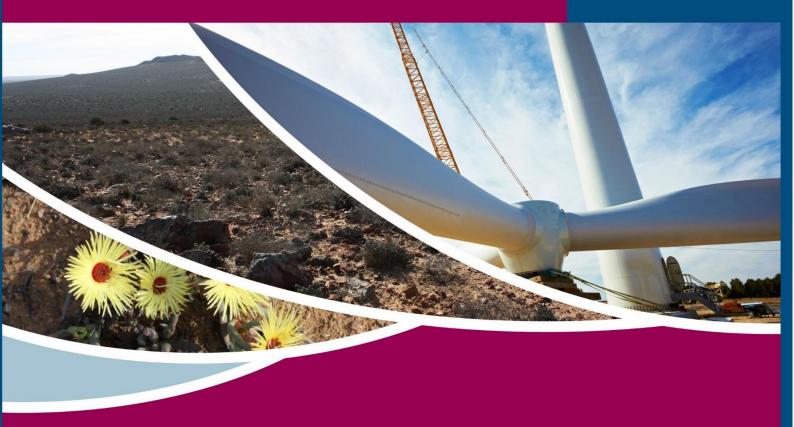
Amendment Report for an application for a substantive amendment to the Environmental Authorisation issued for the development of the Kap Vley Energy Facility, near Kleinzee in the Northern Cape Province





DRAFT AMENDMENT REPORT

Prepared for: Kap Vley Wind Farm (Pty) Ltd - a subsidiary of juwi Renewable Energies (Pty) Ltd

Prepared by:
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SUBSTANTIVE AMENDMENT

Draft Amendment Report to amend the Environmental Authorisation issued for the proposed Kap Vley Wind Energy Facility, south-east of Kleinzee, Northern Cape Province

DRAFT AMENDMENT REPORT

October 2019

Prepared for:

Kap Vley Wind Farm (Pty) Ltd - a subsidiary of juwi Renewable Energies (Pty) Ltd

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REPORT DETAILS

Title:	Draft Amendment Report to amend the Environmental Authorisation issued for the proposed Kap Vley Wind Energy Facility, south-east of Kleinzee, Northern Cape Province
Purpose of this report:	This Draft Amendment Report has been prepared in response to an application for a substantive amendment to the Environmental Authorisation (EA) issued for the proposed Kap Vley WEF which has been submitted to Department to Environment, Forestry and Fisheries (DEFF) as the competent authority (CA).
	The purpose of the report is to:
	 Present the proposed amendments to the CA and the Interested and Affected Parties (I&APs) on the project database;
	 Provide the motivation for the proposed amendments to the EA issued for the proposed Kap Vley WEF;
	 Provide an overview of the Amendment process being followed, including public consultation;
	Assess the potential impacts which the proposed amendments may have on the environment; and
	 Provide recommendations to avoid or mitigate negative impacts and to enhance the positive benefits of the project.
	This report comprises the Draft Amendment Report. The Draft Amendment Report has been made available to all I&APs, Organs of State and stakeholders for a 30-day review period. All comments submitted during the 30-day review of the Draft Amendment Report will be incorporated into the Final Amendment Report, as applicable and where necessary. The Final Amendment Report will be submitted to DEFF, in accordance with Regulation 19 (1) of the 2014 NEMA EIA Regulations (as amended), for decision-making in terms of Regulation 20 of the 2014 NEMA EIA Regulations (as amended).
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DEA Reference Number:	14/12/16/3/3/2/1046/AM1
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GLOSSARY

BA	Basic Assessment										
CA	Competent Authority										
CSIR	Council for Scientific and Industrial Research										
CV	Curriculum Vitae										
DAFF	Department of Agriculture, Forestry and Fisheries										
DEA	Department of Environmental Affairs										
DEFF	Department of Environment, Forestry and Fisheries										
DENC	Northern Cape Department of Environment and Nature										
D-5	Conservation										
DoE	Department Of Energy										
DWS	Department of Water and Sanitation										
EA	Environmental Authorisation										
EAP	Environmental Assessment Practitioner										
EIA	Environmental Impact Assessment										
EMPr	Environmental Management Programme										
GG	Government Gazette										
GN	Government Notice										
GN R	Government Notice Regulation										
HIA	Heritage Impact Assessment										
HWC	Heritage Western Cape										
I&AP	Interested and Affected Party										
IDP	Integrated Development Plan										
IPP	Independent Power Producer										
LED	Local Economic Development										
NEMA	National Environmental Management Act (Act 107 of 1998)										
NHRA	National Heritage Resources Act (Act 25 of 1999)										
NWA	National Water Act (Act 36 of 1998)										
O&M	Operation and Maintenance										
PPA	Power Purchasing Agreement										
PSDF	Provincial Spatial Development Framework										
REDZ	Renewable Energy Development Zone										
REIPPPP	Renewable Energy Independent Power Producer										
	Procurement Programme										
SAHRA	South African Heritage Resources Agency										
WEF	Wind Energy Facility										
	011										

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SECTION A: INTRODUCTION, PROJECT DESCRIPTION AND LEGISLATIVE REVIEW

A.1 Introduction

Juwi Renewable Energies (Pty) Ltd (hereinafter referred to as "juwi"), through its project company Kap Vley Wind Farm (Pty) Ltd, proposes to construct and operate the Kap Vley Wind Energy Facility (WEF) and associated electrical infrastructure approximately 30 km south-east of Kleinzee in the Northern Cape (Figure 1). In terms of National Environmental Management Act (Act 107 of 1998, as amended) (NEMA) and the NEMA Environmental Impact Assessment (EIA) Regulations, as amended, published in Government Notices (R982, R983, R984 and R985, as amended), a full Scoping and EIA process were undertaken for the proposed Kap Vley WEF.

The proposed Kap Vley WEF received Environmental Authorisation (EA) from the national Department of Environmental Affairs (DEA) (now operating as the Department of Environment, Forestry and Fisheries (DEFF) on 25 October 2018 (DEA reference number: 14/12/16/3/3/2/1046).

The applicant now wishes to amend the EA-more details regarding the proposed amendments are included in section B.1 of this report. An application for substantive amendment has been lodged with DEFF in accordance with Regulation 31 (Part 2) of the 2014 NEMA EIA Regulations, as amended. DEFF issued the reference number: 14/12/16/3/3/2/1046/AM1 for this amendment application.

A.2 Project location

The proposed Kap Vley WEF falls within the Nama Khoi local municipality which falls under the jurisdiction of the Namaqualand District Municipality.

The proposed Kap Vley WEF will be developed on the following land portions as can be seen in Figure 1:

- 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.

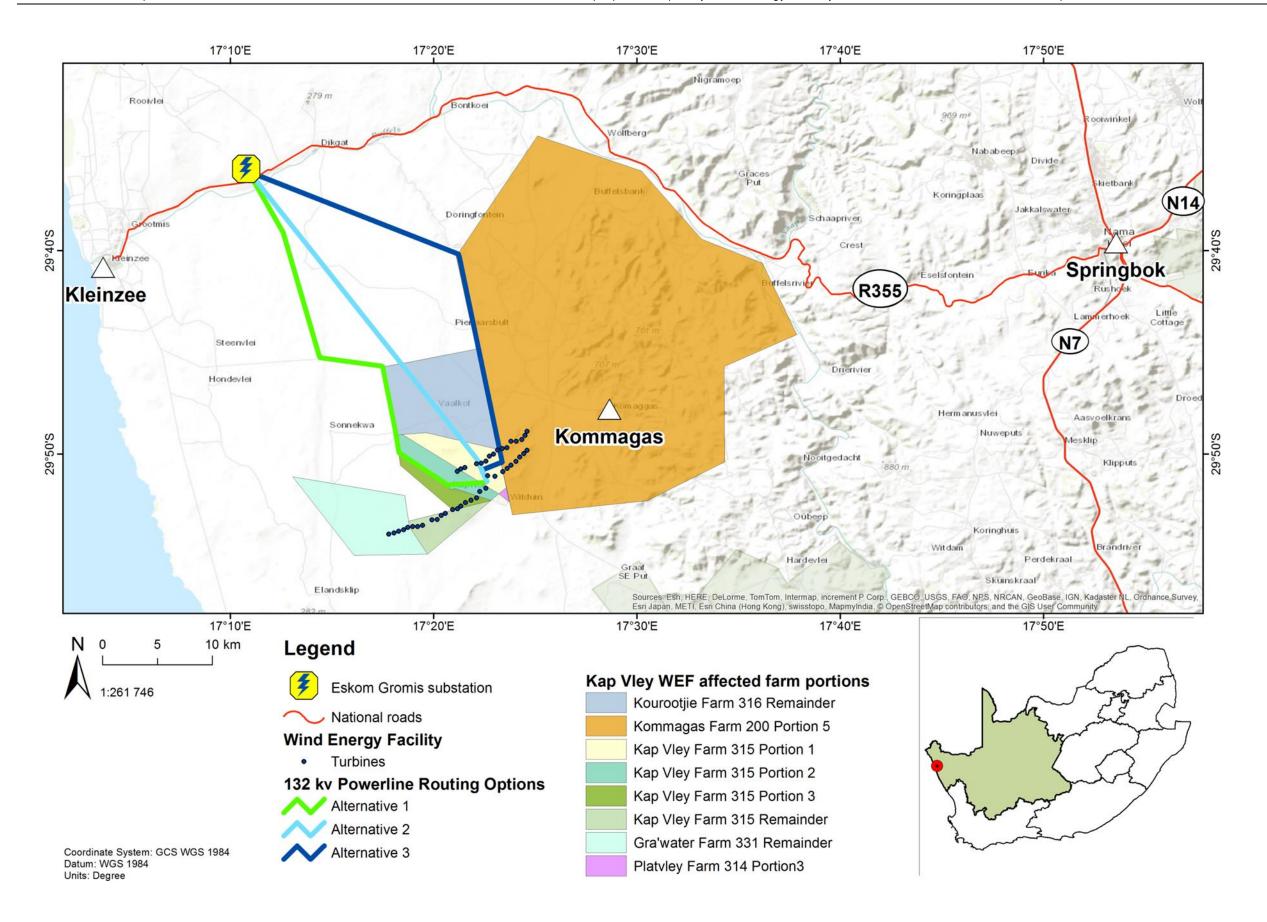


Figure 1. Locality map of the proposed Kap Vley Wind Energy Facility near Kleinzee in the Northern Cape (showing affected farm portions)

A.3 Project description

A summary of the project description and the key components that were authorised under the EA issued on 25 October 2018 are provided in Table 1. Please note that the applicant wishes to extend the approved range of the rotor diameter from 100 m to 160 m to 100 m to 200 m-more details on this proposed amendment and the motivation thereof are provided in section B.

Table 1. Summary of Project Description (approved as part of the EA dated 25 October 2018)

Infrastructure	Footprint and dimensions
Location of the site	District Municipality – Namaqualand District Municipality
	Local Municipality - Nama Khoi Local Municipality
	Ward number - 8
Farm Kamaggas 200- SG 21 Digit Code	C0530000000020000005
Farm Kap Vley 315 - SG 21 Digit Codes	C0530000000031500000
	C0530000000031500001
	C0530000000031500002
	C0530000000031500003
Farm Gra'water 331 - SG 21 Digit Code	C0530000000033100000
Farm Platvley 314 - SG 21 Digit Code	C0530000000031400003
Farm Kourootjie Farm 316- SG 21 Digit Code	C0530000000031600000
Number of turbines	20 – 45 turbines
Turbine Capacity	2-7 MW
Hub Height	80 - 150 m
Rotor Diameter	100 - 160 m
Project Size	50 - 300 MW
Area occupied by on-site substation	2.3 ha
Capacity of on-site substation	132 kV
Area occupied by construction lay down areas	13 ha, consisting of several laydown areas placed strategically
(including construction camp)	throughout the facility.
Permanent area occupied by the development	128 ha
footprint of the project	
Internal access roads	37 km of internal road linking a maximum of 45 turbine locations.
	The road will be 5 m in width and 15 m in sections to allow for
	passing, curvature and the physical footprint due to cut and fill
	requirements. Turning areas are also allowed for.
Concrete batching plant	0.25 ha (on-site batching)
Operations and maintenance building	1 ha with maximum height of 32 m including a communication tower.
Turbines	Reinforced concrete foundation – 25 m x 25 m
Turbines	Crane Platform –1 ha per turbine
Site Access	Access to the site is currently possible via existing farm access
Site Access	from the public roads to the north and south of the site.
Proximity to grid connection	Depending on the location of the substation on-site, a maximum
Froximity to grid connection	of 40 km will be accommodated for the length of the proposed
	overhead line from Gromis Substation – or closer to new Eskom
	substation for which location still needs to be determined – this
	component is assessed under a separate Basic Assessment
	process.
Fencing	Permanent fencing will be required around the O&M building
	and on-site substation and will be a maximum of 5 m high.

A.4 Project team

In accordance with Regulation 12 (1) of the 2014 NEMA EIA Regulations (as amended, published under Government Notice (GN) No. R982), juwi has appointed the CSIR to undertake the amendment process required for the proposed project. Minnelise Levendal is the Environmental Assessment Practitioner (EAP) for the Amendment process. Her Curriculum Vitae (CV) is included in Appendix A.

The specialist studies and associated specialists that formed part of the EIA that was originally undertaken by the CSIR in 2018 are listed in Table 2. The specialists that provided inputs in terms of the current amendment application are highlighted in bold and yellow. Please note that the same specialists who were part of the original EIA project team are part of this current amendment application. The inputs from the specialists are included in Appendix D.

From the specialist investigations undertaken for the EIA process for the Kap Vley WEF (CSIR, 2018), the following environmental impacts relevant to the amendment application were identified:

- Impacts on birds;
- Impacts on bats;
- Impacts visual landscape;
- Impact on heritage (cultural landscape); and
- Noise impact.

The proposed amendments will not impact on the current approved layout and buildable areas of the proposed Kap Vley WEF. Therefore, the other specialists included in Table 2 were not requested to provide comments on this amendment application (e.g. terrestrial, aquatic, socio-economic, transport and agricultural specialists).

The amendment application is informed by the specialists who address the impacts that are anticipated to occur as a result of the proposed amendments. The specialists were requested to confirm whether the original assessment ratings and management actions contained in the original EIA (CSIR, 2018) remain unchanged, or whether these are positively or negatively impacted upon. Section D summarises the findings of the specialists in this regard. The full specialist input letters/reports are available in Appendix D.

Table 2. The project team for the initial EIA that was undertaken for the proposed Kap Vley WEF. The specialists that informed this amendment report are highlighted in bold and yellow.

NAME	ORGANISATION	ROLE/STUDY TO BE UNDERTAKEN
Environmental Management S	ervices (CSIR)	
Paul Lochner	CSIR	Technical Advisor and Quality Assurance (EAPSA) Certified
Minnelise Levendal	CSIR	EAP (<i>Pr. Sci. Nat.</i>)
Specialists		
Simon Todd	Simon Todd Consulting	Ecology Impact Assessment (Terrestrial Ecology including fauna and flora); 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 Anja Albertyn	ARCUS	Bird Impact Assessment
Jonathan Aronson		Bat Impact Assessment
Johann Lanz	Private	Soils and Agricultural Potential Assessment
Surina Laurie	CSIR	Socio-Economic Impact Assessment
External Reviewer:	External Reviewer:	
Elena Broughton	Urban-Econ Development Economists	
Morné de Jager	Enviro-Acoustic Research	Noise Impact Assessment
Christo Bredenhann	WSP Group Africa (Pty) Ltd	Transportation Impact Assessment

A.5 Project Applicant

juwi Renewable Energies (Pty) Ltd (juwi) is part of the international juwi Group, one of the world's leading companies in the area of renewable energy. juwi focuses on solar energy and wind energy and works with landowners, project developers, technology providers, regulators and investors to source and develop renewable energy projects. juwi acts as the project interface, coordinating the research and studies, the site identification, the project structure, environmental impact assessments, selecting the strategic partners, arranging financing, ensuring bid compliance and bidding under the Department of Energy's (DoE) REIPPP Programme and reaching financial closure.

The applicant for this project is the juwi owned project company, Kap Vley Wind Farm (Pty) Ltd.

A.6 Legislative requirements

In terms of Regulation 31 and 32 of the 2014 National Environmental Management Act (NEMA) Environmental Impact Assessment (EIA) Regulations, as amended by 2018, juwi wishes to apply for a substantive amendment to the Environmental Authorisation issued. Regulation 31 (Part 2) of the 2014 NEMA EIA Regulations, as amended, states that:

"An environmental authorisation may be amended by following the process prescribed in this Part if the amendment will result in a change to the scope of a valid environmental authorisation where such change will result in an increased level or change in the nature of impact where such level or change in nature of impact was not-

- (a) assessed and included in the initial application for environmental authorisation; or
- (b) taken into consideration in the initial environmental authorisation; and the change does not, on its own, constitute a listed or specified activity."

As per sub-regulation (a) the proposed amendment to extend the rotor diameter range (i.e. from 100 m - 160 m to 100 m - 200 m) were not considered as part of the initial EIA process (CSIR, 2018), therefore these (potential) impacts associated with the current proposed amendments need to be assessed according to the change in the level or nature of impact.

SECTION B: AMENDMENTS CURRENTLY BEING APPLIED FOR

B.1 Amendments that are being applied for

The applicant wishes to apply for the following amendments:

1. Amendment to the authorised turbine dimension (rotor diameter)

The authorised vs proposed amendment to the rotor diameter are indicated below.

	Authorised rotor diameter	Proposed amendment to the rotor diameter
Rotor diameter	100-160 m	100 -200 m

2. Amendment to the contact details for the holder of the Environmental Authorisation

The contact person and contact details of the holder of the EA need to be changed as follow:

From:

Kap Vley Wind Farm (Pty) Ltd Mr Christopher Bellingham 24th Floor Metropolitan Centre 7 Walter Sisulu Avenue Foreshore Cape Town 8001

Telephone Number: (021) 831 6130 Cell phone number: (083) 443 5154 Fax Number: (021) 831 6199

Email Address: bellingham@juwi.co.za

To:

Kap Vley Wind Farm (Pty) Ltd Mr Steyn de Vos 20th Floor The Halyard 4 Christiaan Barnard Street Foreshore Cape Town 8001

Telephone Number: (021) 831 6147 Cell phone number: (082) 388 4738

Fax Number: (021) 831 6199

Email Address: steyn.devos@juwi.co.za

It should be noted that the holder of the EA [Kap Vley Wind Farm (Pty) Ltd] remains unchanged, it is simply the contact person and contact details for the holder that are requested to be revised.

B.2 Motivation for the application for amendment

Motivation for turbine specifications:

Following developments in technology after the issuing of the original EA and considering economic efficiency, the developer is proposing to install a turbine technology on the site which is best suited to the conditions on the site. This application for amendment for an increase in the rotor diameter range of up to 200 m (vs the authorised 160 m maximum blade length) are proposed in order to increase the efficiency of the facility and consequently the economic competitiveness thereof.

In the time since the original EIA was undertaken and the EA issued, the turbines that are available on the market have increased in both size and output power. The applicant wishes to amend the EA in order to cater for the larger turbine specifications, to enable the applicant to utilise the latest, most efficient turbines available on the market, which will increase the overall efficiency of the Kap Vley WEF. This in turn will increase the overall competitiveness of the project in the Renewable Energy Independent Power Producer Procurement (REIPPP) Programme and will allow the applicant to charge a lower tariff for the energy produced by the project - which would be for the benefit of all electricity consumers in SA.

The amendment to the wind turbine specifications is not a listed activity and will not trigger any new listed activities as the proposed amendment will fall within the originally authorised footprint of the facility.

Motivation for requested amendment in change to contact details of the EA holder:

The contact person and details have changed and this needs to be reflected in the EA.

B.3 Advantages and disadvantages of granting the amendments

The 2014 NEMA EIA Regulations, as amended, require that the advantages and disadvantages of granting the application must be outlined.

Advantages

In terms of advantages, granting the amendment application will mean that the latest turbines technology will be utilised and the wind farm will operate optimally. Hence the financial viability and the likelihood of the project proceeding will increase. Granting the amendment would therefore increase the possibility of the social benefits of the project being realised, such as contributing to corporate social investment, aiding the local economy and creating employment opportunities in the area. In terms of financial viability, should the amendment application be granted, the proponent's ability to bid a financial competitive project in the REIPPP Programme may be realised and thus increasing the likelihood of a successful bid. As a result, the positive socio-economic benefits, especially benefits to the Nama Khoi Local Municipality and Komaggas local community as a landowner on who's land the project is developed, would be realised. In a broader sense, the ability to make use of the latest and most efficient turbine technology will also increase the country's potential for obtaining the lowest possible cost renewable energy to allow for a clean energy transition.

Disadvantages

The proposed increase in rotor diameter from 100-160 m to 100-200 m (i.e. an increase of 40 m in the maximum rotor diameter) may have an impact on avifauna (birds), bats, noise, heritage (cultural landscape) and visual characteristics of the area. The potential impacts associated with the proposed change have thus been assessed by the relevant specialists who have all confirmed that the proposed amendment is acceptable in terms of environmental impacts. The assessments undertaken by the respective specialists are included in Appendix D of the Amendment Report.

It should be emphasised that the turbine layout is the same as the original layout that was included in the Final Environmental Impact Assessment Report dated July 2018 and which was approved by DEA in the EA dated 25 October 2018. Therefore, there are no changes to the turbine locations and associated infrastructure.

SECTION C: DESCRIPTION OF THE AFFECTED ENVIRONMENT

This section of the Amendment report provides an overview of the affected environment and surrounding region for the proposed Kap Vley WEF. The receiving environment is understood to include biophysical, socio-economic and heritage aspects which could be affected by the proposed development or which in turn might impact on the proposed development. The information presented in this section has also been derived from the specialist studies that are included in the Final EIA Report (CSIR, 2018).

C.1 Topography and landscape of the site

The topography of the site consists of a series of low ridges running across a generally flat terrain. The proposed development is located on a low mountain range, separated from the Komaggas Mountains further inland, with a series of ridges on the coastal plains. The coastal plains are at an altitude of about 250 m and the ridges range from an altitude of 300 m to a maximum altitude of just above 500 m. Slopes within the area vary with maximum slopes of 35% down the sides of the ridges where they are highest and steepest, with that said, the highest portion of this low range, the 'Brandberg', is 512 m above mean sea level. The other highpoints are known as 'Byneskop' and 'Graafwater se Kop'. The range is surrounded by a vast, flat to gently undulating coastal peneplain which, being visually exposed, tends to make the mountain ridge visible over long distances. The proposed turbine locations are along the ridge lines with maximum slopes impacted by any footprint of the development much less and are not likely to exceed 10%.

C.2 Avifauna

Information taken from the Bird Impact Assessment (ARCUS, 2018) (Appendix H of the Final EIA Report)

A 12-month preconstruction bird monitoring programme was developed and undertaken by ARCUS in line with Best Practice Guidelines applicable at the time of the surveys (Jenkins et al. 2015). Furthermore, the Verreauxs' Eagle Guidelines (BLSA 2017b) released by BirdLife South Africa (BLSA) was considered in the design of the monitoring programme.

A total of 82 positively identified species (including 15 priority species) have been recorded across both the Kap Vley WEF site and the control site after four seasonal surveys (Table 3). Six regional Red Data species (Taylor et al. 2015) have been recorded including three classified as Endangered (Black Harrier, Ludwig's Bustard and Martial Eagle), and three as Vulnerable (Verreaux's' Eagle, Lanner Falcon and Southern Black Korhaan). Of these, only Southern Black Korhaan was frequently recorded.

Sixty-four species were recorded at the control site. This lower number can be attributed to less time spent at the control site versus the WEF site and is not necessarily a reflection of local diversity. All 64 species recorded at the control site were also recorded on the WEF site, while 18 species were recorded only in the WEF site including Black Harrier, Martial Eagle, Southern Black Korhaan, Spotted Eagle Owl, Cape Eagle Owl, Black-chested Snake Eagle and Grey-winged Francolin.

Table 3. Priority Bird Species and Regional Red Data Species Recorded During the Surveys on the WEF and Control Sites

Full Name	Regional Red Data	Priority Species Score	sun	nmer	aut	umn	wii	nter	spring	
ruii Naille	Status		WEF	Control	WEF	Control	WEF	Control	WEF	Control
African Harrier-Hawk		190			х		х			
Black-chested Snake Eagle		230					х		х	
Black Harrier	EN	345					х		х	
Booted Eagle		230	х						х	х
Cape Eagle-Owl		250	х							
Greater Kestrel		174					х		х	х
Grey-winged Francolin		190					х			
Jackal Buzzard		250	х	х	х	х	х	х	х	х
Lanner Falcon	VU	300						х	х	
Ludwig's Bustard	EN	320					х	х	х	
Martial Eagle	EN	350							х	
Pale Chanting Goshawk		200	х	х	х	х	х	х	х	х
Southern Black Korhaan	VU	270	х		х		х		х	
Spotted Eagle-Owl		170	х						х	
Verreaux's' Eagle	VU	360	х		х	х			х	х

Activity and abundance of priority species and red data species were generally found to be low on the Kap Vley WEF site after one year of pre-construction monitoring. Thorough fieldwork and monitoring did not reveal any key or important avifaunal landscape features or sensitivities (e.g. nest sites) on or within 5 km of the WEF site. Abundances of small passerines were also found to be low. While the drought conditions experienced during the first two surveys (summer and autumn 2017), may have influenced the results, the third and fourth surveys (winter and spring) were conducted after rainfall in the area. It is unlikely that inter annual variation in bird occurrence would be so substantial to significantly alter the findings of this study. This can be said, as historical data sets from the area (as well as other studies done on surrounding proposed projects), did not reveal substantially different findings/conclusions. The Kap Vley WEF site has some of the lowest activity and occurrence of priority species experienced by the specialists, relative to other project sites worked on in South Africa. Passage rates were very low. The level of Verreaux's' Eagle activity is regarded as low, and it is unlikely that the development would pose a highly significant risk to this or any other species, except for a potentially moderate to high risk to Ludwig's Bustard posed by the Grid Connection line.

A dedicated search for cliff nests was conducted by the specialist and six cliff nest sites for unidentified Raptors, White-necked Raven and Verreauxs' Eagles have been found. It must be noted that no nests were found closer than 6.8 km from the nearest proposed turbines. Therefore, the current recommended turbine exclusion buffers shown in Table 4, will have no impact on proposed layout of the Kap Vley WEF. The exclusion buffers (Table 4) were based upon current international and South African best practise, as well as the recommendations of BLSA (BLSA 2017b).

Table 4. Cliff bird nest survey results

Nest	Approx. nest location	Approx. distance from nearest turbine	Species	Description	Comment	Turbine exclusion buffer
N1	29.769719°S 17.467132°E	6.8 km	Unidentified Raptor	Large nest on cliff. No clear evidence of use. No white-wash seen.	Only long distance view possible. Initially suspected inactive Verreaux's' Eagle nest, but species not recorded in autumn, winter or spring. More Likely a Jackal Buzzard nest.	1.5 km
N2	29.800851°S 17.501511°E	8.5 km	Unidentified Raptor	Medium size nest on cliff. No white- wash seen.	Adult Jackal Buzzard observed in vicinity. Suspect active Jackal Buzzard nest.	1.5 km
N3	29.803182°S 17.502349°E	8.5 km	White- necked Raven	Goat/sheep fur and rope observed in messy stick nest.	Pair of ravens observed in vicinity.	NA
N4	29.817942°S; 17.496148°E	7.8 km	Verreaux's' Eagle	Large stick nest on cliff.	Adult Verreaux's' Eagle observed sitting on nest. Assumed adult is a separate bird to the pair at N5 (2.8 km away).	3 km
N5	29.836030°S; 17.516480°E	9.75 km	Verreaux's' Eagle	Very large stick nest on cliff in a deep Kloof. Lots of evidence of use including prey items, feathers and whitewash.	Active nest site with pair observed flying above in April 2017. In winter 2017 a chick was observed on the nest. In spring 2017 a fledged sub adult and two adult birds were seen flying above nest site, indicating successful breeding.	3 km
N6	29.901507°S; 17.464862°	8.2 km	Unidentified Raptor	Medium sized stick nest on cliff in Kloof. No clear evidence of recent use.	Adult Jackal Buzzard observed in vicinity on two occasions. Suspect Jackal Buzzard nest.	1.5 km

The specialist identified and ranked bird sensitivity areas as shown below to inform the Kap Vley WEF layout:

High Sensitivity Areas

- Nest Site buffers (Various- see Table 4 and Figure 2); and
- → High Flight Sensitivity Zones These areas constitute a No-Go for turbine and overhead power-line placement.

Other infrastructure (e.g. roads, underground cables, offices, substations etc.) is permitted except within 1 km of raptor nest sites (although none were located on the project site).

Medium Sensitivity Areas

- National Freshwater Ecosystem Priority Areas (NFEPA) rivers and wetlands buffers: 200 m; and
- > Medium Flight Sensitivity Zones.

Infrastructure (including overhead power lines and wind turbines) is permitted, but not recommended in these areas.

♣ Low-Medium Sensitivity Areas

- > Low-Medium Flight Sensitivity Zones; and
- > 150 m Ridge Buffer.

All infrastructure permitted

Low Sensitivity Areas

Low Flight Sensitivity Zones

All infrastructure permitted.

The sensitivity layers identified by ARCUS (Figure 2) were incorporated by juwi into the project layout for the Kap Vley WEF.

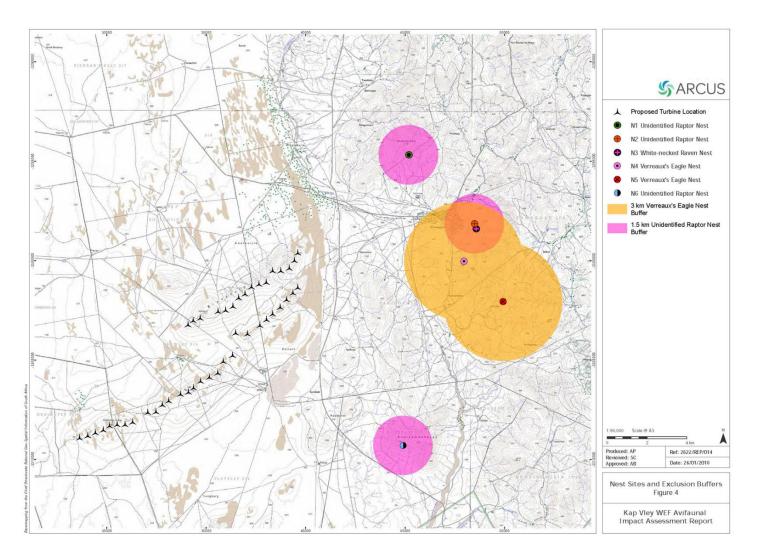


Figure 2. Nest sites and exclusion buffers (Source: ARCUS, 2018)

C.3 Bats

Information taken from the Bat Impact Assessment (ARCUS, 2018) (Appendix I of this report)

A 12-month preconstruction bat monitoring programme was undertaken by ARCUS in line with South African Good Practice Guidelines for Surveying Bats at Wind Energy Facility Developments - Preconstruction (Sowler *et al.* 2016).

The project falls within the actual or predicted distribution range of approximately eleven species of bat (African Chiroptera Report 2013; Monadjem *et al.* 2010). However, the distributions of some bat species in South Africa, particularly rarer species, are poorly known so it is possible that more (or fewer) species may be present. Analysis of the acoustic monitoring data suggests that at least five species of bat are present at the Kap Vley site (Table 5) (ARCUS, 2018). These five bat species have a Conservations Status of Least Concern

Bats were most often recorded in the lower lying areas of the site and were recorded less on ridges, where all turbines are proposed. A total of 17,912 bat passes were recorded from 356 sample nights across the five species and across all bat detectors. Overall, the levels of bat activity were low to moderate compared to other sites within a similar biome.

The bat monitoring data presented suggest that the development of the proposed Kap Vley WEF and associated power line can be achieved with acceptable risks to bats. The majority of the proposed turbines are situated in areas where low levels of bat activity were recorded, on the ridges, and as such they are less sensitive to development with regards to impacts to bats. 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 enter. Other infrastructure, such as roads and power lines, is permitted in this buffer.

Table 5. Bat species recorded at the proposed Kap Vley WEF site

Species	Species	# of Bat	Conservation Status ¹				
species	Code	Passes	National	International			
Egyptian free-tailed bat Tadarida aegyptiaca	EFB	7,290	Least Concern	Least Concern			
Roberts's flat-headed bat Sauromys petrophilus	RFB	235	Least Concern	Least Concern			
Natal long-fingered bat Miniopterus natalensis	NLB	3,737	Least Concern	Least Concern			
Cape serotine Neoromicia capensis	CS	6,009	Least Concern	Least Concern			
Long-tailed serotine Eptesicus hottentotus	LTS	641	Least Concern	Least Concern			

C.4 Visual landscape

Information taken from the Visual Impact Assessment (Bernard Oberholzer Landscape Architect / Environmental Planner in association with Quinton Lawson MLB Architects / Urban designers (2018) (Appendix K of the Final EIA Report)

The proposed site for the Kap Vley WEF consists of a low mountain range set in a broad, semi-arid coastal peneplain. The range, being less than 500 m above the surroundings, is considered to be a

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local, rather than a regional, landscape feature when seen in the context of the rugged mountains to the east.

The most important receptors are the Komaggas settlement about 7 km to the north-east, the Houthoop Guest Farm about 21 km to the north-west and the Namaqualand National Park, about 14 km to the south of the proposed Kap Vley WEF. There are also a number of small farmsteads in the otherwise sparsely populated area. It was found that the potential visibility of the proposed WEF would be moderate to marginal for most of the receptors, and in some cases practically not visible.

The proposed wind turbines would be highly visible on the skyline of the low mountain range and seen over a long distance of the surrounding plain. However, the mountain range is a local feature within the district and the receptors are mostly at a considerable distance from the proposed WEF, resulting in a visual significance rating of moderate-high based on the current preferred layout.

Related infrastructure, such as the substation and O&M buildings, are smaller in scale and therefore expected to have less visual effect. Recommended mitigations have been provided for the siting of these structures. The potential visual impact is expected to be of moderate significance before mitigation and moderate to low after mitigation.

C.5 Heritage profile (Cultural and natural landscape)

Information taken from the Heritage Impact Assessment (ASHA Consulting, 2018) (Appendix L of the Final EIA Report).

The Komaggas area contains many small stock posts which are actively used on a seasonal basis by members of the community who practice herding. Because this way of life has been ongoing for so long it is regarded as intangible heritage and the stock posts, although recent, are the physical manifestations of that heritage. They are also one of the primary components of the local cultural landscape, especially on the farm Kamaggas (ASHA Consulting, 2018).

Although there are several types of heritage present in and around the study area, only two are of concern in that significant impacts are more likely to occur. Archaeological sites comprised only of scatters of stone artefacts present in a number of areas of the proposed layout and will require excavation to mitigate the impacts to them, if they cannot be avoided. 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. The other aspects of heritage also considered but which will not be meaningfully affected, either through distance from the proposed development or because of the very low likelihood of impacts occurring, are palaeontology, graves, and the built environment.

The cultural landscape over the broader area is generally very weakly developed since humans have had only a very light 'footprint' on the landscape. The landscape relates to small stock farming and the main anthropogenic features one finds are fences and vehicle tracks, neither of which have any particular cultural significance.

SECTION D: COMPARATIVE IMPACT ASSESSMENT

In terms of Regulation 32(1)(a)(i), the following section provides an assessment of the impacts related to the proposed change in the maximum rotor diameter of the wind turbines. It is anticipated that the amendment may have the following potential impacts:

- Impact to avifauna;
- Impact to bats;
- Impact to visual landscape (cultural landscape);
- Impact on Noise Sensitive Developments; and
- Impact to heritage resources (cultural landscape).

Each of these potential impacts are discussed below.

D.1 Impacts to avifauna

The following section is based on the inputs provided by the avifaunal specialist (ARCUS, 2019; included in Appendix D.1) to inform this amendment application.

The specialist indicates that an increase in rotor diameter (i.e. an increase in blade length) will result in a larger Rotor Swept Area (RSA), which can be calculated as the area of the circle, swept by a given rotor diameter. One would initially assume that a larger RSA would mean an increase in the risk of collision. The RSA per wind turbine generator (WTG) for the authorised WTGs at the Kap Vley WEF is 20,107 m², while the proposed new WTG specifications will result in an RSA for each WTG of up to 31,416 m².

However, the specialist points out that based on a literature survey conducted [included in the specialist report in Appendix D.1 (ARCUS, 2019)], most published findings indicate that rotor swept area is not a key factor in the collision risk. Turbine dimensions seem to play an insignificant role in the magnitude of the collision risk in general, relative to other factors (e.g. topography, turbine location, turbine numbers, species abundance and passage rates, morphology and a species' inherent ability to avoid the turbines). The potential reduction in turbine numbers is likely to be an equally important factor in the overall significance of the collision risk of a project (even if it results in the same or higher combined RSA), potentially offsetting any additional negative risk cause by the change in WTG dimensions.

As indicated in Section C, the activity and abundance of priority bird species and red data species were generally found to be low on the Kap Vley WEF site after one year of pre-construction monitoring, and overall species diversity was also rated as low. Thorough fieldwork and monitoring did not reveal any key or important avifaunal landscape features or sensitivities (e.g. nest sites) on or within 5 km of the WEF site. Furthermore, the available bird micro-habitats on the WEF site are limited, and there are no important wetlands or rivers on the WEF site.

Abundances of small passerines were also found to be low. While the drought conditions experienced during the first two surveys (summer and autumn 2017), may have influenced the results, the third and fourth surveys (winter and spring) were conducted after rainfall in the area. It is unlikely that inter annual variation in bird occurrence would be so substantial to significantly alter the findings of this study. This can be said, as historical data sets from the area (as well as other studies done on surrounding proposed projects), did not reveal substantially different findings/conclusions. The Kap

Vley WEF site has some of the lowest activity and occurrence of priority species experienced by the specialists, relative to other project sites worked on in South Africa. Passage rates were low (i.e. 0.49 target species per hour) and the level of Verreaux's' Eagle activity (0.067 bird per hour) was regarded as very low, and it is unlikely that the development would pose a highly significant risk of turbine collision to this or any other species.

During the EIA process for the Kap Vley WEF and as part of the avifaunal impact assessment, a sensitivity mapping exercise found that 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 could protrude into a high sensitivity area and should be set back approximately 65 m north or 75 m north east to avoid this. These requirements have been added as a condition to the EA and the applicant is committed to moving this turbine out of the high sensitivity area during the micro siting of the final facility layout, based on the amended dimensions of the turbines.

Comparative assessment

The specialist confirms that the impact assessment contained in the Avifaunal specialist report (ARCUS, 2018) will not change based on the proposed amendment to increase the rotor diameter to a maximum of 200 m. The assessment as provided in the Final EIA Report (CSIR, 2018) is therefore still valid and applicable to this amendment application and is included in Table 6.

The following potential impacts to avifauna, which are also relevant to this amendment application, have been identified in the original avifaunal impact assessment (ARCUS, 2018):

Operational Phase

- Bird mortality due to collisions with operational wind turbines.

Cumulative Impact

- Bird mortality due to collisions with operational wind turbines.

The impact relating to the mortality of birds during operations and the associated cumulative impacts are applicable to the proposed increase in rotor diameter and therefore these are the only impact assessments that have been included for this assessment (Table 6). It is reiterated that the assessment ratings from the original assessment by ARCUS (2018) have not changed as a result of the proposed amendment to the rotor diameter.

Mitigation measures

The following mitigation measures have been included as conditions to the EA and should be implemented:

- 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.
- 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.

Conclusion

The impact assessment as presented in the Avifaunal Specialist Report (ARCUS, 2018) will not change based on the proposed amendment to increase the rotor diameter, and no additional/new impacts due to the proposed change have been identified. All mitigation measures contained in the avifaunal specialist report (ARCUS, 2018) must be included in the Environmental Management Programme (EMPr) and implemented accordingly by the applicant

Table 6. Impact Assessment: Birds as included in the original EIA (CSIR, 2018)

Impact pathway	Nature of potential impact/risk	Status ²	Extent ³	Duration ⁴	Consequence	Probability	Reversibility of impact	Irreplaceability of receiving environment/ resource	Significance of impact/risk = consequence x probability (before mitigation)	Can impact be avoided?	Can impact be managed or mitigated?	Potential mitigation measures	Significance of residual risk/ impact (after mitigation)	Ranking of impact/ risk	Confidence level
	AVIFAUNA														
					OF	ERATIO	ONAL PHASI	E-Direct ii	mpacts						
Collisions with operational wind turbines	Bird mortality	Negative	Regional	Long-term	Severe	Very Likely	Non-reversible	Moderate	High	No	Yes	Where feasible, construct minimum number of turbines required to meet project MW output. Adherence to no-go area buffers for turbine placement. Operational monitoring in line with applicable guidelines. Further operational mitigation measures to be researched, by appointed bird specialist, and the	Moderate	3	Medium

² Status: Positive (+); Negative (-)

³ Site; Local (<10 km); Regional (<100); National; International

⁴ Very short-term (instantaneous); Short-term (<1yr); Medium-term (1-10 yrs); Long-term (project duration); Permanent (beyond project decommissioning)

Impact pathway	Nature of potential impact/risk	Status ²	Extent ³	Duration ⁴	Consequence	Probability	Reversibility of impact	Irreplaceability of receiving environment/ resource	Significance of impact/risk = consequence x probability (before mitigation)	Can impact be avoided?	Can impact be managed or mitigated?	Potential mitigation measures	Significance of residual risk/ impact (after mitigation)	Ranking of impact/ risk	Confidence level
												appropriate selected mitigation implemented, if post construction monitoring reveal high levels of impacts.			
				(CUMU		VE IMPA Operationa		VIFAUN	IA					
Collisions with operational wind turbines	Bird mortality	Negative	Regional	Permanent	Severe	Very Likely	Non-reversible	Moderate	High	No		Where feasible, construct minimum number of turbines required to meet project MW output. Adherence to no-go area buffers for turbine placement. Operational monitoring in line with applicable guidelines. Further operational mitigation measures to be researched, by the appointed bird specialist and the appropriate		3	Medium

Draft Amendment Report for the amendments to the Environmental Authorisation issued for the proposed Kap Vley Wind Energy Facility, south-east of Kleinzee, Northern Cape Province

Impact pathway	Nature of potential impact/risk	Status ²	Extent ³	Duration⁴	Consequence	Probability	Reversibility of impact	Irreplaceability of receiving environment/ resource	Significance of impact/risk = consequence x probability (before mitigation)	Can impact be avoided?	Can impact be managed or mitigated?	Potential mitigation measures	Significance of residual risk/ impact (after mitigation)	Ranking of impact/ risk	Confidence level
												selected mitigation implemented, if post construction monitoring reveal high levels of impacts.			

D. 2 Impact to Bats

The following section is based on the inputs provided by the bat specialist (ARCUS, 2019; included in Appendix D.2 of this report) to inform this amendment application. This current assessment is also informed by the 12-month pre-construction bat monitoring that was undertaken by ARCUS to inform the EIA that was undertaken.

In conducting this assessment, ARCUS (2019) conducted a literature review on bats and wind energy impacts with a focus on the relationship between turbine size and bat fatality (see section 3 of the bat report). The issue relevant to this assessment is the impact to bats of amending the size of the turbines at the Kap Vley WEF. Currently, the rotor swept area for each turbine will be $20,107 \, \text{m}^2$ assuming turbines with blade lengths of 80 m. The amendment would result in an increase of the rotor swept area to $31,416 \, \text{m}^2$ assuming turbines with blade lengths of $100 \, \text{m}$. The minimum and maximum tip heights currently approved will be $70 \, \text{m}$ and $230 \, \text{m}$, using a turbine with a $150 \, \text{m}$ hub height. These dimensions would change to a minimum and maximum of $50 \, \text{m}$ and $250 \, \text{m}$ respectively when using a hub height of $150 \, \text{m}$ and blade length of $100 \, \text{m}$. With an $80 \, \text{m}$ hub height and blade length of $50 \, \text{m}$, the minimum blade tip could extend to $30 \, \text{m}$ above ground level, and extend to $130 \, \text{m}$ in the air based on the amendments being applied for.

It is not known what the impact of the size of turbines proposed for the Kap Vley WEF would be to bats because of a lack of published data from WEFs with turbines of a comparative size. Hein and Schirmacher (2016) suggest that bat fatality should continue to increase as turbines intrude into higher airspaces because bats are known to fly at high altitudes (McCracken et al. 2008; Peurach et al. 2009; Roeleke et al. 2018).

Based on unpublished data from 18 such sites Arcus has conducted pre-construction monitoring at, bat activity and species diversity is greater nearer ground level than at height. Therefore, even though bats are recorded at heights that would put them at risk from taller turbines, the proportion of bats that would be at risk might be less. Further, the number of species that might be impacted would decrease because not all bat species use the airspace congruent with the rotor swept area of modern turbines owing to morphological adaptations related to flight and echolocation. Bats that are adapted to use open air space, such as free-tailed and sheath-tailed bats, would be more at risk.

In the United Kingdom, both Collins and Jones (2009) and Mathews et al. (2016) showed that fewer species, and less activity, were recorded at heights between 30 m and 80 m compared to ground level. In two regions in France, Sattler and Bontadina (2005) recorded bat activity at ground level, 30 m, 50 m, 90 m and 150 m and found more species and higher activity at lower altitudes. Roemer et al. (2017) found that at 23 met masts distributed across France and Belgium, 87 % of bat activity recorded was near ground level. However, the authors also showed a significant positive correlation between a species preference for flying at height and their collision susceptibility, and between the number of bat passes recorded at height and raw (i.e. unadjusted) fatality counts. In a similar study in Switzerland, most bat activity was recorded at lower heights for most species, but the European free-tailed bat had greater activity with increasing height (Wellig et al. 2018).

Effect of the amendment on mitigation measures

There are several mitigation options available to avoid and reduce the potential for bat mortality to occur or to reduce bat mortality. Designing the layout of the project to avoid areas that are more frequently used by bats (i.e. low lying areas) may reduce the likelihood of mortality and should be the primary mitigation measure. For the Kap Vley WEF, low lying areas are avoided and all turbines are situated on the low ridges at the site, away from areas of higher bat activity and outside of nogo areas. However, these buffer areas need to be adjusted to account for the new turbine size.

Features that were buffered included roosts (either 200 m or 1 km), trees (200 m), NFEPA Rivers (200 m) and drainage lines (50 m). All buffers must be to blade tip and to determine the buffer distances required to ensure that no turbine blades enter the bat buffers,

the following formula was used (Mitchell-Jones and Carlin 2014): $b = \int (bd+bl)^2 - (hh-fh)^2$

Where: bd = buffer distance, bl = blade length, hh = hub height and fh = feature height (zero in this instance)

Thus, based on the above, using a turbine with a hub height of 150 m and a blade length of 100 m, the turbine base must be 260 m and 1,090 m away from bat roosts respectively, 260 m away from woodland/trees and 260 m from NFEPA Rivers. The turbine base should also be a minimum of 50 m away from drainage lines regardless of the formula. No turbines fall within these new, updated sensitivity buffers. One turbine is situated approximately 12 m from a drainage line buffer, while this turbine does not need to be relocated, appropriate micro-siting in consultation with the bat specialist is recommended.

Even though no turbines fall within bat sensitive areas, increasing evidence suggests that bats actively forage around wind turbines (Cryan et al. 2014; Foo et al. 2017). The installation of turbines in the landscape may alter bat activity patterns, either by increasing activity at height and/or increasing the diversity of species making use of higher airspaces. The greater rotor swept area being proposed as part of this amendment may increase the potential for these interactions. Therefore, there may still be residual impacts after these avoidance measures, and additional mitigation measures may be needed to minimise residual impacts. Turbine design (as explained in the following paragraph) can help to avoid, and hence, reduce residual impacts.

Since bat activity and species composition tend to be greater and more diverse respectively at lower altitudes, maximising the lower blade tip height is preferable. This could be achieved by having either shorter blades, a higher hub height, or both. However, adjusting the hub height alone would not limit impacts to higher flying species, and a higher hub height would be detrimental to high flying species despite possibly being beneficial to lower flying species. A lower hub height would decrease blade intrusion into higher airspaces and reduce the potential impact to high flying species such as free-tailed bats, but depending on blade length, might increase impacts to lower flying species. It would therefore be preferential, for both high flying and lower flying species, to reduce rotor swept area by having shorter blades. However, ARCUS acknowledges that it is difficult to determine the appropriate turbine size that would reduce impacts to both high and low flying species. Bats are active at 80 m at the site but there is no information on activity above 80 m. Bats are known to forage much higher than this, with evidence of bat activity at 200 m (Nguyen et al. 2019), 600 m (Fenton and Griffin 1997), and even up to 1 000 m above ground level (McCracken et al. 2008). Notably, this amendment may result in the blade tips reaching 250 m or 230 m above ground level which may coincide with the heights at which free-tailed bats are most active.

Comparative assessment

Field data were collected between March 2017 and February 2018 during the pre-construction monitoring. The key finding was that the vast majority of the bat activity, approximately 90%, was recorded in low lying areas of the site, away from proposed turbine positions. Further, at the meteorological mast bat activity was higher at the lower monitoring height. These findings suggest lower risk to bats in the potential rotor swept zone. The proposed amendment would result in an increase in impacts to bats (after mitigation) during the operational phase because of the larger rotor swept area and potential for greater residual impacts. However, the potential significance of bat mortality was rated as low after mitigation.

The assessment as provided in the Final EIA Report (CSIR, 2018) is therefore still valid and applicable to this amendment application and is included in Table 7 (impact significance of bat mortality is low after mitigation). Although the potential significance on bats remains low after mitigation, there is a higher likelihood that additional mitigation during peak activity periods would be required because of the larger blades.

The following potential impacts to bats which are relevant to this amendment application, have been identified in the Final EIA report for the proposed Kap Vley WEF:

Operational Phase

- Bat mortality during commuting and/or foraging and during migration by colliding with the operational wind turbines and/or due to barotrauma.

Cumulative impacts

- Bat mortality due to destruction or removing buildings, trees or rocky outcrops.

Mitigation measures

Beyond turbine design, more active mitigation to reduce these residual impacts will be needed and ultrasound deterrents and curtailment are two options available.

Curtailment is the most effective way to reduce residual impacts to bats (Arnett and May 2016; Hayes 2019) whereas deterrent technology is still in testing stages and its effect on reducing bat fatality less known (Arnett 2013). The amendment to the turbine specifications may increase the likelihood that curtailment or deterrents will need to be used, especially if a larger rotor swept area is used. To reduce the residual impacts during the operational phase, a smart curtailment approach (e.g. Hayes 2019) should be used which curtails turbines when bats are present by using acoustic monitors installed on wind turbines. In addition, the use of such a system should be based on bat fatality data, collected during the operational phase, using an adaptive management approach.

The benefit of this approach as opposed to basing curtailment solely on predicting when bats will be active based on meteorological conditions is that curtailment time could be reduced by approximately 48 % (Hayes 2019). Using smart curtailment does not imply that curtailment will be applied but the technology must be installed to monitor real-time bat activity and be triggered when bats are active around turbines.

Conclusion

The potential significance of bat mortality was rated as low after mitigation. The proposed amendment would result in an increase in impacts to bats (after mitigation) during the operational phase because of the larger rotor swept area and potential for greater residual impacts. Although the potential significance on bats remains low after mitigation, there is a higher likelihood that additional mitigation during peak activity periods would be required because of the larger blades.

Table 7. Impact Assessment: Bats as included in the original Bird Impact Assessment and Final EIA Report (ARCUS, 2018 and CSIR, 2018 respectively)

Impact pathway	Nature of potential impact/risk	Status ⁵	Extent ⁶	Duration ⁷	Consequence	Probability	Reversibility of impact	Irreplaceability of receiving environment/ resource	Significance of impact/risk = consequence x probability (before mitigation)	Can impact be avoided?	Can impact be managed or mitigated?	Potential mitigation measures	Significance of residual risk/ impact	Ranking of impact/ risk	Confidence level
							BATS								
					OPER	RATION	AL PHASE-D	irect imp	acts						
Collisions with Operational Wind Turbines	Bat Mortality during commuting and/or foraging	Negative	Regional	Long- term	Severe	Very Likely	Non-reversible	Moderate	High	No	Yes	Avoid areas more frequently used by bats. Operational acoustic	Low	4	Medium
		Negative	National	Permanent	Severe	Unlikely	Non-reversible	Moderate	Moderate	No	Yes	monitoring and carcass searches to advise operational minimization strategies.	Low	4	Medium
CUMULATIVE IMPACTS															
OPERATIONAL PHASE															
Collision with operational wind turbines	Bat Mortality during commuting and/or foraging	Negative	Regional	Long-term	Severe	Very Likely	Non-reversible	Low	High	No	Yes	Avoid areas more frequently used by bats.	Moderate	3	Low

⁵ Status: Positive (+); Negative (-)

⁶ Site; Local (<10 km); Regional (<100); National; International

⁷ Very short-term (instantaneous); Short-term (<1yr); Medium-term (1-10 yrs); Long-term (project duration); Permanent (beyond project decommissioning)

Impact pathway	Nature of potential impact/risk	Status ⁵	Extent ⁶	Duration ⁷	Consequence	Probability	Reversibility of impact	Irreplaceability of receiving environment/ resource	Significance of impact/risk = consequence x probability (before mitigation)	Can impact be avoided?	Can impact be managed or mitigated?	Potential mitigation measures	Significance of residual risk/ impact	Ranking of impact/ risk	Confidence level
												Operational acoustic monitoring and carcass searches to advise operational minimization strategies.			
	Bat Mortality during migration	Negative	National	Long-term	Severe	Very Likely	Non-reversible	Low	High	No	Yes		Moderate	3	Low

D. 3 Visual

The following section is based on the inputs provided by the visual specialist (Oberholzer and Lawson, 2019; included in Appendix D.3 of this report) to inform this amendment application.

The visual specialists were requested to comment on the visual implications of the change in the rotor diameter to a maximum of 200 m. The specialists note that the information provided by the applicant indicates that all the other technical parameters of the wind turbines and of the site layout plan will remain the same.

As the visual specialists of the original Visual Impact Assessment (VIA) for the Kap Vley WEF in 2018 Oberholzer and Lawson (2019) referred to their previous VIA Report, where a viewshed of the proposed turbines was prepared based on a hub height of 150 m. Based on their experience of conducting VIAs for other wind farms they have found that minor changes to the hub height and rotor diameter have little effect on visibility of the turbines and on the extent of the viewshed, particularly at distances beyond 5 km. In addition, any changes to the visual photomontages would be so marginal as to be imperceptible.

Comparative assessment

It is the view of the visual specialists that the proposed change in the rotor diameter will not have a bearing on the overall visual impact significance ratings, nor the cumulative visual impacts assessed in the previous VIA of 2018.

The following potential visual impacts as relevant to this amendment application, have been identified in the VIA (Oberholzer and Lawson, 2018) and included in the Final EIA report for the proposed Kap Vley WEF:

Operational Phase

- Potential visual intrusion caused by large scale wind turbines on the skyline of the rural landscape.

Cumulative impacts:

The site lies within a gazetted Renewable Energy Development zone REDZ (REDZ 8): Springbok, and is therefore within an identified wind development area for which cumulative visual impacts would be expected.

Cumulative visual impacts could arise from the proximity of the proposed Eskom 300 MW WEF, about 12 km to the north-west of the site, because of its proximity. The other proposed wind energy and solar energy facilities in the region would, however, have a limited visual influence on the proposed Kap Vley WEF because of their distance from the site, which suggests that a major overall cumulative visual effect is not expected, and significance rated as moderate. Kleinzee could also potentially be seen as a renewable energy node in the future.

Given the remoteness of the proposed Kap Vley WEF site, the sparsely populated area, the previous disturbance by diamond-mining, and the local scale of the project, no potential fatal flaws from a visual perspective are expected. However, the visual mitigations outlined in the Visual Assessment Report (included as Appendix K of the Final EIA Report) should be included in the EA (should this be granted) and EMPr to minimise potential adverse visual impacts.

Table 8 provides the impact assessment which is included in the original Visual Impact Assessment (Oberholzer and Lawson. 2018) contained in the Final EIA Report for the proposed Kap Vley WEF.

These assessment ratings are still applicable, as the specialists confirmed that the amendments will not have a bearing on these visual impact assessments ratings.

Mitigations and conclusions

Provided that the visual mitigations listed in the original visual impact study, and inputs to the EMPr, including post-construction rehabilitation of the site, are adhered to, the previous VIA for the Kap Vley project should still be valid, and no further visual mitigation is considered necessary. This assessment is therefore still applicable for this amendment application.

Table 8. Impact Assessment: Visual as included in the original Visual Impact Assessment and Final EIA Report (ARCUS, 2018 and CSIR, 2018 respectively)

Impact pathway	Nature of potential impact/risk	Status ⁸	Extent ⁹	Duration ¹⁰	Consequence	Probability	Reversibility of impact	Irreplaceability of receiving environment/ resource	Significance of impact/risk = consequence x probability (before mitigation)	Can impact be avoided?	Can impact be managed or mitigated?	Potential mitigation measures	Significance of residual risk/ impact (after mitigation)	Ranking of impact/ risk	Confidence level
VISUAL															
					OF	PERATIO	NAL PHASE-Dir	ect impacts							
	Visual intrusion of turbines on skyline.	Negative	Local	Long-term	Severe	Very likely	Moderate-High	Low after decommission-ning	Moderate- High	No	No	Avoidance of steep slopes (>1:5 gradient).	Moderate- High	3	High
	CUMULATIVE IMPACTS														
OPERATIONAL PHASE															
Combined visual effect of WEF, related infrastructure and adjacent renewable energy projects.	Visual intrusion on character of the area.	Negative	Regional	Long-term	Substantial	Very Likely	High	Low	Moderate	No	No	Minimal potential for mitigation.	Moderate	3	Mediu m

⁸ Status: Positive (+); Negative (-)

⁹ Site; Local (<10 km); Regional (<100); National; International

¹⁰ Very short-term (instantaneous); Short-term (<1yr); Medium-term (1-10 yrs); Long-term (project duration); Permanent (beyond project decommissioning)

D.4 Noise

The following section is based on the inputs provided by the noise specialist (de Jager, 2019; included in Appendix D.4 of this report) to inform this amendment application.

Enviro-Acoustic Research CC (EAR) (Morne de Jager) conducted an Environmental Noise Impact Assessment (ENIA) during 2017 for the proposed Kap Vley WEF, with one layout evaluated for the final report. With the input data as used, this assessment indicated that the proposed project will have a noise impact of a low significance on the identified Noise Sensitive Developments (NSDs) in the area during the construction phase and, a noise impact of low significance for the operational phases using the Acciona AW125 wind turbine (for all wind speeds). This wind turbine has a maximum sound power generation level of 108.4 dBA and the projected maximum noise levels would be less than 45 dBA at the closest NSD.

The wind energy market is fast changing and adapting to new technologies as well as site specific constraints. Optimizing the technical specifications can add value through. For example, minimizing environmental impact and maximizing energy yield. As such the developer has been evaluating several turbine models, however the selection will only be finalized at a later stage once the most optimal wind turbine is identified (factors such as meteorological data, price and financing options, guarantees and maintenance costs, etc. must be considered).

Due to the availability of more optimal or efficient wind turbines, the developer of the Kap Vley WEF is considering changing the wind turbine specifications. As the specifications of the final selection are not yet defined, this review will evaluate a potential worst-case scenario, considering a wind turbine with a sound power emission level of 108.5 dBA. The main change would be the increase of the rotor diameter to 200 m. The layout will not change.

It should be noted that wind turbine specifications such as hub height and rotor diameter generally do not impact on the sound power emission levels of a specific wind turbine model, with the sound power emission levels being within 1 dB for different hub heights (for the same wind turbine model).

Comparative assessment

Therefore, considering the location of the wind turbines and the potential predicted noise levels, it is the opinion of the noise specialist (De Jager, 2019) that the proposed change will not increase or change the significance of the noise impact as identified in the Final EIA Report (CSIR, 2018).

The Noise Impact Assessment that was included in the Final EIA Report notes a potential noise impact of a very low significance (before and after mitigation) for the operation of the wind turbines at night. This assessment is therefore still relevant to this amendment application and is included in Table 9.

Mitigation measures

A full noise impact assessment with new modelling will not be required and the findings and recommendations as contained in the previous assessment (report CSIR-JKVWEF/ENIA/201709-Rev 4/Short) included in the Final EIA Report (CSIR, 2018) will still be valid.

Conclusions

The proposed increase in rotor diameter will not affect the impact significance ratings as contained in the VIA included in the Final EIA Report (CSIR, 2018). This noise impact assessment is therefore still applicable for this amendment application.

Table 9. Impact Assessment: Noise as included in the original Noise Impact Assessment and Final EIA Report (De Jager, 2018 and CSIR, 2018 respectively)

Impact pathway	Nature of potential impact/risk	Status ¹¹	Extent ¹²	Duration ¹³	Consequence	Probability	Reversibility of impact	Irreplaceability of receiving environment/ resource	Significance of impact/risk = consequence x probability (before mitigation)	Can impact be avoided?	Can impact be managed or mitigated?	Potential mitigation measures	Significance of residual risk/ impact (after mitigation)	Ranking of impact/ risk	Confidence level
	VISUAL														
					OI	PERATIONA	AL PHASE-Di	rect impacts							
Noise pollution stemming from operation of WEF	Wind turbines operating simultaneously at night. Increases in ambient sound levels due to airborne noises from the wind turbines		Regional	Long-term	Moderate	Probable	High	N/A	Low	No	required	Ensure that the change in ambient sound levels as experienced by Potentially Sensitive Receptor is less than 7 dBA; Ensure that total noise levels are less than 42 dBA at all potential noise-sensitive receptors;	Low	4	High
												Prevent the generation of nuisance noises;			

¹¹ Status: Positive (+); Negative (-)

¹² Site; Local (<10 km); Regional (<100); National; International

¹³ Very short-term (instantaneous); Short-term (<1yr); Medium-term (1-10 yrs); Long-term (project duration); Permanent (beyond project decommissioning)

Impact pathway	Nature of potential impact/risk	Status ¹¹	Extent ¹²	Duration ¹³	Consequence	Probability	Reversibility of impact	Irreplaceability of receiving environment/ resource	Significance of impact/risk = consequence x probability (before mitigation)	Can impact be avoided?	Can impact be managed or mitigated?	Potential mitigation measures	Significance of residual risk/ impact (after mitigation)	Ranking of impact/ risk	Confidence level
												Ensure acceptable noise levels at surrounding stakeholders and potentially sensitive receptors.			

D. 5 Heritage

The following section is based on the inputs provided by the heritage specialist (Orton, 2019; included in Appendix D.5 of this report) to inform this amendment application.

Mr Jayson Orton of ASHA provided inputs to potential impacts which the proposed amendment may have on heritage resources. Mr Orton is cognisant that there is no change to the layout or hub height but that larger rotors are being applied for. The original authorisation allowed for a rotor diameter of 100 to 160 m, but the amendment seeks to increase this to a range of 100 - 200 m.

Comparative assessment

Given that it is only an increase in rotor diameter there will be no associated changes in the impacts to either archaeological or palaeontological resources. The only potential impact change would be to visual impacts to the cultural landscape. In this regard, reference is made to the comment of Bernie Oberholzer and Quinton Lawson (the visual impact assessors) who note that increases in turbine height have minimal effect on the visibility of the turbines (Oberholzer and Lawson, 2019). This means that once turbines are present in a landscape their size is only a minor consideration. Given that Oberholzer and Lawson are of the opinion that the proposed increased rotor diameter will have a negligible effect on the visual impact assessment, Mr Orton finds that there must similarly be a negligible effect on the impacts to the cultural landscape. The Heritage Impact Assessment (HIA) that was included in the Final EIA Report (CSIR, 2018) notes the impact associated with the visual intrusion into the cultural landscape is of moderate significance (before and after mitigation) for the operational phase. This assessment is still relevant to this amendment application and is included in Table 10.

Findings

- ❖ No meaningful changes to the assessed impacts will occur; and
- No changes to the ratings made in the original EIA are required.

The following potential impacts to heritage resources as relevant to this amendment application, have been identified in the Heritage Impact Assessment (Orton, 2018) and are included in the Final EIA report for the proposed Kap Vley WEF:

Operational Phase

- Potential visual intrusion caused by large scale wind turbines on the skyline of the rural landscape.

Cumulative impacts:

 Potential impacts to the cultural landscape and disruption of traditional activities.

Conclusions

The proposed increased rotor diameter can be supported from a heritage point of view. It is recommended that SAHRA support the proposed amendment application. The initial HIA is therefore still applicable for this amendment application.

Table 10. Impact Assessment: Heritage as included in the original Heritage Impact Assessment and the Final EIA Report (De Jager, 2018 and CSIR, 2018 respectively)

Impact pathway	Nature of potential impact/risk	Status ¹⁴	Extent ¹⁵	Duration ¹⁶	Consequence	Probability	Reversibility of impact	Irreplaceability of receiving environment/ resource	Significance of impact/risk = consequence x probability (before mitigation)	Can impact be avoided?	Can impact be managed or mitigated?	Potential mitigation measures	Significance of residual risk/ impact (after mitigation)	Ranking of impact/ risk	Confidence level
	HERITAGE														
					OPE	RATIO	NAL PHASE-Di	rect impact:	s						
Existence of facility in landscape	Visual intrusion into the cultural landscape	Negative	Local	Long term	Substantial	Very likely	Moderate (some landscape scarring likely to remain)	High (heritage resources are unique)	Moderate	No	No	Keep traffic on site to a minimum.	Moderate	3	High
						CU	MULATIVE IMI	PACT							
						OP	ERATIONAL P	HASE							
Existence of facility in landscape	Visual intrusion into the cultural landscape	Negative	Local	Long-term	Substantial		Non- reversible (resources cannot be recreated)	High (heritage resources are unique)	Moderate	No	Yes	Minimise landscape scarring from cut and fill operations. Minimise overall footprint.	Moderate	3	High

¹⁴ Status: Positive (+); Negative (-)

¹⁵ Site; Local (<10 km); Regional (<100); National; International

¹⁶ Very short-term (instantaneous); Short-term (<1yr); Medium-term (1-10 yrs); Long-term (project duration); Permanent (beyond project decommissioning)

Draft Amendment Report for the amendments to the Environmental Authorisation issued for the proposed Kap Vley Wind Energy Facility, south-east of Kleinzee, Northern Cape Province

Impact pathway	Nature of potential impact/risk	Status ¹⁴	Extent ¹⁵	Duration ¹⁶	Consequence	Probability	Reversibility of impact	Irreplaceability of receiving environment/ resource	Significance of impact/risk = consequence x probability (before mitigation)	Can impact be avoided?	Can impact be managed or mitigated?	Potential mitigation measures	Significance of residual risk/ impact (after mitigation)	Ranking of impact/ risk	Confidence level
												Minimise fencing in communal lands.			

SECTION E: PUBLIC PARTICIPATION

Approach to the Public Participation Process

Regulation 32 (1) of the 2014 NEMA EIA Regulations, as amended by 2018, state that:

"The applicant must within 90 days of receipt by the competent authority of the application made in terms of regulation 31, submit to the competent authority -

- (a) a report, reflecting-
 - (i) an assessment of all impacts related to the proposed change;
 - (ii) advantages and disadvantages associated with the proposed change;
 - (iii) measures to ensure avoidance, management and mitigation of impacts associated with such proposed change; and
 - (iv) any changes to the EMPr.

which report-

- (aa) had been subjected to a public participation process, which had been agreed to by the competent authority, and which was appropriate to bring the proposed change to the attention of potential and registered interested and affected parties, including organs of state, which have jurisdiction in respect of any aspect of the relevant activity, and the competent authority, and
- (bb) reflects the incorporation of comments received, including any comments of the competent authority."

All potential I&APs have been notified of the release of the Draft Amendment Report for a 30-day commenting period via the following means:

Newspaper Advertisement:

In order to notify and inform the public of the proposed amendment process and invite I&APs to register on the project database and to comment on the Draft Amendment Report, the release of the Draft Amendment Report has been advertised in the Plattelander. The advertisement will be placed in English and Afrikaans. The newspaper advertisements will provide the details of the project website (i.e. https://www.csir.co.za/environmental-impact-assessment), as an indication of where information available on the project can be downloaded from. A copy of the text included in the newspaper advertisements is included in Appendix B.1 of this Amendment Report. Proof of placement of the newspaper advertisements will be included in Appendix B.1 of the finalised Amendment Report.

Site Notice Board:

Regulation 41 (2) (a) of the 2014 NEMA EIA Regulations (as amended) requires that a notice board providing information on the project and Amendment process is fixed at a place that is conspicuous to and accessible by the public at the boundary, on the fence or along the corridor of the site where the application will be undertaken or any alternative site. To this end, notice boards were placed at the farm entrances and two local cafes in Kleinzee and Kommagas. The text of the notice boards is included in Appendix B.2. Photos of the actual site notices placed (including the coordinates) will be included in the Final Amendment Report which will be submitted to DEFF.

<u>Letter 1 to l&APs to Inform l&APs of the Amendment Process and availability of the Draft Amendment Report:</u>

Written notification to inform I&APs of the current Amendment application and to inform them of the availability of the Draft Amendment Report for comment will be sent to all I&APs and Organs of State registered on the project database via Letter 1 via email (where email addresses are available) and via courier (to *inter alia* the Kleinzee Public Library, the Northern Cape Department of Environment and Nature Conservation (DENC)). The letter will include notification of the proposed amendment and of the 30-day comment period for the Draft Amendment Report, as well as a copy of the Comment and Registration Form. Proof of courier waybills and a copy of the emails sent will be included in Appendix B of the finalised Amendment Report (which will be submitted to the DEFF for decision-making).

Availability of information

The Draft Amendment Report will be made available and distributed to ensure access to information on the project and to communicate the outcome of specialist studies. Copies of the report will be placed at the Kleinzee local library for I&APs and Stakeholders to access for viewing. Key authorities will be provided with either a hard copy and/or CD of the Amendment Report via courier. The Amendment Report will also be uploaded to the project website (i.e. https://www.csir.co.za/environmental-impact-assessment) and telephonic consultations will take place, as necessary.

Compilation of the finalised Amendment Report for submission to DEFF

Following the 30-day commenting period of the Draft Amendment Report and incorporation of the comments received into the report, the finalised Amendment Report (i.e. hard copies and electronic copies) will be submitted to the DEFF in line with Regulation 19 (1) (a) of the 2014 NEMA EIA Regulations (as amended). In line with best practice, I&APs on the project database will be notified via email (where email addresses are available) of the submission of the finalised Amendment Report to the DEFF for decision-making.

The Final Amendment Report which will be submitted for decision-making will include proof of the PPP that will be undertaken to inform Organs of State, stakeholders and I&APs of the availability of the Draft Amendment Report for the 30-day review (as explained above). To ensure ongoing access to information, copies of the Final Amendment Report that will be submitted for decision-making and the Comments and Response Report (detailing comments received and responses thereto) will be placed on the project website (i.e. https://www.csir.co.za/environmental-impact-assessment).

Environmental decision-making

Subsequent to the decision-making phase, all registered I&APs, Organs of State and stakeholders on the project database will receive notification of the decision by DEFF to amend the EA or not and the associated appeal period. The 2014 NEMA EIA Regulations (as amended) (i.e. Regulation 4 (1)) states that after the Competent Authority has a reached a decision, it must inform the Applicant of the decision, in writing, within 5 days of such decision. Regulation 4 (2) of the 2014 NEMA EIA Regulations (as amended) stipulates that I&APs need to be informed of the EA and associated appeal period within 14 days of the date of the decision. All registered I&APs will be informed of the decision by DEFF and the appeal procedure and its respective timelines. A letter (i.e. Letter 2) will also be sent via email to all registered I&APs, Stakeholders and Organs of State (where postal, physical and email addresses are available) on the database.

SECTION F: NATIONAL PLANNING INITIATIVES

In 2013 the National DEA commissioned the SEA for Wind and Solar PV development (Phase 1), which aims to identify strategic geographical areas best suited for the roll-out of large scale wind and solar PV energy projects, referred to as Renewable Energy Development Zones (REDZs). Eight REDZs have been identified and assessed in the SEA, namely: REDZ 1: Overberg; REDZ 2: Komsberg; REDZ 3: Cookhouse; REDZ 4: Stormberg; REDZ 5: Kimberley; REDZ 6: Vryburg; REDZ 7: Upington; and REDZ 8: Springbok (CSIR, 2015). The proposed Kap Vley WEF falls within REDZ 8: Springbok, as shown in Figure 3. The eight REDZs were gazetted for implementation on 16 February 2018 in Government Gazette 41445, Government Notice 114.

The proposed project is therefore aligned with national planning priorities. On a local and provincial level, the implementation of the proposed project will contribute to the objectives of the Provincial Spatial Development Framework (PSDF) and Integrated Development Plan (IDP) through the generation of electricity through renewable sources; the creation of employment opportunities during the construction and operational phases of the project and local socio-economic development.

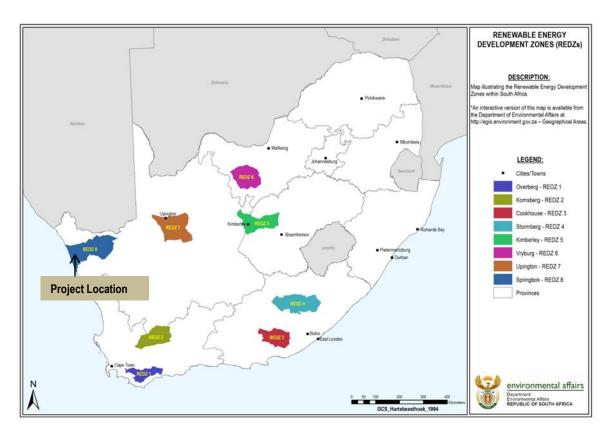


Figure 3. Renewable Energy Development Zones (REDZs) identified in the SEA Phase 1 (REDZ 1: Overberg; REDZ 2: Komsberg; REDZ 3: Cookhouse; REDZ 4: Stormberg; REDZ 5: Kimberley; REDZ 6: Vryburg; REDZ 7: and Upington; REDZ 8: Springbok) (CSIR, 2015). The proposed project falls within the REDZ 8: Springbok

SECTION G: CONCLUSIONS

Summary of amendments required

The proposed amendments currently being applied for are listed in Table 11. It is emphasised that the implementation of the proposed amendments to the Environmental Authorisation and to the proposed Kap Vley WEF will not result in unacceptable environmental impacts. This was confirmed by the specialists on the project team (see specialists' inputs found in Appendix D of this report).

Table 11. The amendments currently being applied for in this amendment application (the proposed amendments are shown in bold and yellow)

COMPONENT	FROM	то
Wind turbine generators	Rotor Diameter range of up to 150 m	Rotor Diameter range of up to 200 m
Contact details of the holder of the Environment	Kap Vley Wind Farm (Pty) Ltd Mr Christopher Bellingham 24th Floor Metropolitan Centre 7 Walter Sisulu Avenue Foreshore Cape Town 8001	Kap Vley Wind Farm (Pty) Ltd Mr Steyn de Vos 20th Floor The Halyard 4 Christiaan Barnard Street Foreshore Cape Town 8001
	Telephone Number: (021) 831 6130 Cell phone number: (083) 443 5154 Fax Number: (021) 831 6199 Email Address: bellingham@juwi.co.za	Telephone Number: (021) 831 6147 Cell phone number: (082) 388 4738 Fax Number: (021) 831 6199 Email Address: steyn.devos@juwi.co.za

Summary of impacts

The specialists presented in Table 2 have been consulted and provided with all the information pertaining to the proposed changes to the turbines specifications as indicated in Table 11 above for the proposed Kap Vley WEF. The feedback and conclusion from the specialists were that the proposed changes do not alter the originally identified impacts, assessment of these impacts, impact significance or recommended management and mitigations measures. Although the potential significance on bats remains low after mitigation, there is a higher likelihood that additional mitigation during peak activity periods would be required because of the larger blades. The likelihood that the cumulative impacts increase would also be higher.

The bat specialist notes that beyond turbine design, more active mitigation to reduce these residual impacts will be needed and ultrasound deterrents and curtailment are two options available. Additional mitigation measures are provided by the specialist (see section D) and Appendix D.2 of this report.

A summary of the relevant impacts identified, and the significance ratings thereof as contained in the original approved Final EIA Report (CSIR, 2018) are provided in Table 12. The full impact assessment tables are available in Section D. These impacts have been deemed to be mitigatable and acceptable, since this project has received Environmental Authorisation from the DEA (now operating as DEFF) in 2018. All the specialists confirmed that the significance ratings of the impacts from the previous initial EIA undertaken by CSIR (2018) are still applicable for this Amendment Application (see section D). The specialists are therefore of the opinion that the proposed amendments can be authorised.

Draft Amendment Report for the Application of Substantive Amendments to the Environmental Authorisation issued for the development of the 300 MW Kap Vley WEF, near Kleinzee, Northern Cape Province

Table 12. Summary of significance of pre-mitigation and residual impacts during construction and operational phases for the current amendment application for the Kap Vley WEF

PHASE	PRE-MITIGATION SIGNIFICANCE	RESIDUAL IMPACT SIGNIFICANCE									
Avifaunal (Birds)											
Operational phase- collision with wind turbines	High	Moderate									
Cumulative impacts-collision with wind turbines	High	Moderate									
	Bats										
Operational phase- mortality due to operating wind turbines	High	Low									
Cumulative impacts-mortality due to operating wind turbines	Low	Moderate									
	Visual										
Operational phase- visual impact on ridgeline	Moderate-High	Moderate-High									
Cumulative impacts-impact on ridgeline	Low	Low									
	Noise										
Operational phase- noise from operating turbines	Low	Low									
	Heritage										
Operational phase- impact on cultural landscape	Moderate	Moderate									
Cumulative impacts-impact on cultural landscape	Moderate	Moderate									

Environmental sensitivity map overlain with the proposed layout

The proposed layout as contained in the Final EIA Report (CSIR, 2018), avoids all environmentally sensitive areas that were recommended by the specialists and adheres to the provisions included within the Environmental Authorisation issued. The layout has not been amended for this amendment application and therefore remains within the approved buildable area which avoid environmental sensitive areas (Figure 4).

<u>Mitigation measures identified (including additional mitigation measures to be included in the revised EMPr)</u>

Avifauna

- Turbine (WEA 14) is currently within a high avifaunal sensitivity area and should be relocated approximately 120 m to the south or 125 m to the south east.
- 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.

These mitigation measures have been included in the EMPr that was submitted with the Final EIA Report (CSIR, 2018).

Bats

- Adhere to no-go area buffers for turbine placement. Using a turbine with a hub height of 150 m and a blade length of 100 m, the turbine base must be 260 m and 1,090 m away from bat roosts respectively, 260 m away from woodland/trees and 260 m from NFEPA Rivers. The turbine base should also be a minimum of 50 m away from drainage lines. One turbine is situated approximately 12 m from a drainage line buffer, while this turbine does not need to be relocated, appropriate micro-siting in consultation with the bat specialist is recommended.
- Further operational mitigation measures to be researched, by the appointed bat specialist and the appropriate selected mitigation implemented (e.g. ultrasound deterrents and curtailment, as discussed in section D, if post construction monitoring reveals high levels of impacts to bats).
- Operational monitoring must be undertaken in line with applicable guidelines.

The additional mitigation measures included above in bold and underlined must be added to the EMPr. This will inform the final layout of the Kap Vley WEF. The EMPr will be amended to include measures as dictated by the final site layout map and micro-siting, and the provisions of the Environmental Authorisation. The amended final EMPr will be submitted to DEFF for approval as per Condition 15 of the Environmental Authorisation dated 25 October 2018. It should be noted that micro-siting of the project layout can only be undertaken once the project has received preferred bidder status and before construction commences.

Recommendation of the EAP

Based on the findings of the specialist studies, the proposed amendment will have an acceptable risk to the environment. All the specialists confirmed that the proposed amendment will not affect their impact assessment ratings as contained in the specialist studies for the EIA undertaken (CSIR, 2018). The bat specialist confirmed that the impact assessment rating for bat mortality would remain low after mitigation. It is recommended that the applicant appoints a bat specialist to undertake operational phase bat monitoring as per the applicable bat guidelines. The bat specialist will advise if additional mitigation measures are required based on bat fatality data.

The proposed Kap Vley WEF will not have significant impacts on Red Data bird and bat species. The site is not located in an Important Bird Area. It must be noted that no bird nests were found closer than 6.8 km from the nearest proposed turbines. Using a turbine with a hub height of 150 m and a blade length of 100 m, the turbine base must be 260 m and 1,090 m away from bat roosts respectively. These buffers do not impact the current turbine layout and no adjustments to the proposed layout in response to increased blade length are required to accommodate the buffer. The buffers have been increased in response to the change in the rotor diameter and no turbines are located within bat sensitive areas.

Draft Amendment Report for the Application of Substantive Amendments to the Environmental Authorisation issued for the development of the 300 MW Kap Vley WEF, near Kleinzee, Northern Cape Province

In terms of needs and desirability, on a provincial level, the Northern Cape Province is currently facing considerable constraints in the availability and stability of electricity supply. This is a consequence of South Africa's electricity generation and supply system being overstretched, and the reliance of the Northern Cape, as many other South African provinces, on the import of power to service its energy needs. The development of wind energy is important for South Africa to reduce its overall environmental footprint from power generation (including externality costs), and thereby to steer the country on a pathway towards sustainability. On a municipal planning level, the proposed project does not go against any of the objectives set within the Integrated Development Plan (IDP) (2012/2017). The IDP's Local Economic Development (LED) Strategy states that "Renewable energy has become a global priority and there is potential for both wind and solar power within the Nama Khoi Local Municipality."

Taking into consideration the findings of the Amendment process and given the national and provincial strategic requirements for renewable energy development and the location of the proposed Kap Vley WEF within a gazetted REDZ (REDZ 8: Springbok), it is the opinion of the EAP that the project benefits outweigh the costs and that the project will make a positive contribution to steering South Africa on a pathway towards sustainable renewable energy development.

The proposed amendments do not influence the findings of the authorised Final EIA report (CSIR, 2018). Based on the information available to the EAP and the specialist input received and outlined within Section D and included in Appendix D of this report, it is clear that no additional impacts are anticipated due to the increase in rotor diameter range (from 100 m to 160 m to 100 m-200 m). In addition to this, the layout of the proposed Kap Vley WEF has not been amended and the increased RSA avoids the environmental sensitive features and buffers as identified by the specialists. It is therefore the opinion of the EAP that the proposed amendment of the turbine specifications can be approved, provided that the specified mitigation measures contained in the Final EIA Report, CSIR, 2018 and in this report are applied effectively.

NAME OF EAP: Minnelise Levendal	
1111	
Mlevendal	October 2019

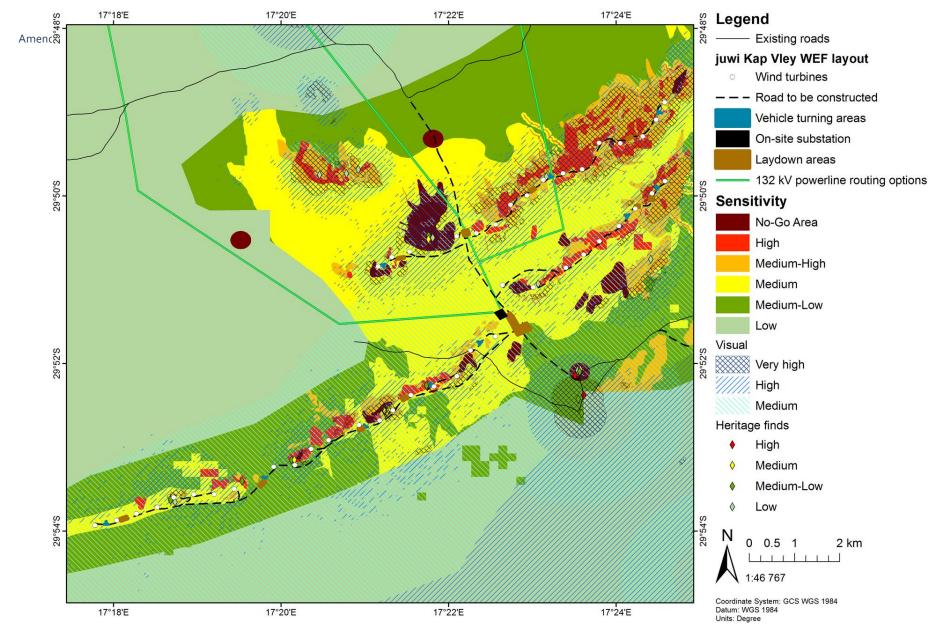


Figure 4. Environmental sensitivity map overlain with the turbine locations for the proposed Kap Vley WEF

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Amendment Report for an application for a substantive amendment to the Environmental Authorisation issued for the development of the Kap Vley Energy Facility, near Kleinzee in the Northern Cape Province





DRAFT AMENDMENT REPORT

APPENDICES