated soil followed by analysis in terms of the 2014 National Norms and Standards for the Remediation of Contaminated Land and Soil Quality (i.e. GN 331). If the soil is determined to be significantly contaminated, then compliance with Part 8 of the NEMWA should be achieved by the Applicant, including notifying the Minister of Environmental Affairs of the significant contamination.	▪ Ensure that a suitably qualified specialist is appointed to collect and analyse the contaminated soil samples in terms of the 2014 Norms and Standards (i.e. GN 331) in order to determine if the soil is significantly contaminated or not. ▪ If the contaminated soil is considered to be significantly contaminated, then compliance with Part 8 of the NEMWA should be achieved by the Applicant.	▪ During spill events	▪ Project Owner
		10.2.10. The Contractor must record and document all significant spill events.	▪ Monitor documentation and records of significant spill events via audits and record non-compliance and incidents.	▪ During spill events	▪ ECO
B. OPERATIONAL PHASE					
10.3. Contamination of	To control and eliminate	10.3.1. Monitor and inspect maintenance equipment	▪ Implement specifications	▪ Monthly	▪ Project Owner

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	***Frequency***	***Responsibility***
soil and risk of damage to vegetation and/or fauna through spillage of fuels and oils	fuel and oil spillages which may result in soil contamination and damage to vegetation and/or fauna.	and vehicles to ensure that no fuel spillage takes place.	for maintenance equipment use as specified by the maintenance Contractor.		
		10.3.2. Spilled fuel, oil or grease is retrieved during operations where possible and contaminated soil removed, cleaned and replaced.	▪ Monitor the handling and storage of fuels and oils via site audits and monitor if spillages have taken place and if so, are removed correctly. Monitor waste disposal slips and waybills via site audits and record non-compliance and incidents.	▪ During spills	▪ Project Owner
		10.3.3. Contaminated soil to be collected by the Contractor and disposed of at a registered waste facility designated for this purpose. Proof of disposal (i.e. waste disposal slips or waybills) should be retained on file for auditing purposes.	▪ Monitor the correct removal of contaminated soil. Monitor waste disposal slips and waybills via site audits and record non-compliance and incidents.	▪ During spills	▪ Project Owner
		10.3.4. A Spill Response Plan must be compiled for the operational phase in order to manage potential spill events.	▪ Compile a Spill Response Plan. ▪ Audit signed and approved Spill Response Method Statement.	▪ Once-off (and thereafter updated as required). ▪ Once-off (and thereafter as required).	▪ Project Owner ▪ Facility Manager

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	***Frequency***	***Responsibility***
		10.3.5. Ensure that adequate spill containment and clean-up equipment are provided on site for use during spill events. Portable bioremediation kit (to remedy chemical spills) is to be held on site and used as required.	▪ Ensure that a well-maintained portable bioremediation kit is available on site and that operational personnel are aware of its location and instructions.	▪ Weekly	▪ Facility Manager
		10.3.6. In case of a spillage of hazardous chemicals where contamination of soil occurs, depending on the degree and level of contamination, excavation and removal to a hazardous waste disposal facility could be necessary. If the spillage is widespread and the soil is considered to be significantly contaminated, a specialist will need to be immediately appointed to address the spillage. This will usually entail the collection of samples of the contaminated soil followed by analysis in terms of the 2014 National Norms and Standards for the Remediation of Contaminated Land and Soil Quality (i.e. GN 331). If the soil is determined to be significantly contaminated, then compliance with Part 8 of the NEMWA should be achieved by the Applicant, including notifying the Minister of Environmental Affairs of the significant contamination. 331).	▪ Ensure that a suitably qualified specialist is appointed to collect and analyse the contaminated soil samples in terms of the 2014 Norms and Standards (i.e. GN 331) in order to determine if the soil is significantly contaminated or not. ▪ If the contaminated soil is considered to be significantly contaminated, then compliance with Part 8 of the NEMWA should be achieved by the Applicant.	▪ During spill events	▪ Project Owner
		10.3.7. Ensure that adequate containment structures are provided for the temporary storage of liquid dangerous goods and hazardous materials on site (such as chemicals, oil, fuel, hydraulic fluids,	▪ Monitor the storage and handling of dangerous goods and hazardous materials on site via site	▪ Weekly	▪ Facility Manager

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	***Frequency***	***Responsibility***
		lubricating oils etc.). Appropriate bund areas must be provided for the storage of these materials at the WEF. Bund areas should contain an impervious surface in order to prevent spillages from entering the ground. Bund areas should have a capacity of 110 % of the volume of the largest tank in the bund (tanks include storage of fuel/diesel).	audits and record non-compliance and incidents.		
10.4. Impacts due to management of solid and liquid wastes disposed of on the site during operational phase.	Prevent environmental impacts as a result of the operational phase such as pollution.	10.4.1. All operation waste to be removed from the site by an appointed service provider.	▪ Waste removal and disposal to be monitored throughout operation.	▪ Monthly	▪ Facility Manager
		10.4.2. All liquid waste or spills (used oil, paints, lubricating compounds and grease from vehicles passing through the entrance facility) to be packaged and disposed appropriately at a registered landfill site.	▪ Monitor the correct removal of liquid waste or spills. Monitor waste disposal slips and waybills via site audits and record non-compliance and incidents.	▪ During spills	▪ Project Owner
		10.4.3. Adequate containers for the cleaning of equipment and materials (paint, solvent) must be provided in order to avoid spillages.	▪ Monitor the storage and handling of dangerous goods and hazardous materials on site via site audits and record non-compliance and incidents.	▪ Monthly	▪ Facility Manager
C. DECOMMISSIONING PHASE					
10.5. No specific impacts are associated with the decommissioning phase other than those from the operational phase that will still be relevant for the duration of the decommissioning phase due to on-going occupation of the area.					

11. ENVIRONMENTAL AWARENESS AND FIRE MANAGEMENT PLAN

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	*Frequency*	*Responsibility*
A. DESIGN PHASE					
11.1. Potential impacts resulting from the lack of overall compliance with the conditions of the EA (issued by the DEA)	Ensure compliance with all environmental conditions of approval (issued by DEA as part of the EA).	11.1.1. Establish clear and transparent reporting of the activities undertaken with regard to all recommendations included in the EMPr.	▪ Audit report on compliance with actions and monitoring requirements.	▪ Based on EA conditions	▪ Project Owner and ECO
		11.1.2. Audit the implementation of the EMPr requirements.	▪ Audit report on compliance with actions and monitoring requirements.	▪ Once off prior to construction	▪ ECO
B. CONSTRUCTION PHASE					
11.2. Potential risk of fire due to construction activities or behaviour of staff on site during the construction phase.	Prevent fire on site resulting from workers smoking or starting fires (i.e. cooking, heating purposes).	11.2.1. Designate smoking areas, as well as areas for cooking, where the fire hazard could be regarded as insignificant.	▪ Ad-hoc checks to ensure workers are smoking or cooking in designated areas only.	▪ Daily	▪ ECO and Contractor
		11.2.2. Educate workers on the dangers of open and/or unattended fires.	▪ Ensure fire safety requirements are well understood and respected by construction personnel. ▪ Carry out Environmental Awareness Training. ▪ Conduct audits of the signed attendance registers.	▪ Ongoing. ▪ Once-off training and ensure that all new staff are inducted. ▪ Monthly	▪ ECO and Contractor ▪ Contractor/ ECO ▪ ECO
		11.2.3. Open fires must be prohibited. Appropriate fire safety training should also be provided to staff that are to be	▪ Ensure fire safety requirements are well understood and respected by construction personnel. Provide	▪ On-going	▪ ECO and Contractor

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	***Frequency***	***Responsibility***
		on the site for the duration of the construction phase.	basic fire safety training.		
		11.2.4. Ensure that cooking takes place in a designated area shown on the site map. Ensure that no firewood or kindling may be gathered from the site or surrounds.	▪ Check compliance with specified conditions using a report card, and allocate fines when necessary.	▪ On-going	▪ ECO and Contractors
		11.2.5. Fire-fighting equipment must be made available at various appropriate locations on the construction site.	▪ Ensure fire safety requirements are well understood and respected by workers. ▪ Assurance of functionality of fire extinguishers via inspections and certification by an accredited fire service company.	▪ On-going ▪ Bi-annually	▪ ECO and Contractor ▪ Contractor
11.3. Inappropriate behaviour of contractors and sub-contractors during the construction phase	Prevent unnecessary impacts on the surrounding environment by ensuring that contractors are aware of the requirements of the EMPr. Ensure that contractors and sub-contractors do not induce impacts on the surrounding environment as a result of unplanned pollution on site.	11.3.1. Ensure that the EMPr and the EA (should it be granted by the DEA), are included in all tender documentation and contractors and sub-contractors contracts.	▪ Check compliance with specified conditions using a report card, and allocate fines when necessary.	▪ On-going	▪ ECO and Contractors
		11.3.2. Contractors and sub-contractors must use the ablution facilities situated in a designated area within the site; and no bathing/washing should be permitted outside the designated area.	▪ Check compliance with specified conditions using a report card, and allocate fines when necessary.	▪ On-going	▪ ECO and Contractors
		11.3.3. All litter will be deposited in a clearly labelled, closed, animal-proof disposal bin in the construction area; particular attention needs to be paid to food	▪ Check compliance with specified conditions using a report card, and allocate fines when necessary.	▪ On-going	▪ ECO and Contractors

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	***Frequency***	***Responsibility***
	Ensure that actions by on-site contractors and sub-contractors and workers are properly managed in order to minimise impacts to surrounding environment	waste.			
		11.3.4. No person other than a qualified specialist or personnel authorised by the Project Owner, will disturb or remove plants outside the demarcated construction area.	▪ Check compliance with specified conditions using a report card, and allocate fines when necessary.	▪ On-going	▪ ECO and Contractors
		11.3.5. No person other than a qualified specialist or personnel authorised by the Project Owner, will disturb animals on the site.	▪ Check compliance with specified conditions using a report card, and allocate fines when necessary.	▪ On-going	▪ ECO and Contractors
		11.3.6. Educate workers on site about suitable behaviour on site and initiate environmental awareness. Staff must be informed that no trapping, snaring or feeding of any animal will be allowed.	▪ Carry out Environmental Awareness Training. ▪ Conduct audits of the signed attendance registers.	▪ Once-off training and ensure that all new staff are inducted. ▪ Monthly	▪ Contractor/ ECO ▪ ECO
11.4. Inappropriate planning and of site camp establishment.	Ensure that environmental issues are taken into consideration in the planning for site establishment.	11.4.1. All construction activities, materials, equipment and personnel must be restricted to the actual construction area specified (as required to undertake the construction work). The construction area must be demarcated by the Contractor.	▪ Monitor compliance and record non-compliance and incidents.	▪ Before construction	▪ ECO
		11.4.2. The Contractor should install and maintain Construction Site Information Boards in the position, quantity, design	▪ Monitor compliance and record non-compliance and incidents.	▪ Before construction	▪ ECO

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	***Frequency***	***Responsibility***
		and dimensions specified by the Project Owner.			
		11.4.3. General building materials should be stored in appropriate designated areas on site such that there will be no runoff from these areas towards sensitive systems. The site camp must be removed after construction.	▪ Monitor compliance and record non-compliance and incidents.	▪ Before construction	▪ ECO
11.5. Increased animal road mortality.	Reduction in animal mortality	11.5.1. The construction staff should be made aware of the presence of fauna and within the proposed project area. The construction personnel and staff must also be made aware of the general speed limits on site and must be alert at all times for potential crossings, and should be trained on how to react in these situations.	▪ Carry out Environmental Awareness Training. ▪ Conduct audits of the signed attendance registers.	▪ Once-off training and ensure that all new staff are inducted. ▪ Monthly	▪ Contractor/ ECO ▪ ECO
		11.5.2. To ensure that animals are not attracted to the site (and potentially resulting in increased road mortality), the waste collection bins and skips should be covered with suitable material, where appropriate, and the site camp must be kept clean on a daily basis.	▪ Monitor the activities via visual inspections, and record and report any non-compliance.	▪ Daily	▪ Contractor and ECO

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	***Frequency***	***Responsibility***
		11.5.3. Establish a monitoring programme to record the number of faunal road mortalities and collisions. If it is established that the number of collisions and faunal fatalities increase within an area, particularly with regards to smaller species (reptiles), then measures such as exclusion fences within these areas only should be installed.	▪ Appropriate monitoring and recording should be undertaken. ▪ Exclusion fences should be installed, if needed to direct animals to safe road crossings.	▪ Weekly ▪ As required	▪ ECO ▪ ECO and Contractor
11.6. Increased energy consumption during the construction phase.	Reduce energy consumption where possible.	11.6.1. Encourage the use of energy saving equipment at the site camp site (such as low voltage lights and low pressure taps) and promote recycling. Construction personnel must be made aware of energy conservation practices as part of the Environmental Awareness Training programme.	▪ Contractor to monitor energy usage via audits. ▪ Carry out Environmental Awareness Training. ▪ Conduct audits of the signed attendance registers.	▪ Monthly ▪ Once-off training and ensure that all new staff are inducted. ▪ Monthly	▪ Contractor ▪ Contractor/ ECO ▪ ECO
11.7. Impact on the regional water balance as a result of increased water usage.	Reduce water usage during the construction phase.	11.7.1. Water conservation should be practiced as follows: ▪ Cleaning methods utilised for cleaning vehicles, floors, etc. should aim to minimise water use (e.g. sweep before wash-down). ▪ Ensure that regular audits of water systems are conducted to identify possible water leakages. 11.7.2. Avoid the use of potable water for dust suppression during the construction phase and consider the use of	▪ Monitor via site audits and record non-compliance and incidents.	▪ Monthly	▪ ECO

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	***Frequency***	***Responsibility***
		alternative approved sources, where possible.			
		11.7.3. Make construction personnel aware of the importance of limiting water wastage, as well as reducing water use.	▪ Carry out Environmental Awareness Training with a discussion on water usage and conservation. ▪ Conduct audits of the signed attendance registers.	▪ Once-off training and ensure that all new staff are inducted. ▪ Monthly	▪ Contractor/ ECO ▪ ECO
C. OPERATIONAL PHASE					
11.8. Potential risk of fire due to behaviour of staff on site during the operational phase	Ensure appropriate and efficient fire prevention during the operational phase.	11.8.1. Designate smoking areas as well as areas for cooking, where the fire hazard could be regarded as insignificant.	▪ Random inspections during a month to ensure workers are smoking or starting fires in designated areas only.	▪ Monthly	▪ Facility Manager
		11.8.2. Educate workers on the dangers of open and/or unattended fires.	▪ Ensure fire safety requirements are well understood and respected by operational personnel. ▪ Carry out Environmental Awareness Training. ▪ Conduct audits of the signed attendance registers.	▪ Ongoing ▪ Once-off training and ensure that all new staff are inducted. ▪ Monthly	▪ Facility Manager ▪ Facility Manager ▪ Facility Manager
		11.8.3. Open fires must be prohibited. Appropriate fire safety training should also be provided to staff that are to be on the site for the duration of the operational phase.	▪ Ensure fire safety requirements are well understood and respected by operational personnel. Provide basic fire safety training.	▪ On-going	▪ Project Owner

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	***Frequency***	***Responsibility***
		11.8.4. Ensure that adequate fire-fighting equipment is available and easily accessible on site.	▪ Ensure fire safety requirements are well understood and respected by workers. ▪ Assurance of functionality of fire extinguishers via inspections and certification by an accredited fire service company.	▪ On-going ▪ Bi-annually	▪ Facility Manager ▪ Project Owner
11.9. Increased energy consumption during the operational phase.	Reduce energy consumption where possible.	11.9.1. Encourage the use of energy saving equipment at the WEF (such as low voltage lights and low pressure taps) and promote recycling. Operational personnel must be made aware of energy conservation practices as part of the environmental awareness training programme.	▪ Monitor energy usage via site investigations. ▪ Conduct training for all operational personnel.	▪ Monthly ▪ As and when required and ensure that all new staff are inducted.	▪ Facility Manager ▪ Project Owner
11.10. Impact on the regional water balance as a result of increased water usage.	Reduce water usage during operations.	11.10.1. Water conservation to be practiced in line with Energy Saving Policies as follows: ▪ Cleaning methods utilised for cleaning vehicles, floors, the offices etc. should aim to minimise water use (e.g. sweep before wash-down). ▪ Where possible, encourage the re-use of water. ▪ Ensure that regular audits of water systems are conducted to identify possible water leakages. ▪ Consider installing water saving	▪ Record water usage during the operational phase, conduct audits and record non-compliance and incidents.	▪ Monthly	▪ Facility Manager

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	***Frequency***	***Responsibility***
		devices (e.g. dual flush toilets, automatic shut-off taps, etc.).			
		11.10.2. Carry out environmental awareness training with a discussion on water usage and conservation, and make operational personnel aware of the importance of limiting water wastage.	▪ Conduct training for all operational personnel.	▪ As and when required during operations and ensure that all new staff are inducted.	▪ Facility Manager
11.11. Non respect of waste management practices	Minimise the production of general waste. Ensure compliance with relevant waste management legislation. Minimise pollution of the environment.	11.11.1. Control and implement waste management plans. Ensure that relevant legislative requirements are respected. 11.11.2. Determine specific areas on site for temporary management of waste.	▪ Control of waste management practices throughout operation phase.	▪ Monthly	▪ Facility Manager
		11.11.3. Promote waste reduction, re-use, and recycling opportunities on site during the operation phase. 11.11.4. Ensure an adequate and sustainable use of resources.	▪ Monitor waste generation and collection throughout operation.	▪ Monthly	▪ Facility Manager
11.12. Excessive generation of waste water on site during the operation phase	Maintain reasonable levels of waste water generation	11.12.1. Waste water must be collected and disposed of at a suitable licenced disposal facility. Proof of disposal (i.e. waste disposal slips or waybills) should be retained on file for auditing purposes.	▪ Waste water generation to be monitored throughout the operational phase. ▪ Monitor waste disposal slips and waybills via site audits and record non-compliance and incidents.	▪ Quarterly	▪ Facility Manager
D. DECOMMISSIONING PHASE					
11.13. Ensure that the construction mitigation and management measures are adhered to during the decommissioning phase.					

12. AVIFAUNAL MANAGEMENT PLAN (BIRDS AND BATS)

An Avifaunal Management Plan will be prepared by suitably qualified bird and bat specialists based on the current bird and bat best practice guidelines at that time.

1. BIRDS

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	***Frequency***	***Responsibility***
A. CONSTRUCTION PHASE					
12.1. Mortality of Red Data avifauna (birds) due to disturbance during construction phase	Prevent Mortality of Red Data avifauna due to construction activities.	▪ Develop and implement a Construction EMP (CEMP). ▪ High traffic areas and buildings such as offices, batching plants, storage areas etc. should where possible be situated in areas that are already disturbed; ▪ Existing roads and farm tracks should be used where possible; ▪ The minimum footprint areas of infrastructure should be used wherever possible, including road widths and lengths; ▪ Sensitive zones and no-go areas (e.g. nesting areas) are to be avoided as indicated in the Bird Impact Assessment (Appendix H); ▪ No off-road driving; ▪ ECO to oversee activities and ensure	▪ Appoint a suitably qualified avifaunal specialist. ▪ Monitor the efficiency of the CEMP and revise if necessary. ▪ Site visits and monitoring to ensure that the recommendations are adhered to. ▪ Training to be provided to the ECO and site manager to identify Red Data and priority bird species, as well as their nests. ▪ Rehabilitation specialist should be appointed and the effectiveness of rehabilitation to be monitored post construction. ▪ Relevant Best Practice Guidelines to be implemented during the	▪ Once-off before construction commences. ▪ CEMP to be implemented throughout the construction phase. ▪ Daily site visits. ▪ Training to be provided before construction commences	▪ Avifaunal specialist and Project Developer ▪ ECO ▪ ECO and contractor ▪ Project Developer and avifaunal specialist.

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	***Frequency***	***Responsibility***
		that the CEMP is implemented and enforced; ▪ Prior to construction, the avifaunal specialist should conduct a site walkthrough, covering the final road and power line routes as well as the final turbine positions, to identify any nests/breeding activity of sensitive species, as well as any additional sensitive habitats within which construction activities may need to be excluded; ▪ The construction Phase ECO, the onsite Environmental Manager, and the client's representative on site (e.g. the resident engineer) are to be trained to identify Red Data and priority bird species, as well as their nests. If any nests or breeding locations for this species are located, the avifaunal specialist is to be contacted for further instruction; ▪ Following construction, rehabilitation of all areas disturbed (e.g. temporary access tracks and laydown areas) must be undertaken and to this end a habitat restoration plan is to be developed by a specialist and included within the CEMP.	construction phase.		

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	***Frequency***	***Responsibility***
B. OPERATIONAL PHASE					
12.2. Mortality of Red Data avifauna due to collision with wind turbines	Prevent Mortality of Red Data avifauna due to collision with wind turbines.	▪ Develop an operational monitoring programme based on Best Practice Guidelines at the time. ▪ This plan should include a carcass search programme for birds during the first two years of operation, in line with the applicable (i.e. at the start of operations at the wind farm) South African monitoring guidelines; ▪ Develop and implement a 24 month post-construction bird activity monitoring program that mirrors the pre-construction monitoring surveys completed by Arcus and is in line with the applicable South African post-construction monitoring guidelines. This program must include thorough and ongoing nest searches and nest monitoring; ▪ Operational monitoring in line with applicable guidelines. ▪ Further operational mitigation measures to be researched, by appointed bird specialist, and the appropriate selected mitigation implemented, if post construction monitoring reveal high levels of impacts.	▪ Implement and monitor the efficiency of the programme based on the relevant Best Practice Guidelines at the time. Revise the programme based on operational monitoring data and results as required (but should still be in line with the current Guidelines). ▪ Appoint an avifaunal specialist. ▪ Monitor compliance with recommendations.	▪ Programme to be implemented during the first two years of operations as required by the relevant guidelines a the time and as prescribed in the carcass search programme.	▪ Avifaunal specialist and Project Owner. ▪ Facility Manager

2. BATS

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	***Frequency***	***Responsibility***
A. CONSTRUCTION PHASE					
12.3. Mortality of Red Data avifauna (bats) due to disturbance during construction phase.	Prevent Mortality of Red Data avifauna due to construction activities.	▪ A site-specific Construction Phase Environmental Management Plan (CEMP) must be created, which gives appropriate and detailed description of how construction activities must be conducted to reduce unnecessary destruction of bat habitat. All contractors are to adhere to the CEMP and should apply good environmental practice during construction. ▪ It is recommended that a bat specialist surveys the confirmed turbine locations and the locations of all other site infrastructure, such as pylons, to identify any roosts/activity of sensitive species, as well as any additional sensitive habitats before any construction activities commence and once the preliminary design and layout of the site is complete. ▪ Avoid construction activities near roosts which include buildings, trees and rocky crevices. It is recommended that a bat specialist surveys the confirmed turbine and pylon locations and the locations of all other proposed site infrastructure for the presence of confirmed roosts before any construction activities commence. ▪ No construction activities with the potential	▪ Appoint a suitably qualified avifaunal (bat) specialist. ▪ Monitor the efficiency of the CEMP and revise if necessary. ▪ Site visits and monitoring to ensure that the recommendations are adhered to. ▪ Training to be provided to the ECO and site manager to identify Red Data and priority bat species, as well as their nests. ▪ Rehabilitation specialist should be appointed and the effectiveness of rehabilitation to be monitored post construction. ▪ Relevant Best Practice Guidelines to be implemented during the construction phase.	▪ Once-off before construction commences. ▪ CEMP to be implemented throughout the construction phase. ▪ Daily site visits. ▪ Training to be provided before construction commences	▪ Once-off before construction commences. ▪ CEMP to be implemented throughout the construction phase. ▪ Daily site visits. ▪ Training to be provided before construction commences

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	*Frequency*	*Responsibility*
		to physically affect any bat roosts will be permitted without the express permission of a suitably qualified bat specialist following appropriate investigation and mitigation. ▪ If occupied roosts are confirmed these should be buffered based on Best Practice Guidelines, which includes a minimum buffer of 200 m. This is according to the current South African Good Practice Guidelines for Surveying Bats at Wind Energy Facility Developments - Pre-construction: 4th Edition. South African Bat Assessment Association. However, the applicable Best Practice Guidelines at the time of construction and operation should be implemented. ▪ Following construction, rehabilitation of all areas disturbed (e.g. temporary access tracks and laydown areas) must be undertaken and a habitat restoration plan must be developed by a specialist and included within the CEMP.			
B. OPERATIONAL PHASE					
12.4. Mortality of Red Data avifauna due to collision with wind turbines	Prevent Mortality of Red Data avifauna due to collision with wind turbines.	▪ Develop an operational monitoring programme based on Best Practice Guidelines at the time. ▪ Operational acoustic monitoring and carcass searches for bats must be performed, based on best practice guidelines at the time to monitor mortality and bat activity levels.	▪ Implement and monitor the efficiency of the programme based on the relevant Best Practice Guidelines at the time. Revise the programme based on operational monitoring data and results as required (but should	▪ Programme to be implemented as required by the relevant guidelines at the time and as prescribed in the	▪ Avifaunal specialist and Project Developer. ▪ Facility

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	***Frequency***	***Responsibility***
		Acoustic monitoring should include monitoring at height (from more than one location) and at ground level. ▪ If mortality does occur, the level of mortality should be considered by a bat specialist to determine if this is at a level where further mitigation needs to be considered. ▪ It is advised that both pre-construction and operational monitoring data are used to confirm the need for additional mitigation measures. ▪ Bats must be prevented from entering any possible artificial roost structures (e.g. roofs of buildings, road culverts and wind turbines) by ensuring that they are sealed in such a way as to prevent bats from entering. If bats colonise WEF infrastructure, a suitably qualified bat specialist should be consulted before any work is undertaken on that infrastructure and before attempting to remove any bats. Ongoing maintenance and inspections of buildings must be carried out to ensure no access to bats. ▪ Where lights need to be used, these should have low attractiveness for insects such as low pressure sodium and warm white LED lights (Rydell 1992; Stone 2012). High pressure sodium and white mercury lighting is attractive to insects (Blake et al. 1994; Rydell 1992; Svensson and Rydell 1998) and should	still be in line with the current Guidelines). ▪ Appoint an avifaunal specialist. ▪ Monitor compliance with recommendations.	carcass search programme.	Manager

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	***Frequency***	***Responsibility***
		not be used as far as possible. Variable lighting regimes, reducing light spillage and using lower intensity lighting will be favourable. Additional considerations and mitigation options are provided in Stone (2012).			

13. HERITAGE MANAGEMENT PLAN

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	*Frequency*	*Responsibility*
PLANNING PHASE: HERITAGE IMPACTS (ARCHAEOLOGY AND CULTURAL LANDSCAPE)					
Impacts to archaeology, graves and palaeontological material.	Achieve a layout that minimizes the potential impacts to archaeological resources, graves and/or palaeontological material.	▪ Ensure that project layout avoids as many known archaeological resources, graves and/or palaeontological material as possible, in close proximity to the proposed development footprint. ▪ A Heritage Management Plan (HMP) must be developed for all heritage resources located within the proposed development footprint, and all heritage resources that require no-go buffer zones. The HMP must be submitted to SAHRA prior to construction commencing. ▪ The ECO should be trained by a specialist palaeontologist for the identification of potential for fossils to be uncovered during excavations. As many excavations as possible should be monitored by the ECO during construction and if any fossils are uncovered they should be protected *in situ* and immediately reported to a palaeontologist in order to plan a way forward. ▪ These no-go sites should be examined periodically by the ECO during the construction phase to ensure that they are being respected and secure and fenced off	▪ Take cognizance of the archaeological sites reported in the Heritage Impact Assessment (HIA) when designing facility layout and routing. ▪ Appoint a professional archaeologist to carry out a pre-construction walk down survey. ▪ Ensure and verify that the significant palaeontological and archaeological sites identified in the HIA are included on project maps and regarded as no-go zones with buffers during the planning and design phase. Review the site layout plan, and signed minutes of meetings or signed reports.	▪ Once-off (at least 6 months in advance of construction) ▪ Once-off ▪ On-going	▪ Project Developer ▪ Heritage specialist ▪ ECO

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	*Frequency*	*Responsibility*
		during the construction phase.			
Impacts to the natural and cultural landscape.	Reduce the degree of visual contrast in the landscape.	▪ Plan to use an earth-coloured paint on the built elements of the facility.	▪ Include earth-coloured paint in the design specifications for the facility.	▪ Once-off	▪ Project Developer
CONSTRUCTION PHASE: HERITAGE IMPACTS (ARCHAEOLOGY AND CULTURAL LANDSCAPE)					
Clearing of vegetation and excavation of foundations	Avoid or minimize the destruction or disturbance of archaeological materials.	▪ Ensure that project layout avoids as many known archaeological resources, graves and/or palaeontological material as possible, in close proximity to the proposed development footprint. ▪ A Heritage Management Plan (HMP) must be developed for all heritage resources located within the proposed development footprint, and all heritage resources that require no-go buffer zones. The HMP must be submitted to SAHRA prior to construction commencing. ▪ Ensure and verify that the archaeological sites identified in the HIA are included on project maps and regarded as no-go zones with buffers during the planning and design phase. ▪ Appoint a professional archaeologist to carry out a pre-construction walk down survey. ▪ Excavation and sampling of affected archaeological sites (stone artefacts).	▪ Appoint an archaeologist to conduct a walk-down survey of the final approved layout before construction. ▪ Carry out visual inspections to ensure strict control over the behaviour of construction staff in order to restrict activities in demarcated no-go areas. ▪ HMP to be developed and submitted to SAHRA for approval.	▪ Once off before construction commences. ▪ Weekly	▪ Heritage specialist ▪ Project Owner ▪ ECO
Construction vehicles and activities could	Minimize the chances of significant archaeological	▪ A walk-down survey of the final approved layout will need to be conducted prior to	▪ Conduct a walk-down survey of the final approved layout before	▪ Once off before construction	▪ Heritage

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	***Frequency***	***Responsibility***
result in damage to or destruction of archaeological sites and/or graves.	sites and/or graves being disturbed.	construction. Any sites found during this survey and that require mitigation would need to be mitigated well in advance (at least six months) of the commencement of construction in order to allow time in case there are further requirements that need to be met (for example radiocarbon dating or further work on any sites that revealed even more significant material than was evident from the surface). ▪ Ensure that no activity takes place outside of the authorized construction footprint.	construction. ▪ Carry out visual inspections to ensure strict control over the behaviour of construction staff in order to restrict activities to within demarcated areas.	commences. ▪ Weekly	specialist ▪ ECO
		▪ The Contractor and ECO must be informed of the possibility of any heritage material (i.e. ensure that all personnel are aware of the potential of encountering graves and what to do if this occurs (i.e. to report any suspicious stone features prior to disturbance)). ▪ The informal graveyard in the south-east should be treated as a no-go area. It is away from the development footprint but the ECO should be aware of its existence and ensure that the relevant section of farm track is never used by construction vehicles. ▪ Alternatively commission an archaeologist to examine the final development footprint at least six months prior to the commencement of construction.	▪ Carry out Environmental Awareness Training to ensure that the Contractors are informed of the possible type of heritage features that may be encountered during the construction phase. ▪ Conduct audits of the signed attendance registers. ▪ Carry out visual inspections to ensure that no-go areas such as graves be avoided during the construction phase. ▪ Appoint a professional archaeologist to examine the construction footprint. ▪ Conduct an audit to verify that the necessary permits are obtained by	▪ Once-off training and ensure that all new staff are inducted. ▪ Monthly ▪ Once-off six months prior to construction. ▪ As required/ necessary during the construction phase.	▪ Contractor/ ECO ▪ ECO ▪ Archaeologist ▪ Project Owner

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	***Frequency***	***Responsibility***
			the archaeologist, if required.		
		▪ If archaeological sites and potential graves cannot be avoided, the buffers as stipulated in the HIA (Appendix L) should be implemented during the construction phase. ▪ The graveyards at PAN2017/001 (waypoint 1376) and PAN2017/003 (waypoint 1378) must be cordoned off as necessary, avoided and protected. ▪ The historical sites at PAN2017/002 (waypoint 1377), PAN2017/004 (waypoint 1399), PAN2017/005 (waypoint 1413) and KOM2017/001 (waypoint 1420) must be cordoned off if necessary, protected and avoided. ▪ These sites should be cordoned off in advance of the development commencing (the mitigation archaeologist could be called on to assist with this if needed).	▪ Ensure archaeological sites are cordoned off. ▪ Carry out visual inspections to ensure strict control over the behaviour of construction staff in order to restrict activities to within demarcated areas and outside of the buffer areas to ensure that the cordoned off areas remain free of disturbance.	▪ Once off before construction commences ▪ Weekly	▪ ECO/Archaeo-logist
		▪ If any of the graves or potential graves found on site cannot be avoided then an archaeologist should be contracted to conduct a test excavation to determine the status of the feature. If it is determined to be a grave, then exhumation would need to occur (if necessary) with the permission of SAHRA (and in accordance with any requirements that SAHRA might impose at the time).	▪ Appoint a professional archaeologist to conduct a test excavation to determine if the sites are graves. ▪ Conduct an audit to verify that the necessary permits are obtained by the archaeologist for the test excavation, if required.	▪ As potential graves are encountered	▪ Project Owner

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	***Frequency***	***Responsibility***
		▪ If any concentrations of archaeological material, graves or stone features are uncovered during the proposed construction, work in the immediate area should be halted. The find would need to be reported to the heritage authorities and may require inspection by an archaeologist. Such heritage is the property of the state and may require excavation and curation in an approved institution. Sufficient time should be allowed to remove/collect such material.	▪ Monitor excavations and construction activities for archaeological materials via visual inspections and report the finds accordingly. ▪ Contact the heritage authorities and the identified archaeologist if any heritage features are uncovered.	▪ Daily or during excavations. ▪ As required/ necessary during the construction phase.	▪ Contractor and ECO ▪ Project Owner
Impacts to the cultural landscape and disruption of traditional activities	Reduce visual contrast of the development in the landscape. Reduce visual intrusion into cultural landscape & disruption of traditional activities.	▪ Minimize surface footprint and the amount of white structures visible. ▪ Roads must be designed in such a way as to minimise cut and fill operations in order to reduce landscape scarring. ▪ Minimise fencing in communal lands that is used for traditional practices such as herding and the collection of natural products..	▪ Monitor the paint colour via visual inspections and report non-compliance.	▪ Once-off, at an appropriate time during construction period.	▪ Project developer ▪ Contractor ▪ ECO
CONSTRUCTION PHASE: PALAEONTOLOGICAL HERITAGE IMPACTS					
Loss of palaeontological heritage resources at or beneath ground surface within the development footprint (fossils, fossil sites and	Reporting, conservation, recording and judicious sampling of scientifically important fossil material exposed during the construction phase of development.	▪ Reporting chance fossil finds to SAHRA for possible professional mitigation. Such finds are more likely to be made on the low lands than on the mountains	▪ Monitoring of all substantial excavations into sedimentary bedrocks for fossil material (e.g. vertebrate bones & teeth, fossilized wood, shells) ▪ Safeguarding of chance fossil finds, preferably *in situ*.	▪ Throughout the construction phase	▪ ECO

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	***Frequency***	***Responsibility***
contextual geological data).			▪ Report chance finds to SAHRA		
		▪ Recording and sampling of fossil material and associated geological data (only necessary for chance fossil finds made during the proposed development).	▪ Application by a qualified palaeontologist for fossil collection permit from SAHRA. ▪ Palaeontologist to undertake field study of fossil finds *in situ* on site. Photography and sampling of important finds. ▪ Curation of fossils collected in an approved repository (museum/ university collection).	▪ Following alert of chance fossil finds on site (It is important to note that there is no need for on-site palaeontological monitoring unless new fossil finds are made during development).	▪ Qualified palaeontologist appointed and commissioned by the Project Owner. ▪
OPERATION PHASE: HERITAGE IMPACTS (ARCHAEOLOGY AND CULTURAL LANDSCAPE)					
Potential impact of WEF on the cultural landscape and disruption of traditional activities	Reduce visual contrast of the development in the landscape. Reduce visual intrusion into cultural landscape & disruption of traditional activities.	▪ Monitor building and façade maintenance. Painted features should be maintained and repainted when colour fades or paint flakes. ▪ Good house-keeping in terms of management of facility	▪ Carry out an inspection of WEF to ensure that it is being maintained in a good condition. ▪ Monitor the paint colour to detect fading.	▪ Monthly ▪ Annually	▪ Project Owner ▪ Facility Manager
Maintenance vehicles and activities could result in damage to or destruction of archaeological sites and/or graves.	Minimise the chances of significant archaeological sites and/or graves being disturbed.	▪ Ensure that no activity takes place outside of the authorized operational footprint.	▪ Carry out visual inspections to ensure strict control over the behaviour of operational staff to ensure that activities do not take place outside of authorized operational footprint.	▪ Weekly	▪ Facility Manager

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	***Frequency***	***Responsibility***
DECOMMISSIONING PHASE: HERITAGE IMPACTS (ARCHAEOLOGY, PALAEONTOLOGY AND CULTURAL LANDSCAPE)					
Vehicles and activities associated with the removal of the WEF and rehabilitation of site could result in damage to or destruction of archaeological sites and/or graves.	Avoid or minimise the chances of significant archaeological sites and/or graves being disturbed.	▪ Ensure that no activity takes place outside of the authorized construction footprint. ▪ Report any chance finds of fossils or palaeontological resources. ▪ Ensure excavation and sampling of affected archaeological sites. ▪ Report any chance finds of graves. ▪ The known graveyards in the south-east should be cordoned off and treated as no-go areas. The informal graveyard alongside the existing road is especially sensitive given its proximity to the road. ▪ Exhumation of graves.	▪ Carry out visual inspections to ensure strict control over the behaviour of construction staff in order to restrict activities within demarcated areas. ▪ Demarcate graveyards in the south-east and monitor that this area is avoided by workers during the decommissioning phase.	▪ Weekly ▪ Ongoing during decommissioning phase.	▪ ECO ▪ Contractor
Scarring of the landscape once infrastructure has been removed.	Ensure that the landscape within the development footprint has a similar appearance to that around it.	▪ Ensure removal of all foundations, construction materials and foreign matter. ▪ Ensure rehabilitation of the site in accordance with environmental guidelines.	▪ Follow the relevant environmental guidelines.	▪ Throughout the decommissioning phase.	▪ ECO

14. ECOLOGICAL OFFSET REQUIREMENTS

The following conditions pertained to the Ecological Offset requirements have been determined through the Ecological Offset study (Appendix Q of the Updated Draft EIA Report) undertaken as part of this EIA and in consultation with relevant stakeholders. The Environmental Authorisation must be conditional to these requirements:

1. A biodiversity offset is required mitigation for this activity (Kap Vley Wind Farm). The offset must secure in perpetuity at least 1 125 ha of Sand Fynbos and 510 ha Klipkoppe Shrubland vegetation types and not be less than 2 580 ha in aggregate extent. The Sand Fynbos vegetation types should include intact and representative areas of the Dune Fynbos and Restio Fynbos habitat types as defined by the terrestrial ecological specialist study.

2. Offset sites need to be at least in as good or better condition compared to the impacted areas, and contain viable populations of the majority of impacted species. Ideally, Offset sites should be declared as a protected area under the Protected Areas Act, be adjacent to an existing protected area, or at a minimum facilitate ecological connectivity in the region.

3. Before construction of any component of the activity begins, the requisite outcomes and necessary arrangements for the implementation of the offset must be captured in an Offset Implementation Agreement with credible implementing partners, which agreement must be concluded and submitted to DENC for approval, which approval shall not be unreasonably withheld.

4. The agreement must at least set out the specific areas which will be secured, how they will be rehabilitated and protected in the long term, what financial provision has been made for the establishment and management of the offset for 30 years and what implications and penalties exist to ensure the performance of all parties in offset implementation.

15. SPECIFIC PROJECT RELATED ENVIRONMENTAL IMPACTS

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	*Frequency*	*Responsibility*
A. DESIGN PHASE					
A.1. TERRESTRIAL ECOLOGY IMPACTS					
Potential impact on terrestrial ecology as a result of the proposed Kap Vley WEF and associated infrastructure.	Avoid or minimize impacts on terrestrial ecology on site.	▪ Ensure that the design of the WEF takes the sensitivity mapping of the ecological specialist into account to avoid and reduce impacts on Species and habitats of Conservation Concern	▪ Ensure that this is taken into consideration during the planning and design phase.	▪ During design cycle and before construction commences.	▪ Project Developer and Appointed Ecology Specialist
Potential impact on terrestrial ecology as a result of the proposed infrastructure	Avoid or minimize impacts on terrestrial ecology on site.	▪ Ensure that a Rehabilitation Plan is compiled that identifies tasks and procedures to be instituted at specific sites where transformation of habitat has arisen.	▪ Ensure that this is taken into consideration during the planning and design phase, and that a suitable specialist is appointed to compile a Rehabilitation Plan.	▪ During design cycle and before construction commences.	▪ Project Developer and Appointed Specialist ▪ ECO
Habitat loss due to clearance of vegetation and plant species of conservation concern (SCC)	Avoid and/or minimize habitat loss for plant SCC	▪ No development of turbines, roads or other infrastructure within No-Go areas as identified in the Terrestrial Ecological Impact Assessment (Appendix G). ▪ Pre-construction walk-through of the development footprint to further refine the layout and reduce impacts on SCC through micro-siting of the turbines and access roads.	▪ Ensure that this is taken into consideration during the planning and design phase, and that a suitable specialist is appointed to undertake the pre-construction walk-through to further refine the layout and reduce impacts on SCC.	▪ During design cycle and before construction commences.	▪ Project Developer and Appointed Specialist ▪ ECO

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	*Frequency*	*Responsibility*
Disturbance of resident fauna due to habitat loss and noise	Avoid and/or minimize habitat loss, construction noise and disturbance	▪ Avoidance of identified areas of high faunal importance at the design stage. ▪ Ensure that lay-down and other temporary infrastructure is within medium- or low- sensitivity areas, preferably previously transformed areas if possible.	▪ Ensure that this is taken into consideration during the planning and design phase.	▪ During design cycle and before construction commences.	▪ Project Developer
Disturbance to fauna as a result of poor project planning and design	Avoid and/or minimize disturbance to fauna.	▪ Appropriate design of roads and other infrastructure where appropriate to minimise faunal impacts and allow fauna to pass through or underneath these features. ▪ No electrical fencing within 20 cm of the ground as tortoises become stuck against such fences and are electrocuted to death.	▪ Ensure that this is taken into consideration during the planning and design phase.	▪ During design cycle and before construction commences.	▪ Project Developer
A.2. IMPACT ON AVIFAUNA (BIRDS)					
Mortality of Red Data avifauna due to collisions with turbines and/or powerlines.	Mortality of Red Data avifauna due to collisions with turbines and/or powerlines.	▪ Ensure that the proposed turbine and power line design includes Bird Flight Diverters (BFDs), if required and recommended by the avifauna specialist. ▪ One turbine (WEA 14) is currently within a high sensitivity area and should be relocated approximately 120 m to the south or 125 m to the south east while turbine WEA 25 may protrude into a high sensitivity area and should be set back approximately 65 m north or 75 m north east to avoid this.	▪ Ensure that the BFD design is suitable for installation on the proposed turbine and powerline design. ▪ Ensure that the recommendations regarding the relocation of WEA 14 and 25 from the bird specialist are adhered to in the design/layout of the Kap Vley WEF.	▪ Once-off before construction commences.	▪ Avifaunal (Bird) specialist and Project Developer
Impact on Red Data	Mortality of Red Data	▪ Buffer nest sites as indicated in the Bird Impact	▪ Ensure that the	▪ Once-off before	▪ Avifaunal (bird)

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	***Frequency***	***Responsibility***
avifauna due to habitat clearance and operation of wind turbines.	avifauna due to clearance of vegetation and operation of wind turbines	Assessment Report (Appendix H). ▪ Turbines must not be constructed within any high sensitivity zones identified through pre-construction monitoring and impact assessment; ▪ The lowest feasible number of turbines should be constructed for the required MW output. Therefore, fewer larger (i.e with a higher MW output) turbine models should be favoured where possible. ▪ Preferred turbine placement in areas of low sensitivity, and decreasing preference through to high sensitivity zones identified through pre-construction monitoring.	recommendations from the specialist are adhered to in the design/layout of the Kap Vley WEF. Avoid the sensitivity areas as indicated in the bird sensitivity map compiled by the specialist.	construction commences.	specialist and Project Developer
A.3. IMPACT ON AVIFAUNA (BATS)					
Impact on Red Data avifauna (bats) due to habitat clearance and operation of wind turbines.	Mortality of Red Data avifauna due to clearance of vegetation and operation of wind turbines	▪ Roost nests must be avoided when designing the layout of the WEF as indicated in the Bat Impact Assessment (Appendix I). ▪ Avoid construction near roosts. ▪ No turbines in No-go areas. ▪ Designing the layout of the project to avoid areas that are more frequently used by bats may reduce the likelihood of mortality and should be the primary mitigation measure. For the Kap Vley WEF, low lying areas should be avoided. This has been adhered to as all turbines are situated on the low ridges at the site, away from areas of higher bat activity and outside of no-go areas (Figure 1 of the Bat Impact Assessment included in Appendix I).	▪ Ensure that the recommendations from the specialist are adhered to in the design/layout of the Kap Vley WEF. Avoid the sensitivity areas as indicated in the bat sensitivity map compiled by the specialist.	▪ Once-off before construction commences.	▪ Avifaunal (bat) specialist and Project Developer

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	*Frequency*	*Responsibility*
A.4. IMPACTS ON DRY AND EPHEMERAL WATERCOURSES					
Impact on identified sensitive dry and ephemeral watercourses (incl drainage lines)	To reduce the impact on the sensitive dry and ephemeral watercourses (incl drainage lines)	▪ Ensure that the sensitivity maps guide the design and layout of the proposed development. In terms of Section 21 (c) and (i) of the National Water Act (Act 36 of 1998) (NWA), the relevant authorisation must be obtained from the Department of Water and Sanitation (DWS) for any and all any activities that take place within the watercourses. It is recommended that the relevant DWS officials be consulted in this regard to ensure that all legislative requirements are complied with. As far as possible, avoid identified sensitive dry and ephemeral watercourses (incl drainage lines) and associated buffers. (The current layout already avoids the identified drainage lines).	▪ Ensure that the recommended mitigation measures are implemented as proposed by the specialist (Appendix J).	▪ Once-off prior to the commencement of construction.	▪ Project Developer and ECO
A.5. VISUAL IMPACTS					
Potential visual intrusion of construction activities on existing views of sensitive visual receptors.	Reduce visual intrusion of construction activities project wide.	▪ Ensure plans are in place to minimise fire hazards and dust generation. ▪ Ensure plans are in place to rehabilitate temporary cleared areas as soon as possible. ▪ Ensure plans are in place to control and minimise erosion risks.	▪ Ensure that this is taken into consideration during the planning and design phase.	▪ During design cycle and before construction commences.	▪ Project Developer ▪ ECO
		▪ Clearance of the area for the wind turbines should be phased in such a way that the exposed area is always at a minimum.	▪ Ensure that this is taken into consideration prior to the commencement of construction.	▪ Once-off during the design phase.	▪ Project Developer
	Reduce visual intrusion of	▪ Avoidance of steep slopes (>1:5 gradient) in the	▪ Ensure that this is taken into	▪ During design cycle	▪ Project

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	***Frequency***	***Responsibility***
	the WEF.	design of the project layout. ▪ Careful siting of substation and O&M buildings to reduce visual impacts. ▪ A maintenance plan for buildings and structures should be in place. ▪ Colours of buildings and structures should blend in with the landscape background where this is technically feasible and where it will not negatively affect the functionality of the structures. ▪ Materials, coatings and paints should be chosen based on minimal reflectivity, where possible. ▪ Grouped structures should be painted in the same colour where this will not affect the functionality of the structures, to reduce visual complexity and contrast. ▪ Appropriate coloured materials should be used for structures to blend in with the backdrop of the project. ▪ Appropriate colours for smooth surfaces often need to be two to three shades darker than the background colour to compensate for shadows that darken most textured natural surfaces.	consideration during the planning and design phase.	and before construction commences.	Developer and Contractor
Potential impact of night lighting of the WEF on the nightscape of the region.	Reduce the impact of night lighting of structures and buildings associated with the WEF on the surrounding nightscape and visual receptors.	▪ A lighting plan for the proposed WEF that documents the design, layout and technology used for lighting purposes should be prepared, indicating how nightscape impacts will be minimised and that also demonstrates that project lighting is effectively shielded from surrounding and adjacent properties	▪ A lighting specialist should be contracted to design the lighting plan for the project. The plan should provide for temporary lighting during the construction and decommissioning phases of	▪ During design cycle and before construction commences. ▪ Once-off during the design phase.	▪ Project Developer

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	***Frequency***	***Responsibility***
		must be prepared with the design plans of the plant. The plan should minimize light spill onto neighbouring properties and glare which can affect visual receptors in the surrounding landscape. ▪ The lighting plan should also minimize contribution to light pollution (night glow) of the regional nightscape. ▪ The lighting plan should include a process for promptly addressing and mitigating complaints about potential lighting impacts. ▪ Lighting of the facility should not exceed, in number of lights and brightness, the minimum required for safety and security. ▪ Uplighting and glare (bright light) should be minimised using appropriate screening. ▪ Low-pressure sodium light sources should be used to reduce light pollution. ▪ Light fixtures should not spill light beyond the project boundary. ▪ Install timer switches or motion detectors (within safety requirements) to be used to control lighting in areas that are not occupied continuously.	all components of the project. ▪ Ensure that these mitigation measures are taken into consideration during the planning and design phase by reviewing signed minutes of meetings or signed reports.		
A.6. HERITAGE IMPACTS (ARCHAEOLOGY AND CULTURAL LANDSCAPE)					
Impacts to archaeology, graves and palaeontological material.	Achieve a layout that minimizes the potential impacts to archaeological resources, graves and/or	▪ Ensure that project layout avoids as many known archaeological resources, graves and/or palaeontological material as possible, in close proximity to the proposed development footprint.	▪ Take cognizance of the archaeological sites reported in the Heritage Impact Assessment (HIA) when designing facility	▪ Once-off (at least 6 months in advance of construction) ▪ Once-off	▪ Project Developer ▪ Heritage specialist

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	***Frequency***	***Responsibility***
	palaeontological material.	▪ A Heritage Management Plan (HMP) must be developed for all heritage resources located within the proposed development footprint, and all heritage resources that require no-go buffer zones. The HMP must be submitted to SAHRA prior to construction commencing. ▪ The ECO should be trained by a specialist palaeontologist for the identification of potential for fossils to be uncovered during excavations. As many excavations as possible should be monitored by the ECO during construction and if any fossils are uncovered they should be protected *in situ* and immediately reported to a palaeontologist in order to plan a way forward. ▪ These no-go sites should be examined periodically by the ECO during the construction phase to ensure that they are being respected and secure and fenced off during the construction phase.	layout and routing. ▪ Appoint a professional archaeologist to carry out a pre-construction walk down survey. ▪ Ensure and verify that the significant palaeontological and archaeological sites identified in the HIA are included on project maps and regarded as no-go zones with buffers during the planning and design phase. Review the site layout plan, and signed minutes of meetings or signed reports.	▪ On-going	▪ ECO
Impacts to the natural and cultural landscape.	Reduce the degree of visual contrast in the landscape.	▪ Plan to use an earth-coloured paint on the built elements of the facility.	▪ Include earth-coloured paint in the design specifications for the facility.	▪ Once-off	▪ Project Developer
A.7. SOCIAL IMPACTS					
In-migration of potential job seekers into the Kleinzee area.	Proactively manage the in-migration of potential employment seekers and in so doing mitigate impacts on existing social structures.	▪ Develop and implement a Workforce Recruitment Plan. ▪ Reserve employment, where practical, for local residents.	▪ Mitigation measures require the drafting of a document which would in each instance serve as the method through which the mitigation actions are monitored.	▪ Once-off during the design phase.	▪ Project Developer

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	***Frequency***	***Responsibility***
		▪ Clearly define and agree upon the Project Affected People (PAP). ▪ Develop a database of PAP and their relevant skills and experience. ▪ Develop and implement a Stakeholder Engagement Plan.	▪ Mitigation measures require clear statements regarding for whom work would be reserved and who the PAP is.		
Impacts to local economic development	Draft an Economic Development Plan to align local investment with bona fide local needs.	▪ The Economic Development Plan should adhere to all requirements of the relevant RFP at that time of implementation.	▪ The drafting of the EDP would serve as the method through which the mitigation action is monitored.	▪ Once-off during the design phase.	▪ Project Developer
A.8. NOISE IMPACTS					
Impacts of increased noise levels on noise sensitive receptors	Reduce/avoid the impact of noise on noise sensitive receptors	▪ Ensure that the project layout avoids sensitive noise receptors (buffers of 1000 m should be adhered to). ▪ Construction at night should be avoided.	▪ Ensure that the recommended mitigation measures and buffers are implemented as proposed by the specialist.	▪ During design cycle and before construction commences.	▪ Project Developer
B. CONSTRUCTION PHASE					
B.1. TERRESTRIAL ECOLOGY (FAUNA & FLORA) IMPACTS					
Habitat loss due to clearance of vegetation and plant SCC	Avoid and/or minimize habitat loss	▪ No development of turbines, roads or other infrastructure within No-Go areas as identified in the Ecology Impact Assessment (Appendix G). ▪ Demarcate all areas to be cleared with construction tape or other appropriate and effective means. However caution should be exercised to avoid using material that might entangle fauna. ▪ Preconstruction walk-through of the development	▪ Ensure that no-go areas are clearly marked and monitor if these areas are avoided and report non-compliance. ▪ Ensure that the construction area is demarcated clearly and that construction personnel are made	▪ At the start of construction phase when laydown area is placed. ▪ During the construction phase as infrastructure is constructed and	▪ Project Developer ▪ ECO ▪ Botanist/Ecology specialist

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	***Frequency***	***Responsibility***
		footprint to further refine the layout and reduce impacts on SCC through micro-siting of the turbines and access roads	aware of these demarcations. Monitor via site inspections and report non-compliance.	erected. ▪ Before areas are cleared	
Disturbance of resident fauna due to habitat loss and noise	Avoid and/or minimize habitat loss, construction noise and disturbance	▪ Ensure that lay-down and other temporary infrastructure is within medium- or low- sensitivity areas, preferably previously transformed areas if possible. ▪ Search and rescue for reptiles and other vulnerable species during construction, before areas are cleared. ▪ During construction any fauna directly threatened by the construction activities should be removed to a safe location by the ECO or other suitably qualified person. ▪ Limit access to the site and ensure that construction staff and machinery remain within the demarcated construction areas during the construction phase. ▪ Environmental induction for all staff and contractors on-site. ▪ All construction vehicles should adhere to a low speed limit (40km/h for cars and 30km/h for trucks) to avoid collisions with susceptible species such as snakes and tortoises and rabbits or hares. Speed limits should apply within the facility as well as on the public gravel access roads to the site. ▪ If any parts of site such as construction camps must be lit at night, this should be done with low-UV	▪ Ensure that the construction area is demarcated clearly and that construction personnel are made aware of these demarcations. Monitor via site inspections and report non-compliance. • Monitor if fauna that will be potentially affected during construction is removed to a safe place.	▪ At the start of construction phase when laydown area is placed. During the construction phase as infrastructure is constructed and erected. ▪ Before areas are cleared ▪ Daily as required ▪ Daily ▪ At least once before construction commences and during induction training ▪ Daily ▪ Monthly	▪ Project Developer ▪ ECO ▪ Faunal specialist

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	*Frequency*	*Responsibility*
		type lights (such as most LEDs) as far as practically possible, which do not attract insects and which should be directed downwards.			
B.2. BIRD IMPACTS					
Habitat destruction of birds	Manage clearing of vegetation	▪ Where feasible, construct minimum number of turbines required to meet project MW output. ▪ Implement CEMP. ▪ High traffic areas and buildings such as offices, batching plants, storage areas etc. should where possible be situated in areas that are already disturbed; ▪ Existing roads and farm tracks should be used where possible; ▪ The minimum footprint areas of infrastructure should be used wherever possible, including road widths and lengths; ▪ Sensitive zones and no-go areas (e.g. nesting areas) are to be avoided as indicated in the Bird Impact Assessment (Appendix H); ▪ No off-road driving; ▪ ECO to oversee activities and ensure that the site specific construction environmental management plan (CEMP) is implemented and enforced; ▪ Prior to construction, the avifaunal specialist should conduct a site walkthrough, covering the final road and power line routes as well as the final turbine positions, to identify any nests/breeding activity of	▪ Develop and implement the CEMP. Monitor the implementation and effectiveness of the plan and report on non-compliance. ▪ Placement of project infrastructure in disturbed area. ▪ No-go areas to be clearly demarcated and construction personnel are to be informed that these areas should be avoided. ▪ Monitor if the mitigation measures listed are implemented and adhered to in the construction phase. Report non-compliance. ▪ Ensure training of construction staff to identify Red Data and priority bird species.	▪ CEMP to be developed before the construction commences. ▪ CEMP to be implemented through-out the construction phase. ▪ Ongoing monitoring. ▪ Training to be done before construction commences.	▪ Project Developer ▪ Contractor ▪ ECO ▪ Avifaunal specialist

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	***Frequency***	***Responsibility***
		sensitive species, as well as any additional sensitive habitats within which construction activities may need to be excluded; ▪ The construction Phase ECO, the onsite Environmental Manager, and the client's representative on site (e.g. the resident engineer) are to be trained to identify Red Data and priority bird species, as well as their nests. If any nests or breeding locations for this species are located, the avifaunal specialist is to be contacted for further instruction; and ▪ Following construction, rehabilitation of all areas disturbed (e.g. temporary access tracks and laydown areas) must be undertaken and to this end a habitat restoration plan is to be developed by a specialist and included within the CEMP.			
Disturbance and displacement of birds	Manage noise and disturbance from staff and construction activities	▪ A CEMP must be implemented, which gives appropriate and detailed description of how construction activities must be conducted. All contractors are to adhere to the CEMP and should apply good environmental practice during construction; ▪ Prior to construction, the avifaunal specialist should conduct a site walkthrough, covering the final infrastructure (e.g. road, substation, offices, turbine positions etc.) to identify any nests/breeding/roosting activity of sensitive species, as well as any additional sensitive habitats. The results of which may inform the final construction schedule, including abbreviating	▪ Develop and implement the CEMP. Monitor the implementation and effectiveness of the plan and report on non-compliance. ▪ Placement of project turbines outside of sensitive areas. ▪ No-go areas to be clearly demarcated and construction personnel are to be informed accordingly. ▪ Monitor if the mitigation measures listed are implemented	▪ CEMP to be developed before the construction commences. ▪ CEMP to be implemented through-out the operational phase. ▪ Ongoing monitoring. ▪ Training to be conducted before construction commences.	▪ Project Developer ▪ Contractor ▪ ECO ▪ Avifaunal specialist

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	*Frequency*	*Responsibility*
		construction time, scheduling activities around avian breeding and/or movement schedules, and lowering levels of associated noise; ▪ Sensitive zones and no-go areas are to be designated by the specialist (e.g. nesting sites) and must be avoided. No turbines to be places in no-go areas; ▪ The construction Phase ECO, the onsite Environmental Manager, and the client's representative on site (e.g. the resident engineer) are to be trained to identify Red Data and priority bird species, as well as their nests. The ECO and Environmental Manager must then, during audits/site visits, make a concerted effort to look out for such breeding activities of Red Data species, and such efforts may include the training of construction staff (e.g. in Toolbox talks) to identify Red Data species, followed by regular questioning of staff as to the regular whereabouts on site of these species. If any nests or breeding locations for these species are located, the avifaunal specialist is to be contacted for further instruction; and ▪ ECOs to oversee activities and ensure that the CEMP is implemented and enforced.	and adhered to in the operational phase. Report non-compliance. ▪ Ensure training of construction staff to identify Red Data and priority bird species as well as their nests.		
B.3. BAT IMPACTS					
Roost disturbance of bats	Minimize excessive noise, dust and blasting during construction activities.	▪ Avoid construction activities near roosts which include buildings, trees and rocky crevices. It is recommended that a bat specialist surveys the confirmed turbine and pylon locations and the	▪ Develop and implement the CEMP. Monitor the implementation and effectiveness of the plan and report on non-	▪ CEMP to be developed before the construction commences.	▪ Project Developer ▪ Contractor

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	***Frequency***	***Responsibility***
		locations of all other proposed site infrastructure for the presence of confirmed roosts before any construction activities commence. ▪ Adhere to sensitivity map (Figure 1 of the Bat Impact Assessment (Appendix I). ▪ Survey turbine locations and infrastructure for presence of roosts.	compliance. ▪ Placement of project turbines outside of sensitive areas. ▪ No-go areas to be clearly demarcated and construction personnel are to be informed accordingly. ▪ Monitor if the mitigation measures listed are implemented and adhered to in the operational phase. Report non-compliance. ▪ Ensure training of construction staff to identify Red Data and priority bird species as well as their nests. ▪ Survey turbine locations for presence of bat roosts.	▪ CEMP to be implemented through-out the operational phase. ▪ Ongoing monitoring ▪ Before construction commences and ongoing during construction.	▪ ECO ▪ Avifaunal specialist
Roost destruction and bat mortality	Avoid or limit the removal of buildings, trees or rocky outcrops (bat roosts)	▪ Construction Phase EMP. ▪ The WEF and grid connection infrastructure must be designed and constructed in such a way as to avoid the destruction of potential roosts, particularly trees, rocky crevices (if blasting is required) and buildings. ▪ No construction activities with the potential to physically affect any bat roosts will be permitted without the express permission of a suitably qualified bat specialist following appropriate investigation and mitigation.	▪ Oversee activities to ensure that the Construction EMPr implemented and enforced via site audits and inspections. Report and record any non-compliance. ▪ Ensure that the construction area and footprint is kept to a minimum. Carry out regular site inspections to verify the limits of the construction area to ensure unnecessary disturbance is	▪ On a daily basis ▪ Weekly ▪ Once-off prior to the completion of construction. .	▪ ECO ▪ Bat specialist ▪ ECO, Project Developer and Rehabilitation Specialist ▪ ECO and Construction Manager or Contractor

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	***Frequency***	***Responsibility***
		▪ It is recommended that a bat specialist surveys the confirmed turbine locations and the locations of all other site infrastructure, such as pylons, for the presence of occupied roosts among the potential roosts before any construction activities commence and once the preliminary design and layout of the site is complete. ▪ If occupied roosts are confirmed these should be buffered based on best practise guidelines, which includes a minimum buffer of 200 m (Figure 1 of the Bat Impact Assessment in Appendix I). ▪ A site-specific CEMP must be created, which gives appropriate and detailed description of how construction activities must be conducted to reduce unnecessary destruction of bat habitat. All contractors are to adhere to the CEMP and should apply good environmental practice during construction. ▪ During construction, laydown areas and temporary access roads should be kept to a minimum in order to limit direct vegetation loss and habitat fragmentation, while designated no-go areas must be enforced i.e. no off road driving. ▪ Following construction, rehabilitation of all areas disturbed (e.g. temporary access tracks and laydown areas) must be undertaken and a habitat restoration plan must be developed by a specialist and included within the CEMP.	avoided. ▪ Bat roosts should be avoided and buffered as indicated in the Bat Impact Assessment (Appendix I).. ▪ Appoint a bat specialist to do a walk through to survey turbine locations and project footprint for the presence of roosts. ▪ Ensure that construction personnel are made aware of the impacts relating to off-road driving. Construction access roads must be demarcated clearly. Undertake site inspections to verify. ▪ Ensure that the construction area is demarcated clearly and that construction personnel are made aware of these demarcations. Monitor via site inspections and report non-compliance. ▪ Appointment of Rehabilitation Specialist to develop a Habitat Restoration Plan and ensure that it is approved by auditing the final and signed report acceptance. ▪ Monitor rehabilitation via site audits and site inspections to ensure compliance. Record and		

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	***Frequency***	***Responsibility***
			report any non-compliance.		
Habitat modification through the removal of foraging and commuting habitat	Avoid disturbance to bat habitats.	▪ Limiting the removal of vegetation. ▪ Develop and implement Construction Phase EMP. ▪ Rehabilitate disturbed areas. ▪ This impact must be reduced by limiting the removal of vegetation as far as possible. A site-specific CEMP must be created, which gives appropriate and detailed description of how construction activities must be conducted to reduce unnecessary destruction of bat habitat. All contractors are to adhere to the CEMP and should apply good environmental practice during construction. ▪ Before construction commences, a bat specialist should conduct a site walkthrough, covering the final road and power line routes as well as the final turbine positions, to identify any roosts/activity of sensitive species, as well as any additional sensitive habitats. ▪ During construction laydown areas and temporary access roads should be kept to a minimum in order to limit direct vegetation loss and habitat fragmentation, while designated no-go areas must be enforced i.e. no off-road driving. ▪ Following construction, rehabilitation of all areas disturbed (e.g. temporary access tracks and laydown areas) must be undertaken and a habitat restoration plan must be developed by a specialist	▪ Oversee activities to ensure that the Construction EMPr is implemented and enforced via site audits and inspections. Record and report any non-compliance. ▪ Ensure that the construction area and footprint is kept to a minimum. Carry out regular site inspections to verify the limits of the construction area to ensure unnecessary disturbance is avoided. ▪ Appoint a bat specialist to do a site walk through to survey turbine locations and project footprint for the presence of roosts/activity of sensitive species or habitats. ▪ Ensure that construction personnel are made aware of the impacts relating to off-road driving. Construction access roads must be demarcated clearly. Undertake site inspections to verify. ▪ Ensure that the construction area is demarcated clearly and that construction personnel are made	▪ On a daily basis ▪ Weekly ▪ Once-off prior to the completion of construction. ▪ Ongoing through-out the construction phase. .	▪ ECO ▪ Bat specialist ▪ ECO, Project Developer and Rehabilitation Specialist ▪ ECO and Construction Manager or Contractor

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	***Frequency***	***Responsibility***
		and included within the CEMP.	aware of these demarcations. Monitor via site inspections and report non-compliance. ▪ Appointment of Rehabilitation Specialist to develop a Habitat Restoration Plan and ensure that it is approved by auditing the final and signed report acceptance. ▪ Monitor rehabilitation via site audits and site inspections to ensure compliance. Record and report any non-compliance.		
Displacement of Red Data species due to permanent habitat transformation associated with construction activities.	Manage habitat transformation and conserve Red Data species. Prevent unnecessary impacts on the surrounding environment by ensuring that contractors are aware of the requirements of the site-specific Construction EMPr.	▪ A site-specific Construction EMPr must be implemented, which gives an appropriate and detailed description of how construction activities must be conducted to reduce unnecessary destruction and degradation of habitat. All contractors are to adhere to the Construction EMPr and should apply good environmental practice during construction. The Construction EMPr should specifically include the following: ▪ The minimum footprint areas for infrastructure should be used wherever possible, including road widths and lengths; ▪ Ensure that no off-road driving is allowed; ▪ Ensure maximum use of existing roads; ▪ Measures to control dust;	▪ Oversee activities to ensure that the Construction EMPr is implemented and enforced via site audits and inspections. Report and record any non-compliance. ▪ Ensure that the construction area and footprint is kept to a minimum. Carry out regular site inspections to verify the limits of the construction area to ensure unnecessary disturbance is avoided. ▪ Ensure that construction personnel are made aware of the impacts relating to off-road driving. Construction access	▪ On a daily basis ▪ Weekly ▪ Weekly ▪ Weekly ▪ Weekly ▪ Weekly ▪ Once-off prior to the completion of construction. ▪ Construction EMPr to be implemented throughout the construction phase. ▪ Monthly during the	▪ ECO ▪ ECO ▪ ECO ▪ ECO ▪ ECO ▪ ECO ▪ ECO, Project Developer and Rehabilitation Specialist ▪ ECO and Construction Manager or Contractor

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	***Frequency***	***Responsibility***
		▪ Ensure that access to the rest of the property is restricted; and ▪ Following construction, rehabilitation of all areas disturbed (e.g. temporary access tracks) must be undertaken and to this end a habitat restoration plan is to be developed by a rehabilitation specialist and implemented accordingly.	roads must be demarcated clearly. Undertake site inspections to verify. ▪ Construction access roads must be demarcated clearly. Undertake site inspections to verify. ▪ Monitor the implementation of dust control mechanisms via site inspections and record and report non-compliance. ▪ Ensure that the construction area is demarcated clearly and that construction personnel are made aware of these demarcations. Monitor via site inspections and report non-compliance. ▪ Appointment of Rehabilitation Specialist to develop a Habitat Restoration Plan and ensure that it is approved by auditing the final and signed report acceptance. ▪ Monitor rehabilitation via site audits and site inspections to ensure compliance. Record and report any non-compliance.	construction phase.	
Displacement of Red Data species due to	Prevent unnecessary displacement of Red Data	▪ A site-specific Construction EMPr must be implemented, which gives an appropriate and	▪ Oversee activities to ensure that the Construction EMPr is	▪ On a daily basis	▪ ECO

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	***Frequency***	***Responsibility***
disturbance associated with construction activities.	avifauna by ensuring that contractors are aware of the requirements of the Construction EMPr.	detailed description of how construction activities must be conducted. All contractors are to adhere to the Construction EMPr and should apply good environmental practice during construction. The Construction EMPr must specifically include the following: - Ensure that no off-road driving is allowed; - Ensure maximum use of existing roads; - Measures to control noise; - Ensure that access to the rest of the property is restricted; - Ensure that the footprint is restricted to the absolute minimum; - The appointed ECO must be trained by an avifaunal specialist to identify the potential priority species as well as the signs that indicate possible breeding by these species. The ECO must then, during audits/site visits, make a concerted effort to look out for such breeding activities of Red Data species, and such efforts may include the training of construction staff to identify Red Data species, followed by regular questioning of staff as to the regular whereabouts on site of these species. If any of the Red Data species are confirmed to be breeding (e.g. if a nest site is found), construction activities within 500 m of the breeding site must cease, and an avifaunal specialist is to be contacted immediately for	implemented and enforced via site audits and inspections. Report and record any non-compliance. ▪ Ensure that construction personnel are made aware of the impacts relating to off-road driving. Construction access roads must be demarcated clearly. Undertake site inspections to verify. ▪ Construction access roads must be demarcated clearly. Undertake site inspections to verify. ▪ Monitor the implementation of noise control mechanisms via site inspections and record and report non-compliance. ▪ Ensure that the construction area is demarcated clearly and that construction personnel are made aware of these demarcations. Monitor via site inspections and report non-compliance. ▪ Appoint an Avifauna Specialist prior to the construction phase to train and guide the ECO in order identify potential priority species and signs for potential	▪ Weekly ▪ Weekly ▪ Weekly ▪ Weekly ▪ Once-off before construction commences, for a three-day period. ▪ Weekly ▪ Once-off and ensure all new construction personnel are trained in this regard. ▪ Throughout construction when breeding sites are found. ▪ Once-off before the start of construction activities	▪ ECO ▪ ECO ▪ ECO ▪ ECO ▪ Project Developer Avifauna Specialist and ECO ▪ ECO ▪ ECO ▪ Project Developer Avifauna Specialist and ECO ▪ Project Developer, Avifauna Specialist and ECO

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	***Frequency***	***Responsibility***
		further assessment of the situation and instruction on how to proceed; and ▪ Prior to construction, an avifaunal specialist should conduct a site walk through, covering the final service road and power line routes, to identify any nests/breeding/roosting activity of priority species, as well as any additional sensitive habitats. The results of which may inform the final construction schedule in close proximity to that specific area, including abbreviating construction time, scheduling activities around avian breeding and/or movement schedules, and lowering levels of associated noise.	breeding. ▪ ECO to undertake site visits and audits to find breeding sites. ▪ ECO to provide training and information sessions to the construction personnel to identify Red Data species. Conduct regular audits of attendance registers for training. ▪ Ensure that construction activities are stopped within 500 m of any breeding sites of Red Data species. Ensure that an Avifaunal Specialist is contacted immediately for further assessment. Conduct audits to verify the placement of the buffer area and verify if the Avifaunal Specialist has been appointed. ▪ Appointment of Avifaunal Specialist to conduct site walk through of the final service road and power line routes. Record and report any non-compliance.		
B.4. IMPACTS ON DRY AND EPHEMERAL WATERCOURSES					
Physical disturbance and destruction of dry and ephemeral	As far as possible, avoid identified sensitive dry and ephemeral watercourses	▪ Ecology specialist/ ECO to confirm adequate avoidance of sensitive features. No construction	▪ Carry out visual inspections to ensure strict control over the behaviour of staff in order to	▪ Ongoing	▪ ECO ▪ Contractor,

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	***Frequency***	***Responsibility***
watercourses (incl. drainage lines) due to land and vegetation clearance.	(incl drainage lines) and associated buffers. (The current layout already avoids the identified drainage lines).	within drainage lines. ▪ Minimise the footprint of cleared vegetation. ▪ Phased clearance of the area in order to reduce the amount and duration of bare soil exposure. ▪ Establish an effective record keeping system for each area where soil is disturbed. ▪ Commence with restoration of disturbed, cleared land as soon as possible (e.g. non-permanent features such as the crane platforms and laydown and construction areas).	restrict activities to within demarcated areas. Record non-compliance and incidents. ▪ Monitor if a record keeping system is in place and updated ▪ Monitor the construction period to verify if this is being undertaken (where possible). ▪ Monitor if restoration of disturbed areas are effected as soon as possible. Record non-compliance.		Project Developer and ECO
Altered drainage patterns, increased runoff, erosion and sedimentation of surrounding ecosystems due to land and vegetation clearance.	As far as possible, avoid identified sensitive dry and ephemeral watercourses, drainage lines and associated buffers. (The current layout already avoids the identified drainage lines).	▪ Keep the footprint of the disturbed area to the minimum and designated areas only. ▪ Limit hard surfaces on site to reduce runoff. ▪ Clear site only before a section is due to be constructed. ▪ Phased clearance of the area in order to reduce the amount and duration of bare soil exposure. ▪ Commence with restoration of disturbed, cleared land as soon as possible (e.g. non-permanent features such as the crane platforms and laydown and construction areas). ▪ Implement net barriers, active rehabilitation and other erosion control measures. ▪ Implement an effective system of storm water	▪ Carry out visual inspections to ensure strict control over the behaviour of staff in order to restrict activities to within demarcated areas. Record non-compliance and incidents. ▪ Monitor the construction period to verify if the mitigation measures are adhered to. ▪ Monitor if restoration of disturbed areas are effected as soon as possible. Record non-compliance. ▪ Monitor the effectiveness of the stormwater system and revise it	▪ Ongoing	▪ ECO ▪ Contractor, Project Developer and ECO

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	***Frequency***	***Responsibility***
		runoff control using bunds and ditches, where it is required (at points where water accumulation might occur).	where necessary.		
Alteration of surface water quality leading to changes in water chemistry.	To manage construction activities that may impact on surface and subsurface water quality.	▪ Avoidance of significant earthworks with concomitant risk of increasing silt mobility. ▪ Conduct judicious excavation and clearance. ▪ Undertake stabilisation of disturbed soils. ▪ Implement the use of surface flow attenuators or energy dissipaters (if required). ▪ Management of potential liquid material that may be classified as hazardous. ▪ Management of hazardous waste. ▪ Avoid significant sculpting of land and maintenance of the general topography of site.	▪ Undertake site and visual inspections and reporting any non-compliance. ▪ Containment of hazardous waste and hazardous materials.	▪ Ongoing	▪ Contractors, Project Developer and ECO
Alteration of surface drainage patterns on account of construction activities leading to change in plant communities and general habitat structure.	Limit alteration of surface drainage, leading to changes in plant communities and general habitat structure, patters due to construction activities.	▪ Avoidance of major drainage features during construction. The proposed project footprint must be demarcated to reduce unnecessary disturbance beyond the proposed project area. Demarcate as no-go areas. ▪ Undertaking and completion of earthworks and road construction outside of the high rainfall period (if possible). ▪ Avoidance of significant sculpting of land and maintenance of the general topography of the site. ▪ Maintenance of a high level of housekeeping on site during the construction phase.	▪ Carry out visual inspections to ensure strict control over the behaviour of staff in order to restrict activities to within demarcated areas. ▪ Monitor the construction period to verify if this is being undertaken (where possible). ▪ Carry out visual inspections to ensure minimal impact on soils and erosion. ▪ Monitor the condition of the site camp throughout the	▪ Ongoing ▪ Ongoing ▪ Ongoing ▪ Ongoing ▪ Ongoing	▪ ECO ▪ Contractor, Project Developer and ECO ▪ Contractor, Project Developer and ECO ▪ ECO ▪ Contractor, Project

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	***Frequency***	***Responsibility***
		▪ Inspection of drainage features immediately outside of the footprint of the proposed WEF and undertake removal of solid waste and litter on a regular basis.	construction phase via visual site inspections. Record non-compliance and incidents. ▪ Monitor the condition of drainage features immediately outside of the footprint of the WEF and the condition of the construction area throughout the construction phase via visual site inspections. Record non-compliance and incidents.		Developer and ECO
B.5. VISUAL IMPACTS					
Potential visual intrusion, dust and noise of construction activities on existing views of sensitive visual receptors.	Prevent unnecessary visual clutter and focusing attention of surrounding visual receptors on the proposed development.	▪ Preparation of the wind energy area (i.e. clearance of vegetation, grading, contouring and compacting) and wind turbine construction should be phased in a way that makes practical sense in order to minimize the area of soil exposed and the shortest duration of exposure. ▪ Location of the construction camp, batching plant and related storage/stockpile areas in unobtrusive positions in the landscape. ▪ Employment of dust suppression measures. ▪ Implementation of litter control measures.	▪ Ensure that this is taken into consideration prior to the commencement of construction. ▪ Conduct site inspections to monitor the phasing of construction to verify unnecessary soil disturbance and clearing and report any non-compliance. ▪ Conduct site inspections to monitor effectiveness of dust suppression and litter control measures and clearing and report any non-compliance.	▪ Once-off during the construction phase. ▪ Weekly ▪ Daily	▪ Project Owner and Contractor ▪ ECO ▪ ECO

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	***Frequency***	***Responsibility***
		▪ Where possible construction camps and laydown areas should be located (where sensitive visual receptors are least likely to be affected): - In low visibility areas (e.g. avoid ridgelines and open plains); - Previously disturbed areas (e.g. clearings created by farmers for other purposes which are no longer being used); and/or - Areas near derelict farmsteads (taking into consideration the findings of the Heritage Impact Assessment as well as other assessments that may be relevant), particularly where existing trees can be used to screen these areas from views.	▪ Ensure that this is taken into consideration for the siting of the proposed construction site camp and laydown area. Carry out visual inspections to ensure the construction camp and laydown area are demarcated clearly, and record and report any non-compliance. ▪ Carry out visual inspections to ensure strict control over the boundary of the site camp and laydown area in order to restrict activities to within demarcated areas.	▪ Weekly ▪ Weekly	▪ ECO ▪ ECO
		▪ Parking areas should be demarcated and strictly controlled so that vehicles are limited to specific areas only.	▪ Carry out visual inspections to ensure the construction area and parking area is demarcated clearly, and record and report any non-compliance.	▪ Weekly ▪ Weekly	▪ ECO ▪ ECO
	Reduce the visual impact of construction activities project wide.	▪ Maintain good housekeeping on site to avoid litter and minimize waste. ▪ Monitor construction sites for strict adherence to demarcated boundaries. ▪ Monitor adherence to lighting plan. ▪ Monitor adherence to rehabilitation plan.	▪ Carry out site visits and inspections of the construction sites and ensure good housekeeping is maintained. Record and report any non-compliance. ▪ Complaints about night lights should be investigated and	▪ Daily and as complaints arise.	▪ Construction Manager and ECO

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	***Frequency***	***Responsibility***
		▪ Monitor adherence to erosion control plan. ▪ Monitor adherence to dust and fire control plans. ▪ Monitor that existing roads will be used for access as far as possible and that construction of new access roads is minimized.	documented in a register. Investigate any complaints about night lights and document it in a register. ▪ Visit sites requiring rehabilitation. ▪ Carry out site visits and record and report any non-compliance.		
B.6. HERITAGE IMPACTS (ARCHAEOLOGY AND CULTURAL LANDSCAPE)					
Clearing of vegetation and excavation of foundations	Avoid or minimize the destruction or disturbance of archaeological materials.	▪ Ensure that project layout avoids as many known archaeological resources, graves and/or palaeontological material as possible, in close proximity to the proposed development footprint. ▪ A Heritage Management Plan (HMP) must be developed for all heritage resources located within the proposed development footprint, and all heritage resources that require no-go buffer zones. The HMP must be submitted to SAHRA prior to construction commencing. ▪ Ensure and verify that the archaeological sites identified in the HIA are included on project maps and regarded as no-go zones with buffers during the planning and design phase. ▪ Appoint a professional archaeologist to carry out a pre-construction walk down survey. ▪ Excavation and sampling of affected archaeological sites (stone artefacts).	▪ Appoint an archaeologist to conduct a walk-down survey of the final approved layout before construction. ▪ Carry out visual inspections to ensure strict control over the behaviour of construction staff in order to restrict activities in demarcated no-go areas. ▪ HMP to be developed and submitted to SAHRA for approval.	▪ Once off before construction commences. ▪ Weekly	▪ Heritage specialist ▪ Project Owner ▪ ECO
Construction	Minimize the chances of	▪ A walk-down survey of the final approved layout	▪ Conduct a walk-down survey of	▪ Once off before	▪ Heritage

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	***Frequency***	***Responsibility***
vehicles and activities could result in damage to or destruction of archaeological sites and/or graves.	significant archaeological sites and/or graves being disturbed.	will need to be conducted prior to construction. Any sites found during this survey and that require mitigation would need to be mitigated well in advance (at least six months) of the commencement of construction in order to allow time in case there are further requirements that need to be met (for example radiocarbon dating or further work on any sites that revealed even more significant material than was evident from the surface). ▪ Ensure that no activity takes place outside of the authorized construction footprint.	the final approved layout before construction. ▪ Carry out visual inspections to ensure strict control over the behaviour of construction staff in order to restrict activities to within demarcated areas.	construction commences. ▪ Weekly	specialist ▪ ECO
		▪ The Contractor and ECO must be informed of the possibility of any heritage material (i.e. ensure that all personnel are aware of the potential of encountering graves and what to do if this occurs (i.e. to report any suspicious stone features prior to disturbance)). ▪ The informal graveyard in the south-east should be treated as a no-go area. It is away from the development footprint but the ECO should be aware of its existence and ensure that the relevant section of farm track is never used by construction vehicles. ▪ Alternatively commission an archaeologist to examine the final development footprint at least six months prior to the commencement of construction.	▪ Carry out Environmental Awareness Training to ensure that the Contractors are informed of the possible type of heritage features that may be encountered during the construction phase. ▪ Conduct audits of the signed attendance registers. ▪ Carry out visual inspections to ensure that no-go areas such as graves be avoided during the construction phase. ▪ Appoint a professional archaeologist to examine the construction footprint. ▪ Conduct an audit to verify that	▪ Once-off training and ensure that all new staff are inducted. ▪ Monthly ▪ Once-off six months prior to construction. ▪ As required/ necessary during the construction phase.	▪ Contractor/ ECO ▪ ECO ▪ Archaeologist ▪ Project Owner

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	***Frequency***	***Responsibility***
			the necessary permits are obtained by the archaeologist, if required.		
		▪ If archaeological sites and potential graves cannot be avoided, the buffers as stipulated in the HIA (Appendix L) should be implemented during the construction phase. ▪ The graveyards at PAN2017/001 (waypoint 1376) and PAN2017/003 (waypoint 1378) must be cordoned off as necessary, avoided and protected. ▪ The historical sites at PAN2017/002 (waypoint 1377), PAN2017/004 (waypoint 1399), PAN2017/005 (waypoint 1413) and KOM2017/001 (waypoint 1420) must be cordoned off if necessary, protected and avoided. ▪ These sites should be cordoned off in advance of the development commencing (the mitigation archaeologist could be called on to assist with this if needed).	▪ Ensure archaeological sites are cordoned off. ▪ Carry out visual inspections to ensure strict control over the behaviour of construction staff in order to restrict activities to within demarcated areas and outside of the buffer areas to ensure that the cordoned off areas remain free of disturbance.	▪ Once off before construction commences ▪ Weekly	▪ ECO/Archaeo-logist
		▪ If any of the graves or potential graves found on site cannot be avoided then an archaeologist should be contracted to conduct a test excavation to determine the status of the feature. If it is determined to be a grave, then exhumation would need to occur (if necessary) with the permission of SAHRA (and in accordance with any requirements that SAHRA might impose at the time).	▪ Appoint a professional archaeologist to conduct a test excavation to determine if the sites are graves. ▪ Conduct an audit to verify that the necessary permits are obtained by the archaeologist for the test excavation, if required.	▪ As potential graves are encountered	▪ Project Owner
		▪ If any concentrations of archaeological material,	▪ Monitor excavations and	▪ Daily or during	▪ Contractor and

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	***Frequency***	***Responsibility***
		graves or stone features are uncovered during the proposed construction, work in the immediate area should be halted. The find would need to be reported to the heritage authorities and may require inspection by an archaeologist. Such heritage is the property of the state and may require excavation and curation in an approved institution. Sufficient time should be allowed to remove/collect such material.	construction activities for archaeological materials via visual inspections and report the finds accordingly. ▪ Contact the heritage authorities and the identified archaeologist if any heritage features are uncovered.	excavations. ▪ As required/ necessary during the construction phase.	ECO ▪ Project Owner
Impacts to the cultural landscape and disruption of traditional activities	Reduce visual contrast of the development in the landscape. Reduce visual intrusion into cultural landscape & disruption of traditional activities.	▪ Minimize surface footprint and the amount of white structures visible. ▪ Roads must be designed in such a way as to minimise cut and fill operations in order to reduce landscape scarring. ▪ Minimise fencing in communal lands that is used for traditional practices such as herding and the collection of natural products..	▪ Monitor the paint colour via visual inspections and report non-compliance.	▪ Once-off, at an appropriate time during construction period.	▪ Project developer ▪ Contractor ▪ ECO
B.7. PALAEONTOLOGICAL HERITAGE IMPACTS					
Loss of palaeontological heritage resources at or beneath ground surface within the development footprint (fossils, fossil sites and contextual	Reporting, conservation, recording and judicious sampling of scientifically important fossil material exposed during the construction phase of development.	▪ Reporting chance fossil finds to SAHRA for possible professional mitigation. Such finds are more likely to be made on the low lands than on the mountains	▪ Monitoring of all substantial excavations into sedimentary bedrocks for fossil material (e.g. vertebrate bones & teeth, fossilized wood, shells) ▪ Safeguarding of chance fossil finds, preferably *in situ*. ▪ Report chance finds to SAHRA	▪ Throughout the construction phase	▪ ECO
		▪ Recording and sampling of fossil material and	▪ Application by a qualified	▪ Following alert of	▪ Qualified

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	***Frequency***	***Responsibility***
geological data).		associated geological data (only necessary for chance fossil finds made during the proposed development).	palaeontologist for fossil collection permit from SAHRA. ▪ Palaeontologist to undertake field study of fossil finds *in situ* on site. Photography and sampling of important finds. ▪ Curation of fossils collected in an approved repository (museum/ university collection).	chance fossil finds on site (It is important to note that there is no need for on-site palaeontological monitoring unless new fossil finds are made during development).	palaeontologist appointed and commissioned by the Project Owner. ▪
B.8. SOILS AND AGRICULTURAL POTENTIAL IMPACTS					
Degradation of veld vegetation beyond the direct footprint of the proposed WEF due to constructional disturbance, dust generation and potential trampling by vehicle traffic	To conserve the surrounding natural veld vegetation.	▪ Minimize footprint of disturbance during the construction phase and ensure that construction work is undertaken within the demarcated area only. ▪ Restrict vehicle access to approved roads and areas only. ▪ Control dust generation during construction activities by implementing standard construction site dust control measures (dampening with water) where required. Because of water scarcity, this should only be done where and when dust generation is a significant problem.	▪ Monitor the construction activities via site audits to ensure that they are undertaken within the demarcated construction area, and record non-compliance and incidents. ▪ Include periodic site inspection in environmental performance reporting that specifically records occurrence or not of off-road vehicle tracks surrounding the site. Monitor via site audits and record non-compliance and incidents. ▪ Monitor dust suppression mechanisms via visual inspections and record non-compliances. Maintain an incidents/ complaints register. The date, time, nature of	▪ Daily ▪ Monthly during the construction phase ▪ Monthly and during complaints / incidents	▪ Contractor and ECO ▪ ECO ▪ Contractor and ECO

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	***Frequency***	***Responsibility***
			complaint, name of complainant and corrective actions must be logged for all complaints. Complaints must be investigated and, if appropriate, acted upon.		
Loss of topsoil due to poor topsoil management as a result of construction activities.	Ensure effective topsoil covering to conserve soil fertility on all disturbed areas, after they have been rehabilitated.	▪ Maintain where possible all vegetation cover and facilitate re-vegetation of denuded areas throughout the site, to stabilize the soil against erosion. ▪ If an activity will mechanically disturb the soil below surface in any way, then any available topsoil should first be stripped from the entire surface to be disturbed and stockpiled for re-spreading during rehabilitation. Topsoil stockpiles must be conserved against losses through erosion by establishing vegetation cover on them. ▪ After cessation of disturbance, re-spread topsoil over the surface. ▪ Dispose of any sub-surface spoils from excavations where they will not impact on land that supports vegetation, or where they can be effectively covered with topsoil.	▪ Establish an effective record keeping system for each area where soil is disturbed for construction purposes. These records should be included in environmental performance reports.	▪ As needed, dependent on the specifics of the construction activities.	▪ ECO
Soil erosion due to alteration of the land surface characteristics.	To reduce erosion on site and downstream of the site as a result of run-off from the site, or due to wind erosion.	▪ Implement an effective system of run-off control, where it is required, that collects and safely disseminates run-off water from all hardened surfaces and prevents potential down slope erosion. ▪ Maintain vegetation cover.	▪ Include periodic site inspection in environmental performance reporting that inspects the effectiveness and integrity of the run-off control system and specifically records the occurrence of any erosion on site	▪ Monthly during the construction phase.	▪ ECO

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	***Frequency***	***Responsibility***
			or downstream. Corrective action must be implemented to the run-off control system in the event of any erosion occurring.		
B.9. SOCIAL IMPACTS					
Influx of job seekers into the Kleinzee area.	Control influx of job seekers into the Kleinzee area with the aim of protecting local social structures.	▪ Implement the Workforce Recruitment Plan. ▪ Ensure employment is reserved, where practical, for local residents. ▪ Actively use the database of PAP and their relevant skills and experience to guide local employment. ▪ Implement the Stakeholder Engagement Plan. ▪ Initiating the education campaign among the local community (in partnership with the community members already active in the area) focusing on alcohol abuse, drug abuse, HIV/AIDS, Sexually Transmitted Diseases etc. prior the start of construction and maintaining these throughout the project's duration. ▪ The applicant and the contractor should implement an HIV/AIDS awareness programme for all workers at the outset of the construction phase. ▪ Arrangements must be made to enable workers from outside the area to return home over the weekends/at regular intervals. This would reduce the risk posed by non-local construction workers to local family structures and social networks. ▪ Make condoms freely available to employees and	▪ Verify that local labour is, as far as practically possible, being used, by cross-referencing the Workforce Recruitment Plan with current recruitment practices, as well as cross-referencing employed personnel with PAP database; ▪ Verify that Stakeholder Engagement Plan is being implemented with written proof of such engagement with the PAP.	▪ Three times during the estimated 14 month construction period (i.e. at 3 months, 6 months, and 9 months).	▪ Construction Manager and ECO

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	***Frequency***	***Responsibility***
		all contractor workers. ▪ Introduce alcohol testing on a weekly basis for construction workers. ▪ Developing a Code of Conduct for all employees related to the project, which includes no tolerance of activities such as alcohol and drug abuse. ▪ Recruitment should be done following a transparent approach and adequately communicated in the area to limit the chances of people staying for longer period in hope of finding a job.			
Outsiders move into the Kleinzee area.	Limit incidences of social deviance in the Kleinzee area.	▪ Implement the Workforce Recruitment Plan. ▪ Ensure employment is reserved, where practical, for local residents. ▪ Actively use the database of PAP and their relevant skills and experience to guide local employment. ▪ Implement the Stakeholder Engagement Plan	▪ Verify that local labour is, as far as practically possible, being used, by cross-referencing the Workforce Recruitment Plan with current recruitment practices, as well as cross-referencing employed personnel with PAP database; ▪ Verify that Stakeholder Engagement Plan is being implemented with written proof of such engagement with the PAP.	▪ Three times during the estimated 14 month construction period (i.e. at 3 months, 6 months, and 9 months).	▪ Construction Manager and ECO
Expectations created regarding possible employment	Prevent frustration resulting from miscommunication of employment opportunities and project-related benefits	▪ Implement the Stakeholder Engagement Plan	▪ Verify that Stakeholder Engagement Plan is being implemented with written proof of such engagement with the	▪ Four times during the estimated 12-18 month construction period (i.e. at 3 months, 6 months,	▪ Construction Manager and ECO

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	***Frequency***	***Responsibility***
	in the local community.		PAP.	and 9 months and 12 months).	
Impact on surrounding land owners associated with the presence of workers	Minimise the risk of stock theft, poaching, increased veld fires and damage to farm infrastructure associated with the presence of workers on the site	▪ No fires should be allowed onsite. ▪ No construction workers, with the exception of security personnel, will be allowed to stay on the site overnight. ▪ A complaints register must be available on site at all time to any individual who may have a complaint. These complaints must be noted and suitable action taken to address the complaint. ▪ The movement of workers on and off the site should be closely managed and monitored by the contractors. In this regard the contractors should be responsible for making the necessary arrangements for transporting workers to and from site on a daily basis; ▪ The project owner is responsible to compensate neighboring land owners for losses incurred, if losses occurred are proven to be due to the development of the WEF and associated electrical infrastructure.	▪ Include periodic site inspection to monitor good house-keeping on site. ▪ Complaints should be registered and monitored and follow up action should be effected by project owner as required. ▪ Monitor and control the movement of workers to and off the site. ▪ Non-authorised visitors should not be allowed on site.	▪ Ongoing during the operational phase.	▪ Project Owner ▪ Construction Manager and ECO
Local spending	Ensure the generation of socio-economic benefits as a result of the multiplier effect.	▪ Procure goods and services, where practical, from as large a selection of local service providers as possible. Only if not readily available in the area can it be obtained from elsewhere.	▪ Verify purchase of local goods and services through proof of purchase.	▪ Three times during the estimated construction period	▪ Construction Manager and ECO
Local employment opportunities	Ensure optimum employment creation and skills development while	▪ Implement the Workforce Recruitment Plan ▪ Implement a 'locals first' policy with regard to	▪ Verify that local labour is, as far as practically possible, being used, by cross-referencing the	▪ Three times during the estimated 14 month construction period	▪ Construction Manager and

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	***Frequency***	***Responsibility***
	taking cognizance of the local levels of experience and education.	labour needs. This can be incorporated into a Workforce Recruitment Policy. The Workforce Recruitment Policy should include: ▪ A clear definition of who is considered to be local residents; known as the Project Affected People (PAP). The purpose of demarcating the PAP is to develop a criterion of characteristics considered to identify a given job seeker as a PAP. Once this criterion is known; all subsequent job seekers can be screened against it in order to determine whether they receive preference for employment; ▪ A database of local residents and their relevant skills and experience; ▪ The selection criteria for allocating jobs; ▪ Reserve employment, where practically possible, for local residents; and ▪ Should be contractually binding. ▪ Where possible, subcontract to local construction companies ▪ Consultation with local authorities is essential so as to manage job creation expectations and ensure that all eligible workers in the primary study area are informed of the opportunities. ▪ Contracts ensuring that on-the-job training is included and enforced as a condition for the development of this project. ▪ To improve the chances of skills development during the construction phase, contractors are	Workforce Recruitment Plan with current recruitment practices, as well as cross-referencing employed personnel with PAP database.	(i.e. at 3 months, 6 months, and 9 months).	ECO

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	***Frequency***	***Responsibility***
		encouraged to provide learner-ships and encourage further knowledge sharing. ▪ To ensure that skills are adequately acquired, additional training programmes need to be held during the construction phase to prepare the identified community members to be employed at the next phase, i.e. the operational phase. ▪ Developers should be open to local recruitment processes and be willing to offer some skills transfer during this phase of the project to ensure the maximum utilisation local labour. ▪ Employ labour intensive construction methods, where economically feasible and technically possible. ▪ Establish a local skills desk to identify the skills set of the local residents available for the construction and operational phases of the WEF and the associated electrical infrastructure			
Economic Development Plan Project expenditure and new economic opportunities	Ensure contribution to local employment, local spending and human capacity development is being made.	▪ Implement the Economic Development Plan ▪ Engage with local communities (Kleinzee and Komaggas) with respect to their possible involvement during construction in providing supporting services such as catering, temporary housing of workers, transportation, etc.	▪ Verify that the Economic development Plan is being implemented.	▪ Four times during the estimated 12-18 month construction period (i.e. at 3 months, 6 months, 9 and 12 months).	▪ Construction Manager and ECO
B.10. NOISE IMPACTS					

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	***Frequency***	***Responsibility***
Increase in ambient sound levels.	Limit the increase in ambient sound levels due to air-borne noise as a result of various construction activities taking place simultaneously during the day and night. Reduce the increase in ambient sound levels and disturbing noise due to various construction vehicles passing close to potential noise-sensitive receptors at night.	▪ Ensure equivalent A-weighted daytime noise levels below 52 dBA at potentially sensitive receptors. ▪ Ensure that maximum noise levels at potentially sensitive receptors be less than 65 dBA; ▪ Prevent the generation of disturbing or nuisance noises; ▪ Ensure acceptable noise levels at surrounding stakeholders and potentially sensitive receptors; ▪ Ensuring compliance with the National Noise Control Regulations; ▪ The developer must investigate any reasonable and valid noise complaint if registered by a receptor staying within 2,000 m from location where construction activities are taking place or operational wind turbine. A complaints register must be kept on site. ▪ The developer should minimize night-time construction traffic if the access road is closer than 140m from NSD, alternatively, the access road must be relocated further than 140m from NSD (night-time traffic passing occupied houses).	▪ Monitor compliance with National Noise Control Standards and Regulations. ▪ Complaints should be registered and monitored and follow up action should be effected as required.	▪ Ongoing through-out the construction phase.	▪ Project Owner ▪ Contractor ▪ ECO
B.11. TRAFFIC IMPACTS					
Increased level of road accidents (involving pedestrians, animals, other	Minimise the impact of the construction activities on the local traffic and avoid accidents with pedestrians, animals and other drivers	▪ Implement the Traffic Management Plan (Section 7 of this EMPr) ▪ Well maintained vehicles should be used together with well-trained drivers during the construction phase.	▪ Carry out random checks of driver licences and conduct random visual inspections of construction vehicles for roadworthiness.	▪ Random visual inspection of vehicles weekly.	▪ Contractor

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	***Frequency***	***Responsibility***
motorists on the surrounding tarred/ gravel road network) due to increased traffic during construction.	on the surrounding tarred/ gravel roads. Reduce number of road accidents due to increased traffic during construction.	▪ Vehicle maintenance and driver competency should be monitored. ▪ Proof of driver competency as well as the vehicle checks should be verified and undertaken to ensure that vehicles are roadworthy and hence, do not pose a safety risk. ▪ The Contractors must ensure that construction vehicles are roadworthy, properly serviced and maintained, and respect the vehicle safety standards implemented by the Project Owner.			
		▪ It is recommended that vehicles are not overloaded during the construction phase in order to reduce impacts on the road structures, particularly the access roads leading to the site. Random visual inspection of vehicles should be undertaken in order to monitor for overloading. The inspections should also verify if the trucks are covered with appropriate material (such as tarpaulin) if and where possible.	▪ Perform visual inspection of vehicles during the construction phase.	▪ Random visual inspection of vehicles weekly.	▪ Contractor
Impact on air quality due to dust generation, noise and exhaust emissions from construction vehicles and equipment.	Limit the release of noise, pollutants and dust emissions	▪ Implement management strategies for dust generation e.g. apply dust suppressant on the exposed areas and stockpiles as relevant.	▪ Ensure dust management measures are in place to adequately decrease the generation of dust.	▪ On-going	▪ Contractor and ECO
Accelerated degradation of road	Limit the deterioration of the road condition due to	▪ Construction activities will have a higher impact than the normal road activity and therefore the	▪ Ensure that the main access road to site maintains current	▪ Weekly	▪ Contractor and

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	***Frequency***	***Responsibility***
structure due to construction traffic.	construction traffic.	local, unsurfaced access roads to site should be inspected on a weekly basis for structural damage.	condition through photographic surveys and monitoring.		ECO
		▪ Make provision for the repairing of subgrade deterioration (i.e. pot holes, dust holes) that could possibly result due to loading of heavy construction vehicles as required.	▪ Make provision for repairs required to road	▪ Ongoing	▪ Contractor and ECO
B.12. WASTE MANAGEMENT					
Pollution of the surrounding environment (including drainage lines) as a result of the handling, temporary stockpiling and disposal of general waste.	Reduce environmental impacts such as soil, surface water and groundwater contamination as a result of incorrect storage, handling and disposal of general waste. Minimise the production of waste. Prevent environmental problems (e.g. pollution / change in soil pH) due to solid and liquid wastes disposed of on the site. Ensure compliance with waste management	▪ General waste (i.e. construction waste, building rubble, discarded concrete, bricks, tiles, wood, glass, window panes, air conditioners, plastic, metal, excavated material, packaging material, paper and domestic waste etc.) generated during the construction phase should be stockpiled temporarily (i.e. once-off) on site in a designated area within suitable waste collection bins and skips (or similar). Waste collection bins and skips should be covered with suitable material, where appropriate.	▪ Monitor the strategic placement of the temporary, designated waste stockpiling area at the site camp via visual inspections, and record and report any non-compliance. ▪ Monitor the temporary storage and handling of general waste on site via site audits and record non-compliance and incidents (i.e. conduct visual inspections of the temporary waste storage area).	▪ Once-off prior to the commencement of the construction phase and as required as the construction phase process evolves. ▪ Daily	▪ ECO and Contractor ▪ ECO
		▪ Should the on-site stockpiling of general waste exceed 100 m^3 and a period of 90 days, then the National Norms and Standards for the Storage of Waste (published on 29 November 2013 under GN 926) must be adhered to.	▪ Record the amount of general waste that is temporarily stockpiled at the designated area on site, as well as the duration and record non-compliance and incidents. ▪ Monitor the duration and amounts of general waste that is	▪ Daily ▪ Weekly ▪ Monthly	▪ Contractor ▪ ECO ▪ Project Developer

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	***Frequency***	***Responsibility***
	legislation.		temporarily stockpiled at the designated area on site via site audits and record non-compliance and incidents (i.e. conduct visual inspections of the temporary waste storage area). ▪ Audit compliance with the Norms and Standards for the Storage of Waste (published on 29 November 2013 under GN 926) if the storage amounts are exceeded (i.e. only if required).		
		▪ Ensure that the designated stockpiling area for general waste (i.e. skips and waste collection bins) is inspected on a daily basis to verify its condition and integrity, particularly after rainfall events.	▪ Monitor the temporary, designated waste stockpiling area at the site camp, as well as the handling of general waste on site via site audits and record non-compliance and incidents.	▪ Daily	▪ ECO
		▪ Ensure that general waste generated during the construction phase is removed from the site on a regular basis, and safely disposed of at an appropriate, licensed waste disposal facility by an approved waste management Contractor. Waste disposal slips or waybills should be kept on file as proof of disposal. As a general principle, waste manifests must be obtained to prove legal disposal of waste.	▪ Ensure that a suitable Waste Management Contractor is appointed to remove and dispose the general waste at an appropriate, licensed waste disposal facility. ▪ Monitor waste disposal slips and waybills via site audits and record non-compliance and incidents.	▪ Once-off prior to the construction phase. ▪ Weekly	▪ Project Developer / Contractor ▪ ECO
		▪ Ensure that the construction site is kept clean at all times and that construction personnel are made	▪ Monitor the condition of the site camp throughout the	▪ Daily	▪ ECO and

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	***Frequency***	***Responsibility***
		aware of correct waste disposal methods. Littering must be prevented through effective site camp management.	construction phase via visual site inspections. Record non-compliance and incidents. ▪ Carry out Environmental Awareness Training. ▪ Conduct audits of the signed attendance registers.	▪ Once-off training and ensure that all new staff are inducted. ▪ Monthly	Contractor ▪ ECO and Contractor ▪ ECO
		▪ Sufficient general waste disposal bins must also be provided for use by construction personnel throughout the site. These bins must be emptied on a regular basis.	▪ Monitor general waste generation by construction staff and collection via audits throughout the construction phase.	▪ Daily or Weekly	▪ ECO and Contractor.
		▪ Ensure that all general waste emanating from the construction phase is removed from site prior to the commencement of the rehabilitation and operational phases.	▪ Undertake a final inspection at the end of the construction phase in order to verify and ensure that all general waste is removed from site and correctly disposed, prior to the commencement of the rehabilitation and operational phases.	▪ At the end of the construction phase.	▪ ECO and Contractor.
		▪ Promote waste reduction, re-use, and recycling opportunities on site during the construction phase.	▪ Monitor waste generation and collection throughout construction. ▪ Investigate if any, complaints have been expressed by the surrounding community regarding waste handling.	▪ Weekly or bi-weekly	▪ ECO and Contractor

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	***Frequency***	***Responsibility***
		▪ Ensure an adequate and sustainable use of resources.	▪ Monitor waste generation and collection throughout construction.	▪ Weekly or bi-weekly	▪ ECO and Contractor
		▪ Control and implement waste management plans provided by contractors. Ensure that relevant legislative requirements are respected.	▪ Control of waste management practices throughout construction phase	▪ Weekly or bi-weekly	▪ ECO and Contractor
		▪ Normal sewage management practices should be implemented. These include ensuring that portable sanitation facilities are regularly emptied and the resulting sewage is contained and transported safely (by an appointed (suitable) service provider) for correct disposal at an appropriate, licensed facility. Proof of disposal (in the form of waste disposal slips or waybills) should be retained on file for auditing purposes. No waste water must be discharged to the natural environment. ▪ As part of the Environmental Awareness Training, all construction personnel should be made aware of the sewage management practices.	▪ Monitor the placement of sanitation facilities during the construction phase via visual site inspections. Record non-compliance and incidents. ▪ Ensure that a suitable Contractor is appointed to remove and dispose the sewage at an appropriate, licensed facility. ▪ Monitor waste disposal slips and waybills via site audits and record non-compliance and incidents. ▪ Carry out Environmental Awareness Training. ▪ Conduct audits of the signed attendance registers.	▪ Weekly ▪ During construction ▪ Weekly ▪ Once-off training and ensure that all new staff are inducted. ▪ Monthly	▪ ECO and Contractor ▪ ECO ▪ ECO ▪ ECO and Contractor ▪ ECO
Pollution of the surrounding environment as a result of the handling, temporary	Reduce environmental impacts such as soil, surface water and groundwater contamination as a result of incorrect storage, handling	▪ Hazardous waste (i.e. empty tins, oils, fuel spillages, spilled materials and chemicals etc.) generated during the construction phase should be stockpiled temporarily (i.e. once-off) on site in a designated area in suitable waste collection bins and leak-	▪ Monitor the strategic placement of the temporary, designated waste stockpiling area at the site camp via visual inspections, and record and report any non-	▪ Once-off prior to the commencement of the construction phase and as required as the construction process	▪ ECO and Contractor ▪ ECO

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	***Frequency***	***Responsibility***
stockpiling and disposal of hazardous waste.	and disposal of hazardous waste.	proof storage skips (or similar). Waste collection bins and skips should be covered with suitable material, where appropriate. Hazardous waste must be stored separately from all other general waste. The designated stockpiling area must be labelled correctly.	compliance. ▪ Monitor the temporary storage and handling of hazardous waste on site via site audits and record non-compliance and incidents (i.e. conduct visual inspections of the temporary waste storage area).	evolves. ▪ Daily	
		▪ Should the on-site stockpiling of hazardous waste exceed 80 m^3, then the National Norms and Standards for the Storage of Waste (published on 29 November 2013 under GN 926) must be adhered to.	▪ Record the amount of hazardous waste that is temporarily stockpiled at the designated area on site, as well as the duration and record non-compliance and incidents. ▪ Monitor the duration and amounts of hazardous waste that is temporarily stockpiled at the designated area on site via site audits and record non-compliance and incidents (i.e. conduct visual inspections of the temporary waste storage area). ▪ Audit compliance with the Norms and Standards for the Storage of Waste (published on 29 November 2013 under GN 926) if the storage amounts are exceeded (i.e. only if required).	▪ Daily ▪ Weekly ▪ Monthly	▪ Contractor ▪ ECO ▪ Project Developer
		▪ Ensure that the designated stockpiling area for	▪ Monitor the temporary,	▪ Daily	▪ ECO

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	***Frequency***	***Responsibility***
		hazardous waste (i.e. leak proof skips and waste collection bins) is inspected on a daily basis to verify its condition and integrity, particularly after rainfall events.	designated waste stockpiling area at the site camp, as well as the handling of hazardous waste on site via site audits and record non-compliance and incidents.		
		▪ Ensure that all hazardous waste is removed from the site on a regular basis, and safely disposed at an appropriate, licensed hazardous waste disposal facility by an approved waste management Contractor.	▪ Ensure that a suitable Waste Management Contractor is appointed to remove and dispose the hazardous waste at an appropriate, licensed hazardous waste disposal facility. ▪ Monitor waste disposal slips and waybills via site audits and record non-compliance and incidents.	▪ Once-off prior to the construction phase. ▪ Weekly	▪ Contractor ▪ ECO
		▪ Ensure that the construction site is kept clean at all times and that construction personnel are made aware of correct waste disposal methods. Littering must be prevented through effective site camp management.	▪ Monitor the condition of the site camp throughout the construction phase via visual site inspections. Record non-compliance and incidents. ▪ Carry out Environmental Awareness Training. ▪ Conduct audits of the signed attendance registers.	▪ Daily ▪ Once-off training and ensure that all new staff are inducted. ▪ Monthly	▪ ECO and Contractor ▪ ECO and Contractor ▪ ECO
		▪ All liquid waste (used oil, paints, lubricating compounds and grease) to be packaged and disposed of by appropriate means.	▪ Waste removal and disposal to be monitored throughout construction	▪ Weekly or bi-weekly	▪ ECO and Contractor
		▪ Adequate containers for the cleaning of equipment	▪ Waste removal and disposal to be	▪ Weekly or bi-weekly	▪ ECO and

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	***Frequency***	***Responsibility***
		and materials (paint, solvent) must be provided as to avoid spillages.	monitored throughout construction		Contractor
		▪ Waste water from construction and painting activities must be collected in a designated container and disposed of at a suitable disposal point off site.	▪ Waste removal and disposal to be monitored throughout construction	▪ Weekly or bi-weekly	▪ ECO and Contractor
		▪ Control and implement waste management plans provided by contractors. Ensure that relevant legislative requirements are respected.	▪ Control of waste management practices throughout construction phase.	▪ Weekly or bi-weekly	▪ ECO and Contractor
C. OPERATIONAL PHASE					
C.1. ECOLOGICAL IMPACTS					
Increased soil erosion. The impact of wind erosion results in loss of surface soils and degradation of land.	To mitigate and manage the site to prevent any soil loss arising from wind.	▪ Erosion management at the site should take place according to the Rehabilitation Plan (Section 5) and the Erosion Management Plan (Section 9) of this EMPr. ▪ All roads and other hardened surfaces should have runoff control features which redirect water flow and dissipate any energy in the water which may pose an erosion risk. ▪ Regular monitoring for erosion after construction to ensure that no erosion problems have developed as result of the disturbance, as per the Erosion Management and Rehabilitation Plans for the project. ▪ All erosion problems observed should be rectified as soon as possible, using the appropriate erosion	▪ Monitor the erosion on site during operations, as well as the implementation and effectiveness of erosion control on site (such as the use of gabions and geofabric materials or similar) at appropriate points.	▪ Ongoing and as required	▪ Project Owner and Environmental Manager/ECO

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	***Frequency***	***Responsibility***
		control structures and revegetation techniques. ▪ All cleared areas should be revegetated with indigenous perennial species from the local area. ▪ Avoid areas of high wind erosion vulnerability as much as possible. ▪ Use net barriers, geotextiles, active rehabilitation and other measures during and after construction to minimise sand movement at the site.			
Increased plant invasion as a result of clearance of vegetation	To mitigate and manage the invasion of alien on site.	▪ Alien management plan to be implemented during the operational phase of the development, which makes provision for regular alien clearing and monitoring. ▪ Wherever excavation is necessary, topsoil should be set aside and replaced after construction to encourage natural regeneration of the local indigenous species. ▪ Due to the disturbance at the site as well as the increased runoff generated by the hard infrastructure, alien plant species are likely to be a long-term problem at the site and a long-term control plan will need to be implemented. Problem woody species such as *Acacia cyclops* are already present in the area and are likely to increase rapidly if not controlled. ▪ Regular monitoring for alien plants within the development footprint as well as adjacent areas which receive runoff from the facility as there are also likely to be prone to invasion problems.	▪ Monitor the invasion of aliens on site during operations, as well as the implementation and effectiveness of Alien Management Plan. ▪ Control the spread of alien plants species, especially, *Acacia cyclops.*	▪ Once off before operation commences ▪ Ongoing	▪ Project Owner and Environmental Manager/ECO

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	***Frequency***	***Responsibility***
		▪ Regular alien clearing should be conducted, as needed, using the best-practice methods for the species concerned. The use of herbicides should be avoided as far as possible.			
Disturbance of resident fauna due to habitat loss and noise	Avoid and/or minimize habitat loss, construction noise and disturbance	▪ Implement the Open space management plan (Section 6) for the development, which makes provision for favourable management of the facility and the surrounding area for fauna. ▪ Limiting access to the site to staff and contractors only. ▪ If the site must be lit at night for security purposes, this should be done with downward-directed low-UV type lights (such as most LEDs) as far as possible, 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 and oil spills that occur at the site should be cleaned up in the appropriate manner as related to the nature of the spill. ▪ All vehicles accessing the site should adhere to a low speed limit (40km/h max) to avoid collisions with susceptible species such as snakes and tortoises.	▪ Monitor the disturbance of fauna on site during operations, as well as the implementation and effectiveness of the Open Space Management Plan. ▪ Monitor unauthorized access to site.	▪ Ongoing	▪ Project Owner and Environmental Manager/ECO
Impact on Critical Biodiversity Areas (CBAs). Habitat loss due to clearance of vegetation and plant	Avoid and/or minimize habitat loss and impacts on CBAs.	▪ Minimise the development footprint as far as possible, which includes locating temporary-use areas such as construction camps and lay-down areas in previously disturbed areas.	▪ Ensure that the construction area and footprint is kept to a minimum. Carry out regular site inspections to verify the limits of the construction area to ensure	▪ Once off before construction commences. ▪ Ongoing	▪ Project Owner ▪ Environmental Manager/ECO ▪ Project

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	***Frequency***	***Responsibility***
species of conservation concern (SCC)		▪ Avoid clearing of SCC as much as possible. ▪ Avoid impact to restricted and specialized habitats such as quartz patches or active dune fields. ▪ Investigate the potential of implementing an offset to mitigate the residual impact on CBAs.	unnecessary disturbance is avoided. ▪ Ensure that construction personnel are made aware to avoid restricted and specialized habitats. Undertake site inspections to verify. ▪ Sensitive areas to be clearly marked and cordoned off to avoid and reduce impacts to SCC. ▪ Monitor the development and implementation of an offset.	▪ Before construction commences. ▪ Development and monitoring of offset as required by the relevant Offset Guidelines.	Developer
C.2. BIRDS					
Bird mortality due to collision with wind turbines.	Avoid collisions with operational wind turbines	▪ Develop an operational monitoring programme based on Best Practice Guidelines at the time. ▪ This plan should include a carcass search programme for birds during the first two years of operation, in line with the applicable (i.e. at the start of operations at the wind farm) South African monitoring guidelines; ▪ Develop and implement a 24 month post-construction bird activity monitoring program that mirrors the pre-construction monitoring surveys completed by Arcus and is in line with the applicable South African post-construction monitoring guidelines. This program must include thorough and ongoing nest searches and nest monitoring;	▪ Implement and monitor the efficiency of the programme based on the relevant Best Practice Guidelines at the time. Revise the programme based on operational monitoring data and results as required (but should still be in line with the current Guidelines). ▪ Appoint an avifaunal specialist. ▪ Monitor compliance with recommendations.	▪ Programme to be implemented during the first two years of operations as required by the relevant guidelines at the time and as prescribed in the carcass search programme.	▪ Avifaunal specialist and Project Owner. ▪ Facility Manager

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	***Frequency***	***Responsibility***
		▪ Operational monitoring in line with applicable guidelines. ▪ Further operational mitigation measures to be researched, by appointed bird specialist, and the appropriate selected mitigation implemented, if post construction monitoring reveal high levels of impacts.			
Displacement of bird populations - Habitat loss through perceived increased predation risk	Reduce disturbance and noise from maintenance activities	▪ A site specific Operational Environmental Management Plan (OEMP) must be implemented and developed, which gives appropriate and detailed description of how operational and maintenance activities must be conducted to reduce unnecessary disturbance. All contractors are to adhere to the OEMP and should apply good environmental practice during all operations. ▪ The on-site WEF manager (or a suitably appointed Environmental Manager) must be trained by an avifaunal specialist to identify the potential priority species and Red Data species as well as the signs that indicate possibly breeding by these species. If a priority species or Red Data species is found to be breeding (e.g. a nest site is located) on the operational Wind Farm, the nest/breeding site must not be disturbed and an avifaunal specialist must be contacted for further instruction; ▪ Operational phase bird monitoring, in line with applicable guidelines, must be implemented and must include monitoring of all raptor nest sites for breeding success.	▪ Oversee activities to ensure that the OEMP is implemented and enforced via site audits and inspections. Report and record any non-compliance. ▪ Training programme to be undertaken. ▪ Appoint an Avifaunal specialist to develop and implement the OEMP and to conduct the training to	▪ Ongoing implementation of the CEMP during the operational phase. ▪ Training to be conducted before construction commences as well as before the operational phase to ensure that breeding sites or nests are avoided.	▪ Project Owner and Facility Manager ▪ Avifaunal specialist

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	***Frequency***	***Responsibility***
Disruption of local bird movement patterns	Avoidance of operational turbines	▪ Lighting on turbines to be of an intermittent and coloured nature rather than constant white light to reduce the possible impact on the movement patterns of nocturnal migratory species.	▪ Ensure lighting on turbines to be of an intermittent and coloured nature	▪ Ongoing	▪ Facility Manager or Contractor
C.3. BATS					
Bat mortality due to collisions with wind turbines (during commuting, migration and/or foraging)	Avoid placement of wind turbines in high risk areas more frequently used by bats.	▪ Artificial roost (e.g. roofs of buildings, road culverts and wind turbines) must be sealed. Ongoing maintenance and inspections of buildings to ensure no access to bats. ▪ Operational acoustic monitoring and carcass searches for bats must be performed, based on best practice guidelines, to monitor mortality and bat activity levels. Acoustic monitoring should include monitoring at height (from more than one location) and at ground level. ▪ If mortality does occur, the level of mortality should be considered by a bat specialist to determine if this is at a level where further mitigation needs to be considered. Mitigation options may include using ultrasonic deterrents, raising the cut-in speeds of turbines and turbine blade feathering. Any operational minimization strategy should be targeted during specific seasons and time periods for specific turbines coincident with periods of increased bat activity. ▪ It is advised that both pre-construction and operational monitoring data are used to confirm	▪ Ongoing maintenance and inspections of buildings to ensure no access to bats. ▪ Implement and monitor the efficiency of the programme based on the relevant Best Practice Guidelines at the time. Revise the programme based on operational monitoring data and results as required (but should still be in line with the current Guidelines). ▪ Appoint a bat specialist. ▪ Monitor compliance with recommendations.	▪ Ongoing ▪ Programme to be implemented as required by the relevant guidelines at the time and as prescribed in the carcass search programme	▪ Bat specialist and Project Owner. ▪ Facility Manager

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	***Frequency***	***Responsibility***
		the need for above mentioned mitigation measures and to determine at what stage of the development such mitigation needs to be implemented, if at all.			
Displacement and reduced foraging opportunities for bats	Reduce light pollution	▪ Using as little lighting as possible. ▪ Low pressure sodium and warm white LED lights are favourable. ▪ High pressure sodium and white mercury lighting to be avoided.	▪ Implement relevant Best Practice Guidelines in terms of lightning requirements ▪ Carry out visual inspection of WEF during site audits to ensure that these mitigation measures are implemented.	▪ Ongoing	▪ Facility Manager
C.5. VISUAL IMPACTS					
Potential visual intrusion of the proposed WEF (turbines) on the views of sensitive visual receptors (skyline and open landscape).	Reduce visual intrusion of the WEF on the views of sensitive visual receptors as well as its impact on the surrounding landscape. Reduce visual clutter of wind energy infrastructure on the skyline and open landscape.	▪ Monitor effectiveness of the rehabilitation plan for temporarily cleared areas and erosion scarring. ▪ Monitor building and façade maintenance. Painted features should be maintained and repainted when colour fades or paint flakes.	▪ Carry out visual inspections during site audits to verify the effectiveness of the rehabilitation, and record and report any non-compliance. ▪ Carry out an inspection of WEF to ensure that it is being maintained in a good condition.	▪ Avoidance of steep slopes should be done once off in layout before construction commences. ▪ Monthly	▪ Project Owner and Environmental Manager/ECO
		▪ Maintain re-vegetated surfaces until a self-sustaining stand of vegetation is established and visually adapted to the undisturbed surrounding vegetation. No new disturbance should be created during operations without approval from the	▪ Carry out visual inspections during site audits to verify the effectiveness of the rehabilitation and the progress of rehabilitation, and record and report any non-	▪ Weekly during the rehabilitation phase. ▪ Soon after construction phase.	▪ Environmental Manager/ECO ▪ Environmental Manager/ECO

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	***Frequency***	***Responsibility***
		Environmental Manager. ▪ Restoration of disturbed land should commence as soon after disturbance as possible. ▪ Road maintenance activities should avoid damaging or disturbing vegetation. ▪ Dust and noxious weed control should be part of maintenance activities.	compliance. ▪ Ensure that all vegetation removal outside of the project footprint is approved by the Environmental Manager. ▪ Monitor the road maintenance process to ensure limited damage to vegetation. Record and report any non-compliance. ▪ Monitor the presence of alien vegetation on site. ▪ Monitor dust suppression mechanisms and record non-compliances. Maintain an incidents/ complaints register, in which any complaints from the public must be logged. The date, time, nature of complaint, name of complainant and corrective actions must be logged for all complaints. Complaints must be investigated and, if appropriate, acted upon. ▪ Implement the Rehabilitation Plan (Section 5) and the Erosion Management Plan (Section 9) of this EMPR.	▪ During road maintenance activities. ▪ Throughout the operational phase. ▪ During complaints/ incidents	▪ Environmental Manager/ECO ▪ Environmental Manager/ECO ▪ Environmental Manager/ECO

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	***Frequency***	***Responsibility***
Potential impact of night lighting of the proposed WEF on the nightscape of the region.	Reduce the impact of night lighting of the proposed WEF on the surrounding nightscape and sensitive visual receptors.	▪ Monitor the effectiveness of the lighting plan to minimize light spill and glare. ▪ Low-level lighting and use of reflectors.	▪ Complaints about night lights should be investigated and documented in a register. Investigate any complaints about night lights and document it in a register.	▪ As complaints arise.	▪ Project Owner and Environmental Manager/ECO
		▪ Lights should be switched off when not in use whenever it is in line with safety and security.	▪ Carry out visual inspections during site audits to monitor lighting, and record and report any non-compliance.	▪ Weekly	▪ Project Owner and Environmental Manager
C.6. HERITAGE IMPACTS (ARCHAEOLOGY AND CULTURAL LANDSCAPE)					
Potential impact of WEF on the cultural landscape and disruption of traditional activities	Reduce visual contrast of the development in the landscape. Reduce visual intrusion into cultural landscape & disruption of traditional activities.	▪ Monitor building and façade maintenance. Painted features should be maintained and repainted when colour fades or paint flakes. ▪ Good house-keeping in terms of management of facility	▪ Carry out an inspection of WEF to ensure that it is being maintained in a good condition. ▪ Monitor the paint colour to detect fading.	▪ Monthly ▪ Annually	▪ Project Owner ▪ Facility Manager
Maintenance vehicles and activities could result in damage to or destruction of archaeological sites and/or graves.	Minimise the chances of significant archaeological sites and/or graves being disturbed.	▪ Ensure that no activity takes place outside of the authorized operational footprint.	▪ Carry out visual inspections to ensure strict control over the behaviour of operational staff to ensure that activities do not take place outside of authorized operational footprint.	▪ Weekly	▪ Facility Manager

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	*Frequency*	*Responsibility*
C.7. SOILS AND AGRICULTURAL POTENTIAL IMPACTS					
Soil erosion due to alteration of the land surface characteristics	To reduce erosion on site and downstream of the site as a result of run-off from the site, or due to wind erosion.	▪ Implement an effective system of run-off control, where it is required, that collects and safely disseminates run-off water from all hardened surfaces and prevents potential down slope erosion. ▪ Maintain vegetation cover.	▪ Include periodic site inspection in environmental performance reporting that inspects the effectiveness and integrity of the run-off control system and specifically records the occurrence of any erosion on site or downstream. Corrective action must be implemented to the run-off control system in the event of any erosion occurring.	▪ Quarterly during the Operational Phase. ▪ Implement the Stormwater Management Plan (Section 8) and the Erosion Management Plan (Section 9) of this EMPr.	▪ Environmental Manager/Facility Manager
C.8. SOCIAL IMPACTS					
Local employment during operations and maintenance operations.	Ensure optimum employment creation and skills development while taking cognizance of the local levels of experience and education.	▪ Implement the Workforce Recruitment Plan ▪ Where possible, ensure that the local community members are prioritised for the allocation of the created jobs. ▪ Contracts ensuring that knowledge sharing and on-the-job training should be enforced as a condition for the development of the project.	▪ Verify that local labour is, as far as practically possible, being used, by cross-referencing the Workforce Recruitment Plan with current recruitment practices, as well as cross-referencing employed personnel with PAP database.	▪ Once a year during the operational phase.	▪ Environmental Manager/Facility Manager ▪ Project Owner
Project expenditure and long-term diversification of the economy	Ensure contribution to local economic growth.	▪ Implement the Economic Development Plan. ▪ The economic development plans to be developed must be prepared by socio-economic experts, to ensure that they can be effectively implemented and managed, bringing maximum benefit to the community.	▪ Verify that the Economic development Plan is being implemented.	▪ Once a year during the operational phase.	▪ Environmental Manager/Facility Manager ▪ Project Owner

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	***Frequency***	***Responsibility***
		▪ Support local businesses as far as possible. ▪ Liaise closely with the local municipality and other stakeholders involved in socio-economic development in order to ensure that any projects are integrated into wider strategies and plans with regard to socio-economic development. ▪ Proponent/project owner needs to establish a relationship with the local authorities such as the Nama Khoi LM and local community leaders to ensure that the SED initiatives that are implemented during the pre-operational stage are aligned with the relevant needs of the Kleinzee and Komaggas communities. ▪ The fair and transparent application of the Department of Energy's (DoE) requirements for local benefit enhancement will require extensive interactions and engagement with the local community and its representatives. The applicant should therefore ensure that adequate time and resources are devoted to these activities.			
Impact of the visibility, operation and audibility of the development on the sense of place.	Reduce the impact of the WEF on the sense of place.	▪ The mitigation measures proposed by the visual, agricultural and noise specialists should be adhered to.	▪ Monitor implementation of the mitigation measures as proposed in these studies listed.	▪ Ongoing through-out the operational phase	▪ Project Owner ▪ Environmental Manager/Facility Manager
C.9. NOISE IMPACTS					
Increase in ambient sound levels.	Limit the increase in ambient sound levels due to	▪ Ensure that the change in ambient sound levels as experienced by Potentially Sensitive Receptors is	▪ Monitor compliance with National Noise Control	▪ Ongoing through-out the operational phase.	▪ Project Owner

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	***Frequency***	***Responsibility***
	air-borne noise as a result of operating wind turbines during the day and night.	less than 7 dBA; ▪ Ensure that total noise levels are less than 42 dBA at all potential noise-sensitive receptors; ▪ Prevent the generation of nuisance noises; ▪ Ensure acceptable noise levels at surrounding stakeholders and potentially sensitive receptors. Ensure acceptable noise levels at surrounding stakeholders and potentially sensitive receptors; ▪ Ensuring compliance with the National Noise Control Regulations and Standards; ▪ The developer must investigate any reasonable and valid noise complaint if registered by a receptor staying within 2,000 m from operational wind turbine. A complaints register must be kept on site.	Regulations and Standards. ▪ Complaints should be registered and monitored and follow up action should be effected by the Project Owner as required.		▪ Facility Manager
C.10. TRAFFIC IMPACTS					
Impact on air quality due to dust generation, noise and exhaust emissions from maintenance vehicles and equipment.	Limit the release of noise, pollutants and dust emissions	▪ Implement the Traffic Management Plan (Section 7 of this EMPR). ▪ Implement management strategies for dust generation, e.g. apply dust suppressant on the exposed areas and stockpiles as relevant.	▪ Ensure dust management measures are in place to adequately decrease the generation of dust.	▪ On-going	▪ Facility Manager
Impact on sensitive fauna and flora	Prevent disturbance to sensitive fauna and flora.	▪ Maintenance vehicles to use existing roads.	▪ Visual inspections to monitor compliance.	▪ On-going	▪ Facility Manager
C.11. WASTE MANAGEMENT					

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	***Frequency***	***Responsibility***
Pollution of the surrounding environment as a result of the handling, temporary storage and disposal of solid waste (general and hazardous).	Reduce soil and groundwater contamination as a result of incorrect storage, handling and disposal of general and hazardous waste.	▪ Sufficient waste collection bins and skips (or similar) should be provided at the WEF. Waste collection bins and skips should be covered with suitable material and correctly labelled, and should be kept in a designated, demarcated area, where access control is monitored and managed.	▪ Monitor waste generation and collection throughout the operational phase.	▪ Weekly	▪ Facility Manager
		▪ Segregation of hazardous waste from general waste to be in place. Waste separation is encouraged and therefore receptacles should be labelled to reflect the different waste types.	▪ On-site inspection of waste segregation. ▪ Control of waste management practices throughout operational phase.	▪ Weekly ▪ Weekly	▪ Facility Manager ▪ Facility Manager
		▪ General waste and hazardous waste should be removed from the site on a regular basis and disposed of at an appropriate, licensed waste disposal facility. Hazardous waste should be removed by an approved waste management Contractor. General solid waste could be removed from the site by municipal services. Waste disposal slips or waybills should be kept on file for auditing purposes as proof of disposal, as applicable	▪ Inspection of the waste storage area. ▪ Monitor via site audits and record non-compliance and incidents. Facility Manager to monitor and audit disposal slips.	▪ Daily ▪ Monthly	▪ Facility Manager
		▪ Ensure that the WEF is kept clean at all times and that operational personnel are made aware of correct waste disposal methods.	▪ Conduct training for all operational personnel. ▪ Monitor the state of WEF via site audits and record non-compliance and incidents.	▪ Once-off during operations and ensure that all new staff are inducted. ▪ Daily	▪ Facility Manager
		▪ No solid waste may be burned or buried on site.	▪ Monitor via site audits and record non-compliance and incidents.	▪ Daily	▪ Facility Manager

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	***Frequency***	***Responsibility***
		▪ Waste amounts shall be recorded on a monthly basis.	▪ Waste amounts to be documented.	▪ Monthly	▪ Facility Manager
		▪ All operational waste (concrete, steel, rubbles etc.) to be removed from the site and waste hierarchy of prevention, as the preferred option, followed by reuse, recycling, and recovery must be implemented, where possible.	▪ Waste removal and disposal to be monitored	▪ Monthly	▪ Facility Manager
		▪ Other non-hazardous solid waste (e.g. packaging material) to be disposed of at a licensed landfill.	▪ Waste removal and disposal to be monitored	▪ Monthly	▪ Facility Manager
		▪ All liquid waste (used oil, paints, lubricating compounds and grease) to be packaged and disposed of by appropriate means.	▪ Waste removal and disposal to be monitored	▪ Monthly	▪ Facility Manager
		▪ Adequate containers for the cleaning of equipment and materials (paint, solvent) must be provided as to avoid spillages.	▪ Waste removal and disposal to be monitored	▪ Monthly	▪ Facility Manager
		▪ Waste water from operations and painting activities must be collected in a designated container and disposed of at a suitable disposal point off site.	▪ Waste removal and disposal to be monitored	▪ Monthly	▪ Facility Manager
D. DECOMMISSIONING PHASE					
D.1. ECOLOGICAL IMPACTS (Terrestrial fauna and flora)					
Alien plant invasion of abandoned site resulting in	To prevent the excessive growth and propagation of invasive alien plants on	▪ Alien management plan to be implemented during the decommissioning phase of the development, which makes provision for regular alien clearing	▪ Compile and implement alien management plan to monitor and clear aliens for five years post the	▪ Bi-annual monitoring of alien plants within disturbed areas for at	▪ Project Owner ▪ Contractor

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	*Frequency*	*Responsibility*
ecological change, habitat loss or disturbance	disturbed lands that formed portion of the WEF	and monitoring for at least 5 years after decommissioning or until the rehabilitation benchmarks and criteria have been met. ▪ Active rehabilitation and revegetation of previously disturbed areas with indigenous species selected from the local environment. ▪ Wherever excavation is necessary for decommissioning, topsoil should be set aside and replaced after decommissioning activities are complete to encourage natural regeneration of the local indigenous species. ▪ Due to the disturbance at the site alien plant species are likely to be a long-term problem at the site following decommissioning and regular control will need to be implemented until a cover of indigenous species has returned. ▪ Regular monitoring for alien plants within the disturbed areas for at least five years after decommissioning or until alien invasives' are no longer a problem at the site. ▪ Regular alien clearing should be conducted using the best-practice methods for the species concerned. The use of herbicides should be avoided as far as possible.	decommissioning phase. ▪ Appoint contractor to implement clearing of aliens in terms of the alien management plan. ▪ Implement the Alien Invasive Vegetation Management Plan (Section 4) of this EMPR.	least five years after decommissioning or until alien invasives are no longer a problem at the site. ▪ Weed eradication exercise to be undertaken every 6 months for a period of 5 years following decommissioning or until the rehabilitation benchmarks and criteria have been met.	
Increased soil erosion. The impact of wind erosion results in loss of surface soils and	Mitigate and manage the decommissioned site to prevent any soil loss arising from wind.	▪ All hard infrastructure should be removed and the footprint areas rehabilitated with locally-sourced perennial species. ▪ The use of net barriers, geotextiles, active rehabilitation and other measures after	▪ Implementation of Decommissioning EMPr and oversee activities to ensure that the it is implemented and enforced, via site audits and	▪ Monitoring of rehabilitation success at the site for at least 5 years after decommissioning. ▪ Appoint a suitably	▪ Project Onwer ▪ Facility Manager ▪ Suitably qualified

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	***Frequency***	***Responsibility***
degradation of land.		decommissioning to minimise sand movement and enhance revegetation at the site. ▪ Monitoring of rehabilitation success at the site for at least 5 years after decommissioning. ▪ All erosion problems observed should be rectified as soon as possible, using the appropriate erosion control structures and revegetation techniques.	inspections. Record and report any non-compliance. ▪ Appoint a suitably qualified contractor to undertake and oversee the decommissioning of the WEF. ▪ Appoint a suitably qualified specialist to monitor rehabilitation via site audits and site inspections to ensure compliance. Record and report any non-compliance.	qualified contract for the decommissioning phase. ▪ Appoint a contractor after decommissioning to monitor the rehabilitation of the site	contractor ▪ Rehabilitation specialist
D.2. BIRDS					
Displacement of Red Data avifauna due to disturbance associated with the decommissioning activities.	Reduce noise and disturbance to birds from decommissioning activities.	▪ A site-specific Decommissioning EMPr must be implemented and adhered to, which gives an appropriate and detailed description of how decommissioning activities must be conducted to reduce unnecessary destruction of habitat. All contractors are to adhere to the Decommissioning EMPr and should apply good environmental practice during decommissioning. ▪ ECOs to oversee activities and ensure that the EMP is implemented and enforced; ▪ The appointed ECO must be trained by an avifaunal specialist to identify the potential priority species and Red Data species as well as the signs that indicate possible breeding by these species. The ECO must then, during audits/site visits, make a concerted effort to look out for such breeding	▪ Develop and implement the Decommissioning EMPr based on the relevant Best Practice Guidelines at the time. ▪ Training to be provided to the ECO and Decommissioning Manager. ▪ Decommissioning personnel to avoid no-go and sensitive areas during decommissioning activities. ▪ No-go and sensitive areas to be clearly demarcated and cordoned off prior to decommissioning activities	▪ Prepare a Decommissioning EMPr once-off prior to decommissioning. ▪ Ongoing implementation of decommissioning EMPr. ▪ Training of contractor and ECO prior to decommissioning. ▪ Avifaunal specialist to conduct a site walk - through prior to decommissioning to	▪ Project Owner and ECO ▪ Decommissio-ning Manager or Contractor ▪ Avifauna specialist

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	*Frequency*	*Responsibility*
		activities of Red Data species, and such efforts may include the training of construction staff (e.g. in Toolbox talks) to identify Red Data species, followed by regular questioning of staff as to the regular whereabouts on site of these species. If any of the Red Data species are confirmed to be breeding (e.g. if a nest site is found), decommissioning activities within 500 m of the breeding site must cease, and an avifaunal specialist is to be contacted immediately for further assessment of the situation and instruction on how to proceed; ▪ Amendments to decommissioning schedule required if any of the Red Data species are confirmed to be breeding decommissioning activities within 500 m of the breeding site must cease, and an avifaunal specialist may advise changes to the schedule. ▪ Prior to decommissioning, an avifaunal specialist should conduct a site walkthrough, to identify any nests/breeding/roosting activity of sensitive species, as well as any additional sensitive habitats. The results of which may inform the final decommissioning schedule in close proximity to that specific area, including abbreviating activity times, scheduling activities around avian breeding and/or movement schedules, and lowering levels of associated noise.	commencing. ▪ Visual inspections to ensure that mitigation measures are implemented or adhered to. Monitor and record non-compliance.	identify any nests/breeding/roosting activity of sensitive species, as well as any additional sensitive habitats	
D.3. BAT IMPACTS					

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	***Frequency***	***Responsibility***
Roost disturbance of Bats	Reduce or minimize excessive noise and dust which could result in bats abandoning their roosts during decommissioning phase.	▪ Avoid decommissioning activities near roosts. ▪ Limit decommissioning activities to daylight hours.	▪ Carry out site visits and inspections of the sites and ensure good housekeeping is maintained. Record and report any non-compliance. ▪ Monitor that decommissioning only takes place during the day and report non-compliance. ▪ Decommissioning personnel to avoid no-go and sensitive areas. ▪ No-go and sensitive areas to be clearly demarcated and cordoned off prior to decommissioning activities commencing.	▪ Ongoing	▪ ECO ▪ Decommissioning Manager and Project Owner
D.4. DRY AND EPHEMERAL WATER COURSES IMPACT					
Physical disturbance and destruction of dry and ephemeral watercourses (incl. drainage lines) due to land and vegetation clearance.	As far as possible, avoid identified sensitive dry and ephemeral watercourses (incl drainage lines) and associated buffers. (The current layout already avoids the identified drainage lines).	▪ During decommissioning activities, avoid identified sensitive dry and ephemeral watercourses, drainage lines and associated buffers as far as possible. ▪ Commence with restoration of disturbed, cleared land as soon as permanent structures have been removed. ▪ Ecology specialist to monitor progress and success of rehabilitation.	▪ Carry out visual inspections to ensure strict control over the behaviour of staff in order to restrict activities to demarcated areas. Record non-compliance and incidents. ▪ Monitor the decommissioning period to verify if this is being undertaken (where possible). ▪ Monitor if restoration of disturbed areas are effected as soon as permanent structures are	▪ Ongoing	▪ ECO ▪ Contractor, Project Owner

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	***Frequency***	***Responsibility***
			removed.		
Altered drainage patterns, increased runoff, erosion and sedimentation of surrounding ecosystems due to land and vegetation clearance.	As far as possible, avoid identified sensitive dry and ephemeral watercourses, drainage lines and associated buffers. (The current layout already avoids the identified drainage lines).	▪ During decommissioning activities, avoid identified sensitive dry and ephemeral watercourses, drainage lines and associated buffers as far as possible. ▪ Commence with restoration of disturbed, cleared land as soon as permanent structures have been removed. ▪ Ecology specialist to monitor progress and success of rehabilitation.	▪ Carry out visual inspections to ensure strict control over the behaviour of staff in order to restrict activities to within demarcated areas. Record non-compliance and incidents. ▪ Monitor the decommissioning period to verify if this is being undertaken (where possible). ▪ Monitor if restoration of disturbed areas are effected as soon as permanent structures are removed.	▪ Ongoing	▪ ECO ▪ Contractor Project Owner ▪ Ecology specialist
D.5. VISUAL IMPACTS					
Potential visual intrusion of decommissioning activities (removal of WEF structures) on existing views of sensitive visual receptors. Visual impacts of remaining roads, platforms and concrete slabls.	Prevent unnecessary visual clutter during the decommissioning phase and focusing attention of surrounding visual receptors on the proposed development. Prevent visual clutter of remaining roads, platforms and slabs	▪ Disturbed and transformed areas should be contoured to approximate naturally occurring slopes to avoid lines and forms that will contrast with the existing landscapes. ▪ Regrading, ripping and revegetation of the decommissioned site. ▪ Edges of re-vegetated areas should be feathered to reduce form and line contrasts with surrounding undisturbed landscape.	▪ Conduct visual inspections to ensure that landscaping is following the rehabilitation plan. ▪ Monitor if mitigation measures are implemented.	▪ Weekly	▪ ECO ▪ Contractor and ECO
		▪ Stockpiled topsoil should be reapplied to disturbed areas and these areas should be re-vegetated using a mix of indigenous species in such a way that the	▪ Site visits to ensure that stockpiled topsoil (or appropriate soil for vegetation when	▪ Weekly	▪ ECO

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	***Frequency***	***Responsibility***
		areas will form as little contrast in form, line, colour and texture with the surrounding undisturbed landscape.	stockpiled topsoil is exhausted) is used.		
		▪ Night lighting of decommissioning sites should be minimised within requirements of safety and efficiency.	▪ Complaints about night lights should be investigated and documented in a register.	▪ As complaints arise	▪ Contractor and ECO
		▪ Working at night should be avoided where possible.	▪ Operation times for decommissioning activities to be monitored and managed (as well as included in the tender contract).	▪ Weekly	▪ ECO
		▪ Ensure that procedures for the removal of structures and stockpiles during decommissioning are implemented, including recycling of materials and rehabilitation of the site to a visually acceptable standard, and signed off by the delegated authority.	▪ Carry out site visits and inspections of the sites to ensure that these measures are implemented. ▪ Rehabilitation to be signed off by the delegated authority.	▪ Weekly ▪ After decommissioning	▪ Contractor and ECO
	Reduce the visual impact of decommissioning activities project wide.	▪ Maintain good housekeeping on site to avoid litter and minimize waste. ▪ Monitor sites for strict adherence to demarcated boundaries. ▪ Monitor adherence to lighting plan. ▪ Monitor adherence to rehabilitation plan. ▪ Monitor adherence to erosion control plan. ▪ Monitor adherence to dust and fire control plans.	▪ Carry out site visits and inspections of the sites and ensure good housekeeping is maintained. Record and report any non-compliance. ▪ Carry out site visits and record and report any non-compliance. ▪ Complaints about night lights should be investigated and documented in a register.	▪ Daily and as complaints arise.	▪ Contractor and ECO

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	***Frequency***	***Responsibility***
			Investigate any complaints about night lights and document it in a register. ▪ Visit sites requiring rehabilitation. ▪ Carry out site visits and record and report any non-compliance. ▪ Carry out site visits and record and report any non-compliance.		
D.6. HERITAGE IMPACTS (ARCHAEOLOGY, PALAEONTOLOGY AND CULTURAL LANDSCAPE)					
Vehicles and activities associated with the removal of the WEF and rehabilitation of site could result in damage to or destruction of archaeological sites and/or graves.	Avoid or minimise the chances of significant archaeological sites and/or graves being disturbed.	▪ Ensure that no activity takes place outside of the authorized construction footprint. ▪ Report any chance finds of fossils or palaeontological resources. ▪ Ensure excavation and sampling of affected archaeological sites. ▪ Report any chance finds of graves. ▪ The known graveyards in the south-east should be cordoned off and treated as no-go areas. The informal graveyard alongside the existing road is especially sensitive given its proximity to the road. ▪ Exhumation of graves.	▪ Carry out visual inspections to ensure strict control over the behaviour of construction staff in order to restrict activities within demarcated areas. ▪ Demarcate graveyards in the south-east and monitor that this area is avoided by workers during the decommissioning phase.	▪ Weekly ▪ Ongoing during decommissioning phase.	▪ ECO ▪ Contractor
Scarring of the landscape once infrastructure has been removed.	Ensure that the landscape within the development footprint has a similar appearance to that around it.	▪ Ensure removal of all foundations, construction materials and foreign matter. ▪ Ensure rehabilitation of the site in accordance with environmental guidelines.	▪ Follow the relevant environmental guidelines.	▪ Throughout the decommissioning phase.	▪ ECO

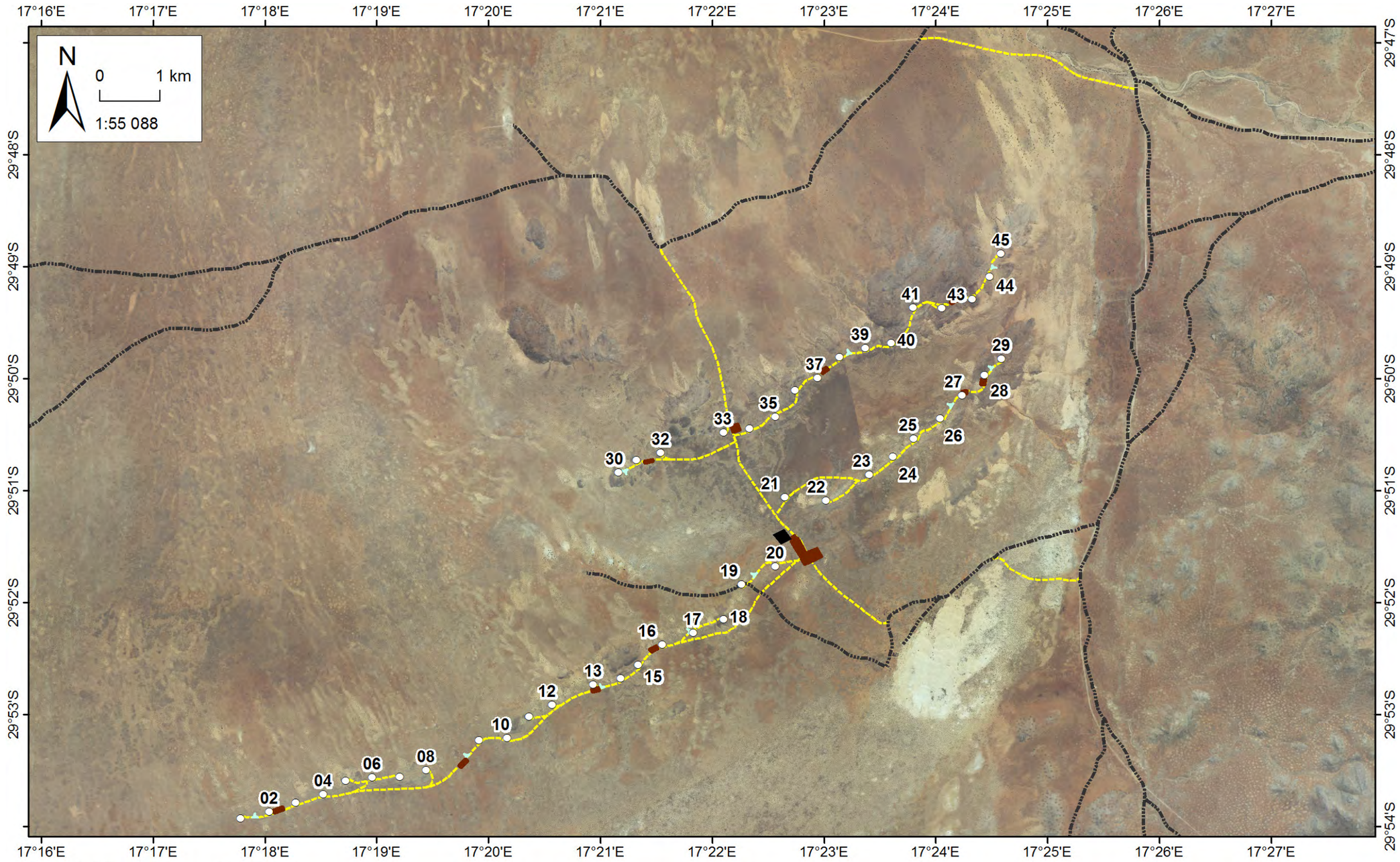
Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	***Frequency***	***Responsibility***
D.7. SOILS AND AGRICULTURAL POTENTIAL IMPACTS					
Degradation of veld vegetation beyond the direct footprint of the proposed WEF due to decommissioning disturbance, dust generation and potential trampling by vehicles.	To conserve the surrounding natural veld vegetation.	▪ Minimize footprint of disturbance during the decommissioning phase and ensure that work is undertaken within the demarcated area only. ▪ Confine vehicle access on roads only. ▪ Control dust generation during decommissioning activities by implementing standard construction site dust control measures (dampening with water) where required. Because of water scarcity, this should only be done where and when dust generation is a significant problem.	▪ Monitor the decommissioning activities via site audits to ensure that they are undertaken within the demarcated decommissioning area, and record non-compliance and incidents. ▪ Include periodic site inspection in environmental performance reporting that specifically records occurrence or not of off-road vehicle tracks surrounding the site. Monitor via site audits and record non-compliance and incidents. ▪ Monitor dust suppression mechanisms via visual inspections and record non-compliances. Maintain an incidents/ complaints register. The date, time, nature of complaint, name of complainant and corrective actions must be logged for all complaints. Complaints must be investigated and, if appropriate, acted upon.	▪ Daily ▪ Monthly during the decommissioning phase ▪ Monthly and during complaints/incidents	▪ Contractor and ECO ▪ ECO ▪ Contractor and ECO
Loss of topsoil due to poor topsoil management.	Ensure effective topsoil covering to conserve soil fertility on all disturbed areas, after they have been	▪ Strip, stockpile and re-spread topsoil during rehabilitation.	▪ Photograph the area on completion of rehabilitation and on an annual basis thereafter to show vegetation establishment	▪ As needed, dependent on the specifics of decommissioning activities.	▪ ECO ▪ Contractor

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	***Frequency***	***Responsibility***
	rehabilitated.		and evaluate progress of restoration over time.		
Soil erosion due to alteration of the land surface characteristics	To reduce erosion on site and downstream of the site as a result of run-off from the site, or due to wind erosion.	▪ Implement an effective system of run-off control, where it is required, that collects and safely disseminates run-off water from all hardened surfaces and prevents potential down slope erosion.	▪ Include periodic site inspection in environmental performance reporting that inspects the effectiveness and integrity of the run-off control system and specifically records the occurrence of any erosion on site or downstream. Corrective action must be implemented to the run-off control system in the event of any erosion occurring. ▪ Implement Stormwater Mangement Plan (Section 8) and the Erosion Management Plan (Section 9) and	▪ Monthly during the decommissioning phase.	▪ ECO
D.8. SOCIAL IMPACTS					
Loss of employment opportunities and project expenditure during the decommissioning of the proposed WEF.	Minimise job losses and impact of the loss of project expenditure.	▪ The proponent should comply with relevant South African labour legislation when retrenching employees. ▪ The proponent must implement appropriate succession training of locally employed staff earmarked for retrenchment during decommissioning. ▪ All project infrastructure should be decommissioned appropriately and thoroughly to	▪ Verify that retrenchment practices are compliant with South African labour legislation. ▪ Verify that the proponent implemented succession training of locally employed staff before the plant is decommissioned. Contracts ensuring that knowledge sharing and on-the-job training should be enforced	▪ Once-off during the decommissioning phase and once-off after decommissioning is completed.	▪ Contractor and ECO

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	***Frequency***	***Responsibility***
		avoid misuse. ▪ When devising enterprise development initiatives, the focus should be on creating sustainable and self-sufficient enterprises. This would mean that following the operational phase, these enterprises may be able to continue to operate. ▪ Contracts ensuring that knowledge sharing and on-the-job training should be enforced as a condition for the development of the project. This will ensure that all employees will have acquired a skills set that will potentially enable them to find other work at similar developments.	as a condition for the development of the project. ▪ Verify that decommissioned infrastructure does not pose any significant risk to the environment or the people living in the environment. ▪ Verify that the proponent implemented succession training of locally employed staff before the plant is decommissioned ▪ Verify that the proponent implemented sustainable enterprises.		
D.9. NOISE IMPACTS					
Increase in ambient sound levels during decommissioning activities.	Reduce the increase in ambient sound levels due to air-borne noise from the decommissioning activities during day and night	▪ Decommissioning activities to be limited to day-time only. ▪ Ensure that the change in ambient sound levels as experienced by Potentially Sensitive Receptors is less than 7 dBA; ▪ Ensure that total noise levels are less than 42 dBA at all potential noise-sensitive receptors; ▪ Prevent the generation of nuisance noises; ▪ Ensure acceptable noise levels at surrounding stakeholders and potentially sensitive receptors.	▪ Monitor compliance with National Noise Control Regulations.	▪ Daily during the decommissioning phase	▪ Project Owner ▪ ECO ▪ Contractor
D.10. TRAFFIC IMPACTS					

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	***Frequency***	***Responsibility***
Impact on air quality due to dust generation, noise and exhaust emissions from construction vehicles and equipment.	Limit the release of noise, pollutants and dust emission	▪ Implement the Traffic Management Plan (Section 7 of this EMPR); ▪ Implement management strategies for dust generation e.g. apply dust suppressant on the exposed areas and stockpiles as relevant.	▪ Ensure dust management measures are in place to adequately decrease the generation of dust.	▪ On-going	▪ Contractor and ECO
D.11. WASTE MANAGEMENT					
Generation of waste due to disassembly of the WEF and associated structures.	Avoid substantial negative impacts at the decommissioning phase due to insufficient planning.	▪ Suitable receptacles must be provided for the temporary storage of various waste types such as scrap metal and concrete, until it is removed to the nearest licensed landfill.	▪ Audit the implementation of mitigation measures recommended for the decommissioning phase.	▪ During the decommissioning phase	▪ ECO
		▪ Waste separation is encouraged and therefore receptacles should be labelled to reflect the different waste types. ▪ Ensure that the construction mitigation and management measures are adhered to during the decommissioning phase.	▪ Audit the implementation of mitigation measures recommended for the decommissioning phase.	▪ During the decommissioning phase	▪ ECO

APPENDIX A – LAYOUT MAP

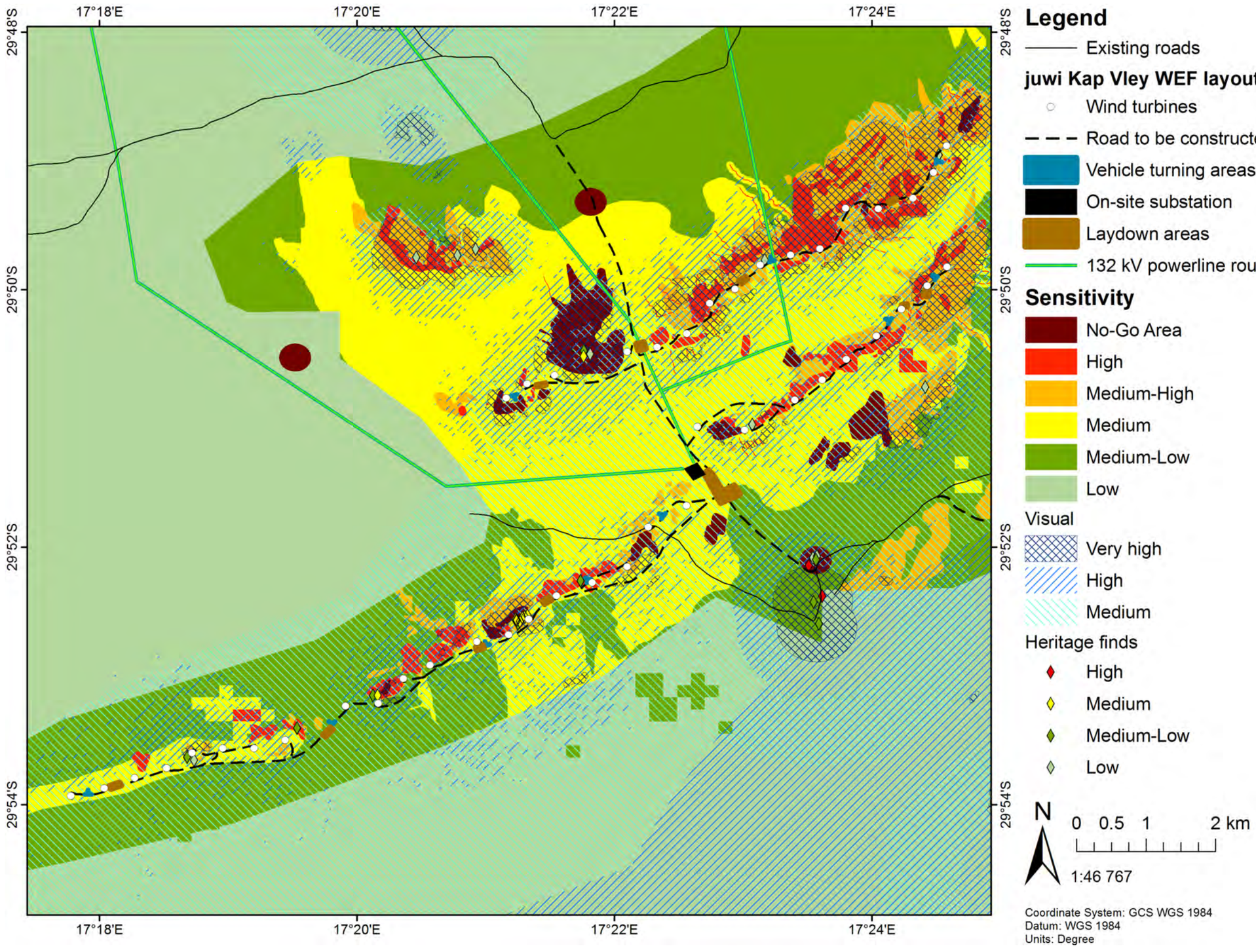


juwi Kap Vley WEF layout

Existing roads
Road to be constructed
Wind turbines
Vehicle turning areas
On-site substation
Laydown areas

Coordinate System: GCS WGS 1984
Datum: WGS 1984
Units: Degree

APPENDIX B – ENVIRONMENTAL SENSITIVITY MAP WITH THE KAP VLEY LAYOUT


17°18'E
17°20'E
17°22'E
17°24'E
29°48'S
29°50'S
29°52'S
29°54'S
Legend
Existing roads
juwi Kap Vley WEF layout
Wind turbines
Road to be constructed
Vehicle turning areas
On-site substation
Laydown areas
132 kV powerline routing options
Sensitivity
No-Go Area
High
Medium-High
Medium
Medium-Low
Low
Visual
Very high
High
Medium
Heritage finds
High
Medium
Medium-Low
Low
N
0 0.5 1 2 km
1:46 767
Coordinate System: GCS WGS 1984
Datum: WGS 1984
Units: Degree