RIETKLOOF WIND FARM (RF) (PTY) LTD

RIETKLOOF WIND ENERGY FACILITY

PART 2 AMENDMENT OF EXISTING ENVIRONMENTAL AUTHORISATION: DEA 14/12/16/3/3/1/1977/AM1

DRAFT AMENDMENT REPORT

09 DECEMBER 2021 PUBLIC

RIETKLOOF WIND ENERGY FACILITY

PART 2 AMENDMENT OF EXISTING ENVIRONMENTAL AUTHORISATION: DEA 14/12/16/3/3/1/1977/AM1

RIETKLOOF WIND FARM (RF) (PTY) LTD

DRAFT AMENDMENT REPORT

TYPE OF DOCUMENT (VERSION)
PUBLIC

PROJECT NO.: 41103473
DATE: DECEMBER 2021

WSP
BUILDING C, KNIGHTSBRIDGE
33 SLOANE STREET
BRYANSTON, 2191
SOUTH AFRICA

T: +27 11 361 1380
F: +086 606 7121
WSP.COM

QUALITY MANAGEMENT[1]

ISSUE/REVISION	FIRST ISSUE	REVISION 1	REVISION 2	REVISION 3
Remarks	Draft Amendment Report – Public Review			
Date	December 2021			
Prepared by	Babalwa Mqokeli			
Signature	 Mqokeli, Babalwa (ZABM04722) 2021.12.06 19:48:12 +02'00'			
Checked by	Ashlea Strong			
Signature	 Digitally signed by Strong, Ashlea (ZAAS02685) DN: cn=Strong, Ashlea (ZAAS02685), ou=Active, email=Ashlea.Strong@wsp.com Date: 2021.12.07 06:04:40 +02'00'			
Authorised by	Ashlea Strong			
Signature	 Digitally signed by Strong, Ashlea (ZAAS02685) DN: cn=Strong, Ashlea (ZAAS02685), ou=Active, email=Ashlea.Strong@wsp.com Date: 2021.12.07 06:05:36 +02'00'			
Project number	41103473			
Report number	01			
File reference	\\corp.pbwan.net\za\Central_Data\Projects\41100xxx\41103473 - G7 energy - Euronotus Cluster\41 ES\01-Reports\07-Part 2\			

[1] Please note that this is an internal quality control mechanism where reports are internally reviewed by at least one other senior staff member and then authorised for release to external sources.

SIGNATURES

PREPARED BY

Mqokeli, Babalwa (ZABM04722) 2021.12.06 19:50:03 +02'00'

Babalwa Mqokeli
Senior Environmental Consultant

REVIEWED BY

Digitally signed by Strong, Ashlea (ZAAS02685)
DN: cn=Strong, Ashlea (ZAAS02685), ou=Active, email=Ashlea.Strong@wsp.com
Date: 2021.12.07 06:05:50 +02'00'

Ashlea Strong
Principal Consultant – Environmental Assessment Practitioner

This Draft Amendment Report (Report) has been prepared by WSP Group Africa Proprietary Limited (WSP) on behalf and at the request of Rietkloof Wind Farm (RF) (Pty) Ltd (Client), to provide the Client and all interested and affected parties with an understanding of the impacts associated with the proposed amendments to their Environmental Authorisation (Ref: 14/12/16/3/3/1/1977/AM1).

Unless otherwise agreed by us in writing, we do not accept responsibility or legal liability to any person other than the Client for the contents of, or any omissions from, this Report.

To prepare this Report, we have reviewed only the documents and information provided to us by the Client or any third parties directed to provide information and documents to us by the Client. We have not reviewed any other documents in relation to this Report, except where otherwise indicated in the Report

PRODUCTION TEAM

CLIENT – RIETKLOOF WIND FARM (RF) (PTY) LTD

Head of Environmental, Social & Governance	Magdalena Logan
Environmental & Social Developer	Janine Brasington

WSP

Principal Consultant (EAP)	Ashlea Strong
Senior Environmental Consultant	Babalwa Mqokeli

SUBCONSULTANTS

Agricultural and Soil Specialist	Johan Lanz
Terrestrial Ecology & Biodiversity	Trusted Partners, Janie Pote and Malcome Logie
Aquatic Specialist	Freshwater Ecologist Network (FEN) Consulting (Pty) Ltd, Christel du Preez
Avifaunal Specialist	Birds and Bats Unlimited, Dr Rob Simmons
Bat Specialist	Animalia Consultants, Werner Marais
Heritage Specialist	CTS Heritage, Nicholas Wiltshire
Noise Specialist	SafeTech, Dr Brett Williams
Palaeontology Specialist	Natura Viva, Dr John Almond
Social Specialist	Mr Tony Barbour and Schalk van der Merwe
Traffic Specialist	JG Afrika, Avheani Ramawa
Visual Specialist	SiVEST SA, Kerry Schwartz

ACRONYMS AND ABBREVIATIONS

CBA	Critical Biodiversity Area
DEA	Department of Environmental Affairs
DEA&DP	Department of Environmental Affairs and Development Planning
DFFE	Department of Forestry, Fisheries and the Environment
DM	District Municipality
EA	Environmental Authorisation
EAP	Environmental Assessment Practitioner
ECO	Environmental Control Officer
EIA	Environmental Impact Assessment
EIAR	Environmental Impact Assessment Report
EMPr	Environmental Management Programme
FEIAr	Final Environmental Impact Assessment Report
GNR	Government Notice Regulations
Ha	Hectare
I&APs	Interested and Affected Parties
LM	Local Municipality
MW	Megawatt
NDP	National Development Plan
NEMA	National Environmental Management Act
NPAES	National Protected Areas Expansion Strategy
REDZ	Renewable Energy Development Zone
REIPPPP	Renewable Energy Independent Power Producer Procurement Programme
S&EIA	Scoping and Environmental Impact Assessment
SANBI	South African National Biodiversity Institute
SCC	Species of Conservation Concern
SDF	Spatial Development Frameworks
SDG's	Sustainable Development Goals
SEA	Strategic Environmental Assessment
SIBIS	SANBI's Integrated Biodiversity Information System
WC-BSP	Western Cape Biodiversity Spatial Plan
WEF	Wind Energy Facility
WSP	WSP Group Africa (Pty) Ltd

CONTENT OF THIS REPORT

As per the Environmental Impact Assessment (EIA) Regulations 2014, as amended, Regulation 32 of Government Notice Regulation (GNR) 982 (as amended) identifies the legislated requirements, which must be contained within an Amendment Assessment Report for the competent authority to consider and come to a decision on the amendment application. **Table A** below details where the required information is located within this draft Amendment Assessment Report (this report).

Table A: Legal Requirements as detailed in Regulation 32 of GNR 982, as amended

Regulation 32 of GNR 982, as amended	**DESCRIPTION**	**RELEVANT REPORT SECTION**
1	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:	The final Amendment Report will be submitted to DFFE as per requirement
(a)	A report reflecting:	
	(i) An assessment of all impacts related to the proposed change;	**Section 5**
	(ii) Advantages and disadvantages associated with the proposed change; and	**Section 4.1**
	(iii) Measures to ensure avoidance, management and mitigation of impacts associated with such proposed change; and	**Section 6** **Appendix P**
	(iv) Any changes to the EMPr:	**Section 6** **Appendix P**
	Which report:	
	(i) 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	**Section 7.** Proof of PPP to be included in the Final Report.
	(ii) Reflects the incorporation of comments received, including any comments of the competent authority	To be included in the Final Report.
(b)	A notification in writing that the report will be submitted within 140 days of receipt of application by the competent authority, as significant changes have been made or significant new information has been added to the report, which changes or information was contained in the report consulted on during the initial public participation process contemplated in subregulation 1(a) and that the revised report will be subjected to another public participation process of at least 30 days.	Not Applicable
2	In the event where subregulation (1)(b) applies, the report, which reflects the incorporation of comments received, including any comments of the competent authority, must be submitted to the competent authority within 140 days of receipt of the application by the competent authority	Not Applicable

TABLE OF CONTENTS

TABLES

FIGURES

APPENDICES

1 INTRODUCTION

1.1 PURPOSE OF THE REPORT

Rietkloof Wind Farm (RF) (Pty) Ltd (Rietkloof) proposes to develop the 183 megawatt (MW) Rietkloof Wind Energy Facility (WEF), located near Laingsburg, in the Western Cape Province, South Africa. The proposed project formed part of the Fifth Bid Window submissions under the Renewable Energy Independent Power Producer Procurement Programme (REIPPPP). **The Rietkloof WEF has been confirmed a Round 5 Preferred Bidder Project and is a confirmed Strategic Infrastructure Project in terms of the Infrastructure Development Act 9 (Act No.23 of 2014).**

In 2016, Rietkloof Wind Farm (Pty) Ltd (Rietkloof) appointed EOH Coastal and Environmental Services (Pty) Ltd (EOH) to facilitate the Scoping and Environmental Impact Assessment (S&EIA) process for the construction and operation of the 147MW Rietkloof Wind Energy Facility (WEF). In November 2016, the Department of Environmental Affairs (DEA) (now known as the Department of Forestry, Fisheries and the Environment – DFFE) issued the Environmental Authorisation (EA), however, the authorisation only authorised 9 of the proposed 60 turbines with a capacity of 36MW (DEA Ref: 14/12/16/3/3/2/899).

The remaining Rietkloof WEF (51 turbines) were approved by the issuance of an EA dated 10 April 2019 (Ref: 14/12/16/3/3/1/1977). The Appeals Directorate received an appeal on behalf of six appellants, against the decision of the Department to grant the 2019 EA to the applicant. An appeal decision was issued on 16 July 2019, which dismissed the appeal by the appellants, and the granting of the 2019 EA was confirmed.

However, as part of the appeal response, the Department was directed to merge the 2016 and 2019 EAs, in order to remove specific conditions that did not allow for the positioning of the now authorised 51 turbines (section 2.4.5 of the decision). Subsequent to the appeal decision issued in July 2019, the two EAs (issued on 23 November 2016 and 10 April 2019) were successfully merged on 16 September 2019 and assigned a combined Reference 14/12/16/3/3/1/1977/AM1.

There have been numerous advances in wind turbine technology since the authorisation of the Rietkloof WEF. As such Rietkloof wishes to amend the EA to update the turbine specification and overall capacity of the facility as well as some respective administrative changes. This Draft Amendment Report (DAR) documents the process and findings of the Rietkloof's application for amendment of the EA.

Due to the fact that the amendments result in a change of scope, a Part 2 Amendment Process in terms of Regulation 31 of the Environmental Impact Assessment (EIA) Regulations of 2014 (as amended) is applicable and required to be followed.

2 PROJECT DESCRIPTION

2.1 EIA PROCESS HISTORY

Rietkloof initiated project planning in 2009 commencing with monitoring of wind in the area and securing land rights. The Final Environmental Impact Assessment Report (FEIAr) was submitted to the DEA in September 2016.

On 23 November 2016 the DEA granted the EA authorising only 9 of the proposed 60 turbines with an output capacity of 36MW (DEA Ref: 14/12/16/3/3/2/899). The DEA furthermore authorised a construction camp in proximity to turbines 31 and 32 instead of the construction camp alternatives which were assessed during the EIA process and presented as the preferred alternatives. All other associated infrastructure was authorised in the EA. The Project Description from the original EA is extracted below and details what was authorised in the original EA:

- *Up to 9 turbines (between 1.5MW and 4MW in capacity each), each with a foundation of 25m in diameter and 4m in depth;*
- *A hub height of each turbine will be up to 120m, and the rotor diameter up to 140m;*
- *Permanent compacted hard-standing laydown areas for each wind turbine (70m x 50m) 21ha in total, required during construction and for on-going maintenance purposes;*
- *Electrical turbine transformers (690V/33kV) adjacent to each turbine (up to 10m x 10m);*
- *200m wide corridor along the access road and internal access roads to allow for micro sitting of the roads up to 9m wide;*
- *Internal access roads up to 9m wide, including structures for stormwater control to access each turbine location and turning circles. Where possible, existing roads will be upgraded;*
- *33kV overhead powerlines linking groups of wind turbines to onsite 33/132kV substation(s);*
- *Underground 33kV cabling between turbines buried along access roads;*
- *A 33/132kV onsite substation with a total footprint of approximately 200m x 200m;*
- *Up to 4 x 120m tall wind measuring lattice masts strategically placed within the wind farm development*
- *footprint to collect data on wind conditions during the Operational phase;*
- *Temporary infrastructure including a construction camp (~10ha) and an on-site concrete batching plant*
- *(~1 ha) for use during the construction phase; and,*
- *Fencing, up to 4m in height, will be limited around the key infrastructure including construction camp and substation.*

An appeal of the EA decision was submitted by the applicant, and a final decision was issued by the DFFE on 11 November 2017 and the appeal was dismissed and the issued EA upheld.

Subsequently, SANBI amended and reduced the critical biodiversity areas (SANBI, 2017) and the South African government furthermore gazetted[2] eight areas earmarked for renewable energy development in South Africa. These areas are known as Renewable Energy Development Zones (REDZ) and the proposed Rietkloof WEF falls within the Komsberg REDZ. Rietkloof furthermore relooked at alternative ways to reduce the ecological impact to an acceptable level through the agricultural conservation area of a minimum of 4000 ha., The remaining Rietkloof WEF (51 turbines) were approved by the issuance of an EA dated 10 April 2019 (Ref: 14/12/16/3/3/1/1977). The EA authorised up to 51 turbines of a maximum generating capacity of 174MW in total, with a hub height of 125m and the rotor diameter of 160m. A subsequent administrative amendment to the EA was issued on 09 May 2019.

[2] Government Notice 114 of 16 February 2018.

The Appeals Directorate received an appeal on behalf of six appellants, against the decision of the Department to grant the 2019 EA to the applicant. An appeal decision was issued on 16 July 2019, which dismissed the appeal by the appellants, and the granting of the 2019 EA was confirmed.

However, as part of the appeal response, the Department was directed to merge the 2016 and 2019 EAs, in order to remove specific conditions that did not allow for the positioning of the now authorised 51 turbines (section 2.4.5 of the decision). Subsequent to the appeal decision issued in July 2019, the two EAs (issued on 23 November 2016 and 10 April 2019) were successfully merged on 16 September 2019 and assigned a combined Reference 14/12/16/3/3/1/1977/AM1. This EA authorises up to 60 (sixty) wind turbines of a maximum generating capacity of 183MW in total, with a hub height of up to120m (original 09 turbines) and 125m (additional 51 turbines); and the rotor diameter of up to 140m (original 09 turbines) and 160m (additional 51 turbines).

The merged EA issued in September 2019 authorises the development of the 183MW Rietkloof WEF and associated infrastructure near Matjiesfontein in the Westem Cape Province. The authorised infrastructure is outlined in **Table 2-1**.

Figure 2-1 provides a high-level representation of the EA history for the Rietkloof WEF. Copies of the relevant EA documentation is appended as **Appendix A**.

Table 2-1: Authorised infrastructure in terms of the September 2019 EA

COMPONENT	DESCRIPTION / DIMENSIONS
Total area of the site	27 608.09 ha
Size of Buildable Area i.e. project infrastructure footprint (only referred layout, inclusive of all associated infrastructure)	~126.6ha
Area Occupied by Each Turbine and hard standing area	Each turbine with a foundation of up to 25m in diameter and up to 4m in depth, compacted hard standing areas of 0.35ha each.
Generation Capacity (at 132kV point of utility connection)	Up to 183MW generation capacity.
Technology	Wind
Number of Turbines	Up to 60
Turbine Hub Height	Turbine positions (18, 19, 20, 3[1], 32, 33, 37, 38, 39): hub height of up to 120m[3] Turbine positions (all other numbers - the 51 turbines): A hub height of 125m
Rotor Diameter	Turbine positions (18, 19, 20, 3[1], 32, 33, 37, 38, 39): up to 140m[1] Positions of other 51 turbines a rotor diameter of up to 160m
Turbine Foundation Area	Each turbine foundation will be 25m diameter x 4m deep for each of the 60 turbines, approximately ~3.75ha.

[3] An administrative error was made in the text of this line item, where the turbine location no. 31 was erroneously indicated as location no. 3. An email was issued to DFFE on 25 September 2019 requesting that this be corrected.

COMPONENT	DESCRIPTION / DIMENSIONS
Area of Electrical Turbine Transformers of preferred operations	100m^2 (10m x10m) per turbine.
Location of Maintenance Building Assessment Site	O&M buildings will be in proximity of the Substation.
Size of Operations and Maintenance Building(s)	O&M building includes operations, on site spares storage and workshop.
Area of Preferred Construction footprint and batching plant footprint	Construction camp will be approximately 10ha and onsite concrete batching plant of up to 1ha. Construction camp alternative 10.
width of Internal Roads	No more than 9m wide (turns will have a radius of up to 55m), 200m wide corridor along the access road and internal access roads.
Area of Internal Roads	~90ha
Type and Height of Fencing	Approximately 4m high palisade or mesh fencing where required.
Sewage	Conservancy Tanks (with portable toilets during the construction phase).
Met Masts	Up to 4 x 125m tall wind measuring lattice masts strategically placed within the wind farm development footprint to collect data on wind conditions during the operational phase.
Power Evacuation	
Area of internal Onsite Substation	200m x 200m – 4ha
Onsite Substation Capacity	33kV and 132kV yards – substation alternative 5.
Specifications of onsite switching stations, transformers, invertors, onsite cables etc.	The medium voltage collector system will comprise of cables (1kV up to and including 33kV) that will be run underground, except where a technical assessment suggests that overhead lines are applicable, in the facility connecting the turbines to the onsite substation.
Closest Grid Connection Point	Bon Espirange Switching Substation
Power lines	33kV overhead powerlines linking groups of wind turbines to onsite 33&132kV substation(s).

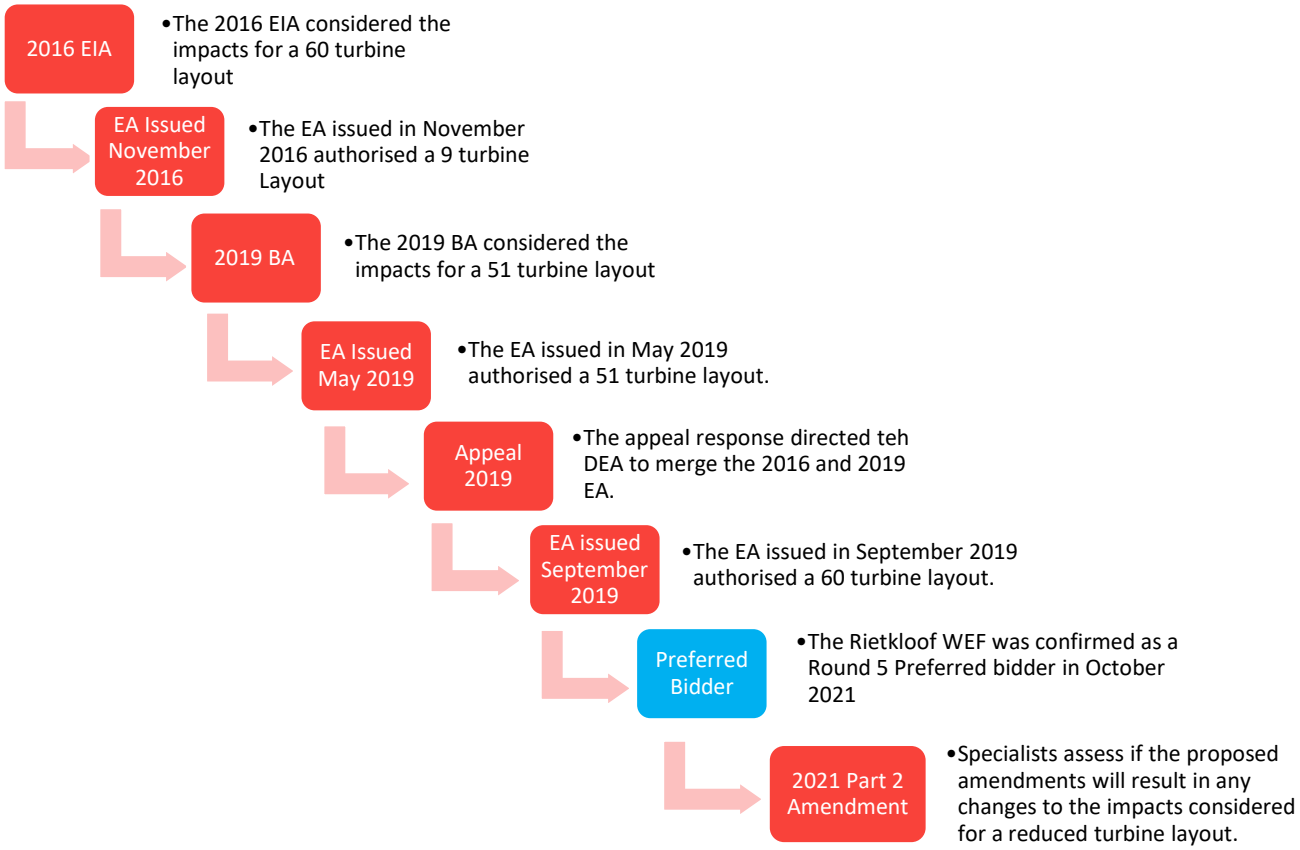

Figure 2-1: High-level Representation of the EA History for the Rietkloof WEF

2.2 PROJECT AREA

The Rietkloof WEF falls within the Laingsburg Local Municipality which is located in the Central Karoo District Municipality. The closest town within the Western Cape Province is Matjiesfontein, situated approximately 15km south of the project area (**Figure 2-2**). Laingsburg is a further 30km east of Matjiesfontein, along the N1 national road in the Western Cape Province.

The R354 is the main arterial road providing access to the project area, where there are a number of existing local, untarred roads providing access within the project area.

The Rietkloof WEF is currently authorised over 12 properties described in **Table 2-2** below. These land portions, collectively referred to as the project area for the Rietkloof WEF, are currently used for animal husbandry, game farming and agriculture, including grazing of sheep. The project area can be accessed via the R354 that connects to the N1 between Matjiesfontein and Laingsburg.

Table 2-2: Farm portions on which the Rietkloof WEF is located

FARM NAME AND NUMBER	21 DIGIT SG CODE	MUNICIPALITY/PROVINCE	FARM SIZE (HA)
Portion 1 of Barendskraal 76	C04300000000007600001	Laingsburg LM / Central Karoo DM / Western Cape	2,828.6
The Remainder of Fortuin 74	C04300000000007400000	Laingsburg LM / Central Karoo DM / Western Cape	2,454.89
Portion 3 Fortuin 74	C04300000000007400003	Laingsburg LM / Central Karoo DM / Western Cape	1,868.4
The Remainder of Nuwerus 284	C04300000000028400000	Laingsburg LM / Central Karoo DM / Western Cape	2,521.1
Portion 1 of Hartjieskraal 77	C04300000000007700001	Laingsburg LM / Central Karoo DM / Western Cape	2,241.6
The Remainder of Hartjieskraal 77	C04300000000007700000	Laingsburg LM / Central Karoo DM / Western Cape	2,241.63
Portion 1 of Rietkloof Annexe 88	C04300000000008800001	Laingsburg LM / Central Karoo DM / Western Cape	1,428.6
The Remainder of Snyders Kloof 80	C04300000000008000000	Laingsburg LM / Central Karoo DM / Western Cape	1,678.8
Portion 1 of Snyders Kloof 80	C04300000000008000001	Laingsburg LM / Central Karoo DM / Western Cape	1,627,3
Vogelstruisfontein 81	C04300000000008100000	Laingsburg LM / Central Karoo DM / Western Cape	4,040.1
Remainder of Wilgehout Fontein 87	C04300000000008700000	Laingsburg LM / Central Karoo DM / Western Cape	4,269.5
Portion 1 of Ou Mure 74	C04300000000007400001	Laingsburg LM / Central Karoo DM / Western Cape	407,57
		Total hectares	**27,608,09**

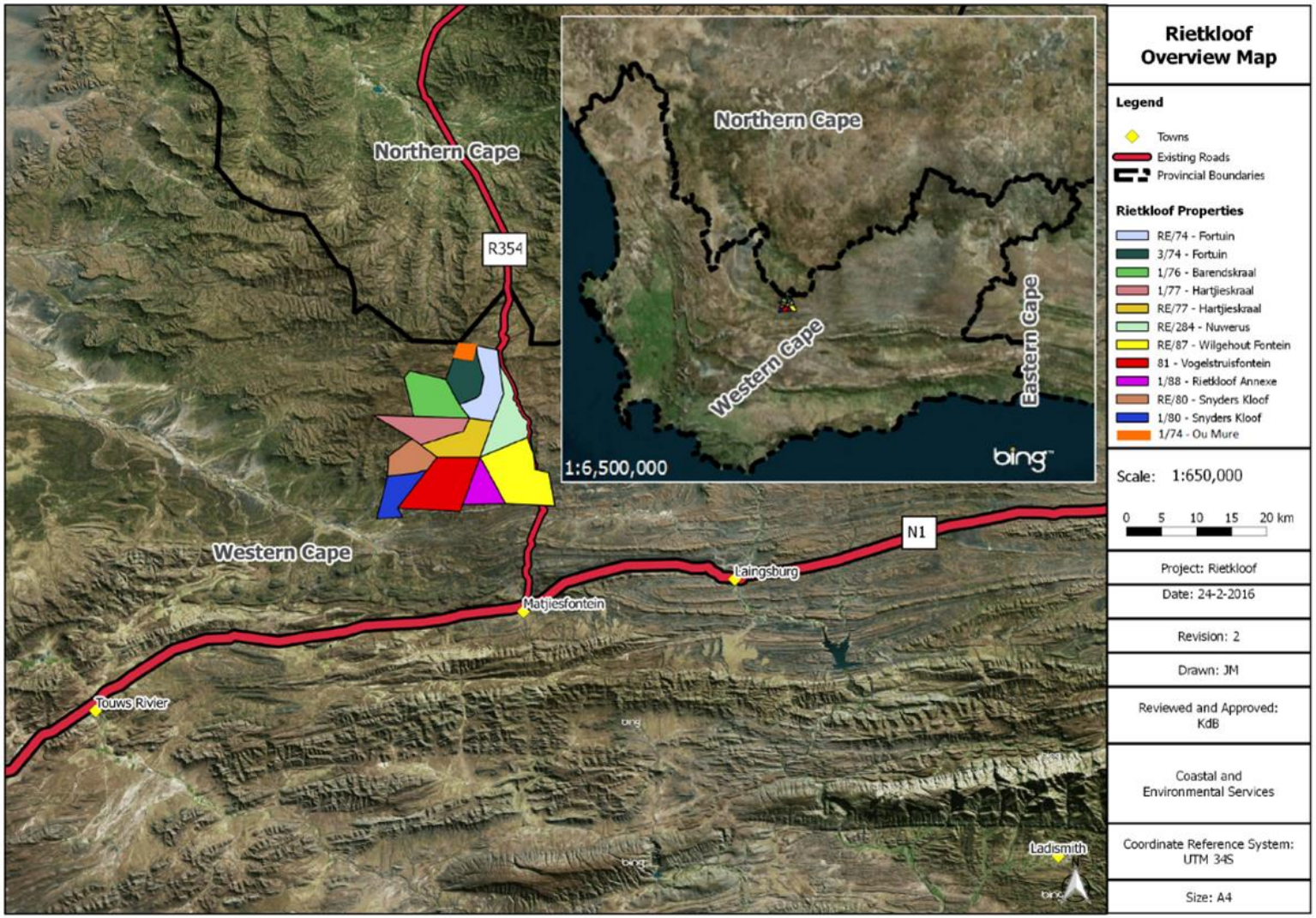

Figure 2-2: Locality of the Rietkloof WEF

2.3 SURROUNDING AREA

The surrounding area of Rietkloof WEF is predominantly used for agricultural purposes. The surrounding rural landscape is interrupted by the existing road network, which amongst others includes the access road and two 400kV and one 765kV Eskom overhead powerlines.

The project area and surrounding areas have been earmarked for renewable energy development. The South African government gazetted[4] eight (8) areas earmarked for renewable energy development in South Africa. These areas are known as Renewable Energy Development Zones (REDZ) and this project falls within the Komsberg REDZ as indicated in **Figure 2-3.** The purpose of the REDZ is to cluster development of renewable energy facilities in order to streamline the grid expansion for South Africa i.e. connect zones to one another as opposed to a wide scatter of projects. It is therefore not surprising that there are a number of environmental authorisations (EA) issued for wind energy facilities (either issued or in process) in the area surrounding the proposed project site. It is important to note that the existence of an approved EA does not directly equate to actual 'development'.

The surrounding projects, except for the Preferred Bidders, are still subject to the Renewable Energy Independent Power Producer Procurement Programme (REIPPPP) bidding process or subject to securing an off taker of electricity through an alternative process. Some of the surrounding proposed WEF's secured EA's several years ago but have not obtained Preferred Bidder status and as such have not been developed. Seeing that the project is located within the Komsberg REDZ, the decision-making timeframe can be reduced from 107 day to 57 days in line with GN 114.

These existing surrounding projects of varying approval status have been detailed in **Table 2-3** and illustrated in **Figure 2-4**. **Table 2-3** includes projects that have received an EA, those that are in the process of applying for an EA as well as those projects that have obtained REIPPPP preferred bidder status. Given the site's location within the Komberg REDZ, it is considered to be located within the renewable energy hub that is developing in this focus area. All specialists considered the cumulative impact of these projects in their statements / assessments prepared to inform this assessment, which is detailed in section 5.5 below.

[4] Government notice 114 of 16 February 2018.

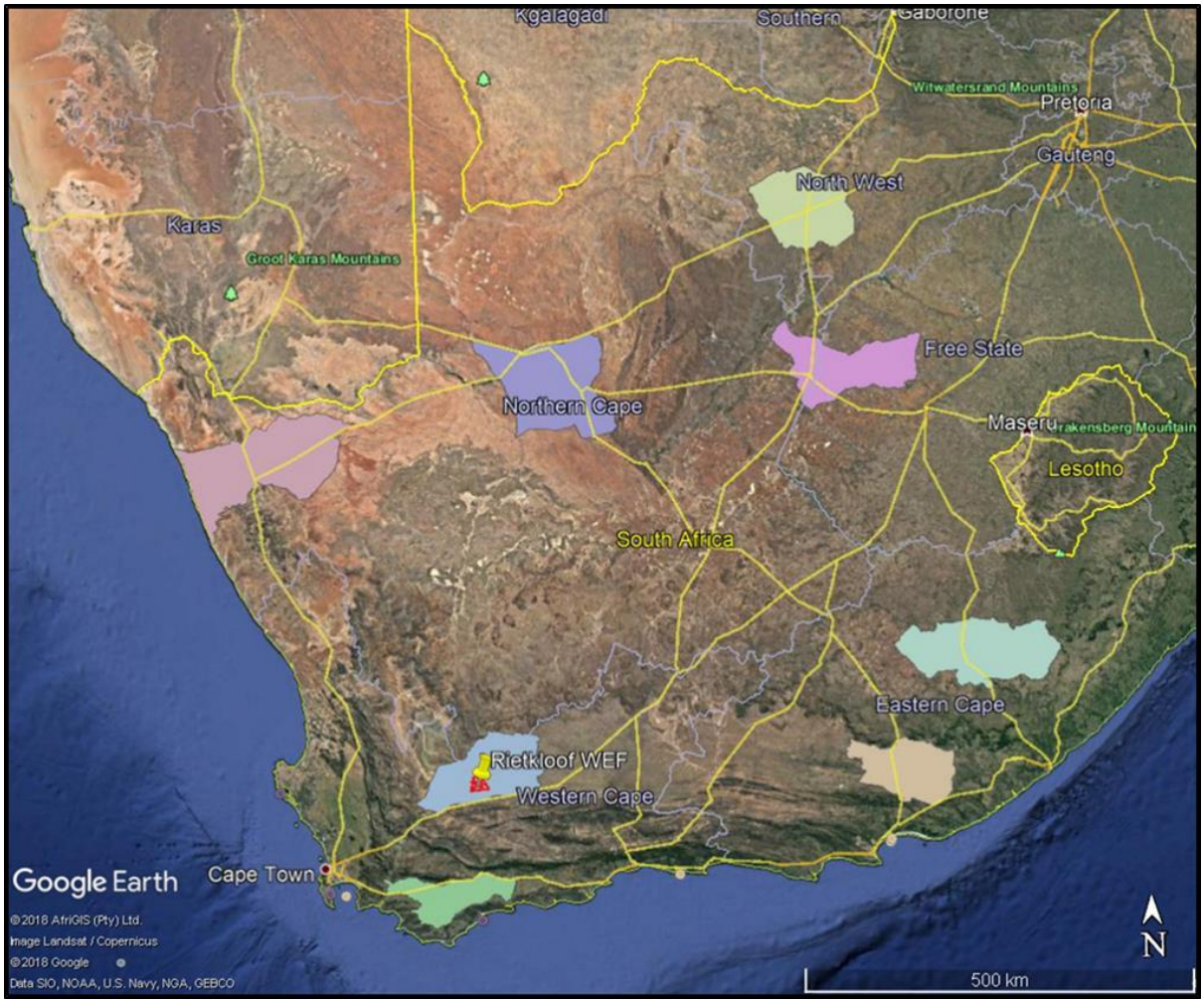

Figure 2-3: Project Location in relation to the Komsberg REDZ

Table 2-3: Surrounding projects approval status within 30 km of Rietkloof

DFFE REFERENCE NUMBER	EIA PROCESS	APPLICANT	PROJECT TITLE	EAP	TECHNOLOGY	MEGAWATT	PROJECT STATUS
14/12/16/3/3/2/826	S&EIR	Gunstfontein Wind Farm (Pty) Ltd	Proposed 280 MW Gunstfontein Wind Energy Project	Savannah Environmental Consultants (Pty) Ltd	Onshore Wind	200 MW	Approved
12/12/20/2370/2 **12/12/20/2370/1** **12/12/20/2370/3**	S&EIR	Hidden Valley Wind-African Clean Energy Developments (Pty) Ltd	Proposed Hidden Valley Wind Energy Facility (Karusa, Soetwater and Great Karoo), Northern Cape	Environmental Resource Management (Pty) Ltd	Onshore Wind	140 MW each	**Karusa Approved** **Preferred bidder** **Soetwater Approved** **Preferred bidder** Great Karoo - Approved but not preferred bidder
12/12/20/1988/1/AM1	S&EIR	Roggeveld Wind Power (Pty) Ltd	140MW Roggeveld Wind Farm Northern Cape and Western Cape Provinces	Environmental Resource Management (Pty) Ltd	Onshore Wind	140 MW	**Approved;** **Preferred bidder**
12/12/20/1966/AM7	S&EIR	Witberg Wind Power (Pty) Ltd	Proposed establishment of the Witberg wind energy facility, Western cape	Environmental Resource Management (Pty) Ltd	Onshore Wind	80MW	Approved
12/12/20/1783/2/AM1	S&EIR	South Africa Mainstream Renewable Power Development	Proposed development of a renewable Energy facility at Perdekraal, Western Cape	Environmental Resource Management (Pty) Ltd	Onshore Wind	140MW	**Approved;** **Preferred Bidder**
14/12/16/3/3/2/856	S&EIR	Komsberg West Wind Farm (Pty) Ltd	Komsberg West Wind Energy Facility	Arcus Consultancy Services	Onshore Wind	275MW	Approved
14/12/16/3/3/2/967	S&EIA	BioTherm Energy (Pty) Ltd	Esizayo Wind Energy Facility, Western Cape Province	WSP Environmental	Onshore Wind	140MW	Approved

DFFE REFERENCE NUMBER	EIA PROCESS	APPLICANT	PROJECT TITLE	EAP	TECHNOLOGY	MEGAWATT	PROJECT STATUS
14/12/16/3/3/2/900 **14/12/16/3/3/2/900/AM1**	S&EIA	Brandvalley Wind Farm (Pty) Ltd	Brandvalley Wind Farm, Northern and Western Cape Provinces	EOH CES	Onshore Wind	140MW	**Approved Preferred bidder**
14/12/16/3/3/1/2/807 **14/12/16/3/3/1/2/807/AM1** **14/12/16/3/3/1/2/807/AM2**	S&EIA	Karreebosch Wind Farm (Pty) Ltd	Karreebosch Wind Farm, Northern and Western Cape Provinces	Savannah Environmental	Onshore Wind	140MW	Approved
14/12/16/3/3/2/962 **14/12/16/3/3/2/963**	S&EIA	BioTherm Energy (Pty) Ltd	Maralla East and West Wind Farms, Northern and Western Cape Provinces	WSP Environmental	Onshore Wind	140MW each	Approved
14/12/16/3/3/2/1984	BA	Genesis Tooverberg Wind Farm (Pty) Ltd	Tooverberg Wind Energy Project	CSIR	Onshore Wind	264	Approved
12/12/20/1787	EIA	Mainstream Renewable Power Konstabel (Pty) Ltd	Konstabel Solar projects	ERM	Solar	50MW	Approved
14/12/16/3/3/1/1976	BA	Kudusberg Wind farm (Pty) Ltd	Kudusberg Wind Energy Facility and associated infrastructure, between Matjiesfontein and Sutherland in the Western and Northern Cape Provinces	CSIR	Wind	325MW	Approved
14/12/16/3/3/2/1115	EIA	Rondekop Wind Farm (Pty) Ltd	Rondekop Wind Energy Facility between Matjiesfontein and Sutherland, Northern Cape Province	SiVEST	Wind	325MW	Approved
12/12/20/1782/3/AM2	BA	Mainstream renewable Power Developments (Pty) Ltd	Sutherland Wind Energy Facility, Northern and Western Cape Provinces	CSIR	Wind	140MW	Approved

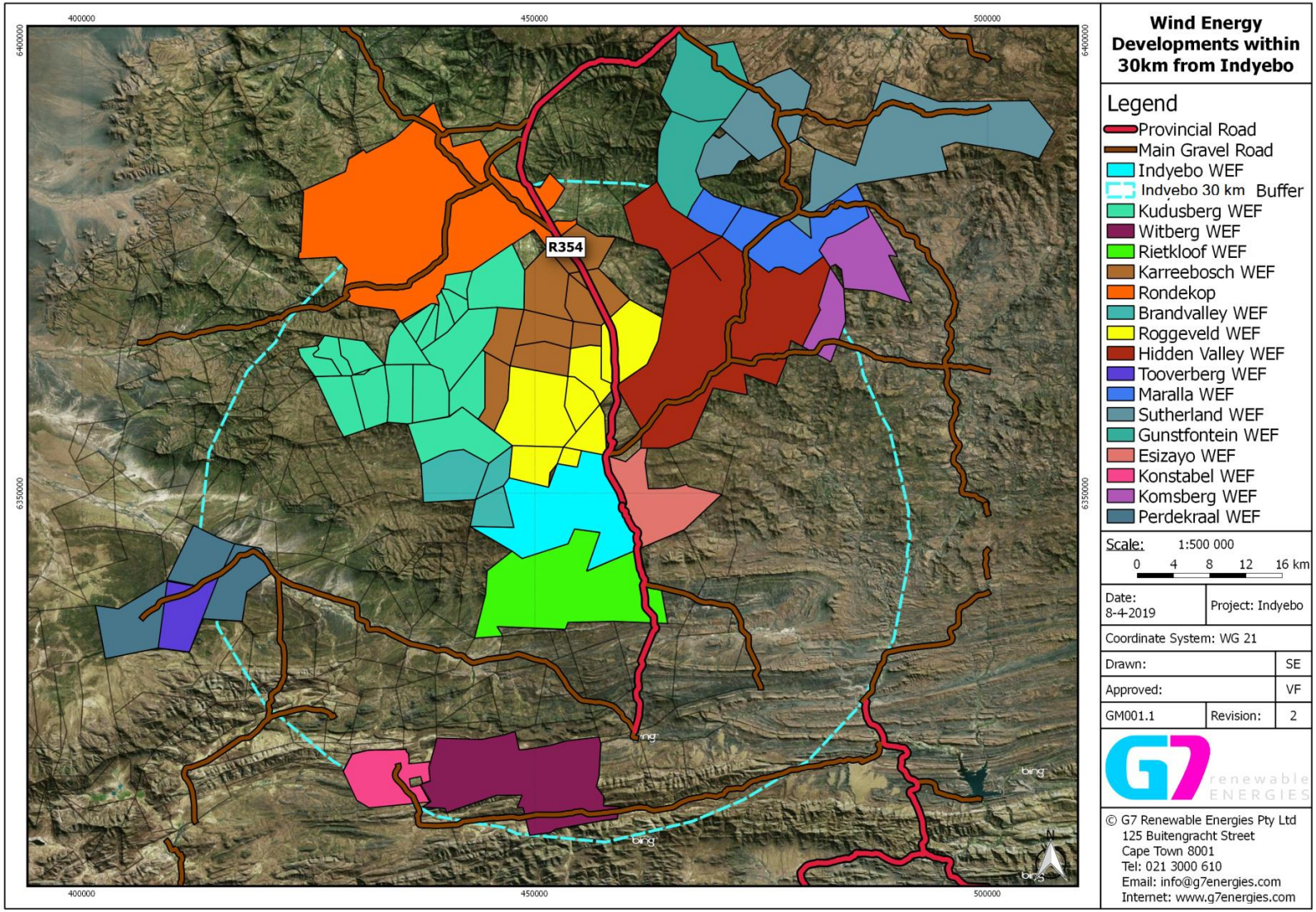

Figure 2-4: Existing surrounding projects in of relation the Rietkloof WEF

3 OVERVIEW OF PART 2 AMENDMENT PROCESS

3.1 TERMS OF REFERENCE

WSP Group Africa (Pty) Ltd (WSP) was appointed to undertake the amendment process in terms of Regulation 31 and 32 of the EIA Regulations (2014), as amended.

The amendment application process followed to date is summarised below:

- Payment of the prescribed application fee for the application for the variation of the EA was made on **3 December 2021**.
- The application for the amendment of the EA was submitted to the DFFE on **9 December 2021**.

Section 32 of the EIA Regulations (2014), as amended requires that the DAR be subject to a public participation process prior to submission to the DFFE. WSP facilitated the following public participation process on behalf of Rietkloof:

- Provision of the Draft Amendment Report for a 30-day comment period as per the requirements of Section 32 (1).
- All interested and affected parties (I&APs) (as per the existing Rietkloof database) were notified by WSP of the availability of the DAR for comment. Copies were made available at the Matjiesfontein Community Centre (Matjiesfontein) and Laingsburg Library (Van Riebeeck street), as well as on the WSP webpage (https://www.wsp.com/en-ZA/services/public-documents) for ease of access.
- Two newspaper adverts in a provincial (The Cape Times – **9 December 2021**) and local newspaper (Die Courier – **10 December 2021**) introducing the project and requesting public input.
- Site notices have been placed along the boundary fence of the project site and at various locations in Laingsburg and Matjiesfontein.

The Final Amendment Report will include copies of all public participation records and this will be submitted to DFFE for decision-making purposes. All I&APs will thereafter be notified of the DFFE's decision.

3.1.1 ENVIRONMENTAL ASSESSMENT PRACTITIONER

WSP was appointed in the role of Independent EAP to undertake the Part 2 Amendment processes. The CV of the EAP is available in **Appendix** Error! Reference source not found.. The EAP declaration of interest and undertaking is included in **Appendix** Error! Reference source not found.. **Table 3-1** details the relevant contact details of the EAP.

Table 3-1: Details of the EAP

EAP	**WSP GROUP AFRICA (PTY) LTD**
Company Registration:	1999/008928/07
Contact Person:	Ashlea Strong
Physical Address:	Building C, Knightsbridge, 33 Sloane Street, Bryanston, Johannesburg
Postal Address:	P.O. Box 98867, Sloane Park 2151, Johannesburg
Telephone:	011 361 1392

EAP	WSP GROUP AFRICA (PTY) LTD
Fax:	011 361 1301
Email:	Ashlea.Strong@wsp.com

STATEMENT OF INDEPENDENCE

Neither WSP nor any of the authors of this Report have any material present or contingent interest in the outcome of this Report, nor do they have any business, financial, personal or other interest that could be reasonably regarded as being capable of affecting their independence. WSP has no beneficial interest in the outcome of the assessment

3.2 LEGAL FRAMEWORK

On the 7th April 2017 the Minister of Environmental Affairs promulgated amendments to the EIA Regulations (2014), as amended (GNR 982) in terms of Chapter 5 of the National Environmental Management Act (No. 107 of 1998), as amended (NEMA). Regulations 31 and 32 of the EIA Regulations (2014), as amended, details the process for a Part 2 (Substantive) amendment of an environmental authorisation where a change of scope occurs, but a listed activity is not triggered.

The proposed amendments detailed in section 4, below do not trigger any new listed activities in terms of the EIA Regulations (2014), as amended. Furthermore, no additional properties will be affected by the amendments that were not originally assessed. However, part of the amendments applied for were not originally assessed as part of the original EIA process and therefore the potential in impacts is assessed as part of this report.

A variety of administrate changes are being applied for as well as some substantive amendments. The details of all amendments are dealt with in section 4 below.

4 PROPOSED AMENDMENTS TO THE EA

Rietkloof now proposes to follow a Part 2 Amendment Process for the amendment of the September 2019 EA (DFFE Ref: 14/12/16/3/3/1/1977/AM1). **Table 4-1** below outlines the amendments proposed to the existing EA. **Figure 4-1** shows the original 60 turbine layout. **Figure 4-2** illustrates the Final 47 turbine layout as well as proposed new construction camp location.

Table 4-1: Proposed amendments to the Rietkloof EA (DFFE Ref: 14/12/16/3/3/1/1977/AM1)

ASPECT TO BE AMENDED	AUTHORISED	PROPOSED AMENDMENT	EA REFERENCE
Technical Aspects			
Number of Turbines	Up to 60	Up to 47 of up to 7MW capacity each	— Page 9 of EA (page 11 in full document) — Row 6 of the table outlining the infrastructure associated with the facility
Area Occupied by Each Turbine and hard standing area	Each turbine with a foundation of up to 25m in diameter and up to 4m in depth, compacted hard standing areas of 0.35ha each	Each turbine with a foundation of up to 25m in diameter and up to 4m in depth, compacted hard standing areas of 0.45ha each	— Page 9 of EA (page 11 in full document) — Row 3 of the table outlining the infrastructure associated with the facility
Turbine Hub Height	Turbine positions (18,19.20,3,32.33,37,38.39): hub height of up to120m Turbine positions (all other numbers- the 51 turbines): A hub height of 125m	All Turbines up to 125m	— Page 9 of EA (page 11 in full document) — Row 7 of the table outlining the infrastructure associated with the facility
Rotor Diameter	Turbine positions (18,19,20,3,32,33,37,38,39): up to 140m Positions of other 51 turbines a rotor diameter of up to 160m	All Turbines up to 180m	— Page 9 of EA (page 11 in full document) — Row 8 of the table outlining the infrastructure associated with the facility
Turbine Foundation Area	Each turbine foundation will be 25m diameter x 4m deep for each of the 60 turbines, approximately ~3.75ha.	Each turbine foundation will be 25m diameter x 4m deep for each of the 47 turbines, up to ~3.75ha in total	— Page 10 of EA (page 12 in full document) — Row 9 of the table outlining the infrastructure associated with the facility

ASPECT TO BE AMENDED	AUTHORISED	PROPOSED AMENDMENT	EA REFERENCE
Construction Camp Location	Construction Camp Alternative 10	In terms of the final layout the construction camp has been moved to existing batching plant previously utilised by Roggeveld WEF.	— Page 10 of EA (page 12 in full document) — Row 13 of the table outlining the infrastructure associated with the facility
Width of Internal Roads	No more than 9m wide (turns will have a radius of up to 55m), 200m wide corridor along the access road and internal access roads	No more than 12m wide (turns will have a radius of up to 55m), 200m wide corridor along the access road and internal access roads	— Page 10 of EA (page 12 in full document) — Row 14 of the table outlining the infrastructure associated with the facility
Condition 14.2	The EMPr amendment must include the following: 14.2. The Final Conservation Management Plan.	Remove condition.	— Condition 14.2 (page 14 of EA – page 16 in full document)
Condition 36	The location of the construction camp, as well as the internal substation must be relocated and placed in proximity to turbine 31 and turbine 32.	Remove condition.	— Condition 36 (page 17 of EA – page 19 in full document)
Condition 135	Rietkloof must engage with Cape Nature and provide them with the opportunity to provide input to the final Conservation Management Plan, which must be submitted to the DEA along with the final EMPr for approval, prior to the commencement of construction	Remove condition.	— Condition 135 (page 26 of EA – page 28 in full document)
Administrative Aspects			
Contact details of the Holder of the EA	Dr Kilian Hagemann 125 Buitengracht Street 5th Floor CAPE TOWN 8001 Tel: 0213000613 Email: rietkloof@g?ene[gies.oom	Matteo Brambilla 14th floor, Pier Place, Heerengracht Street, Cape Town, 8001 Tel: 021 418 3940 Email: m.logan@redrocket.energy	— Page 1 – Contact Details — Page 2 of EA (Page 4 of full document) – Contact Details

ASPECT TO BE AMENDED	AUTHORISED	PROPOSED AMENDMENT	EA REFERENCE
Amend the Holder of the EA	Rietkloof Wind Farm (Pty) Ltd	Rietkloof Wind Farm (RF) (Pty) Ltd	– Page 1 – Contact Details – Page 2 of EA (Page 4 of full document) – Contact Details

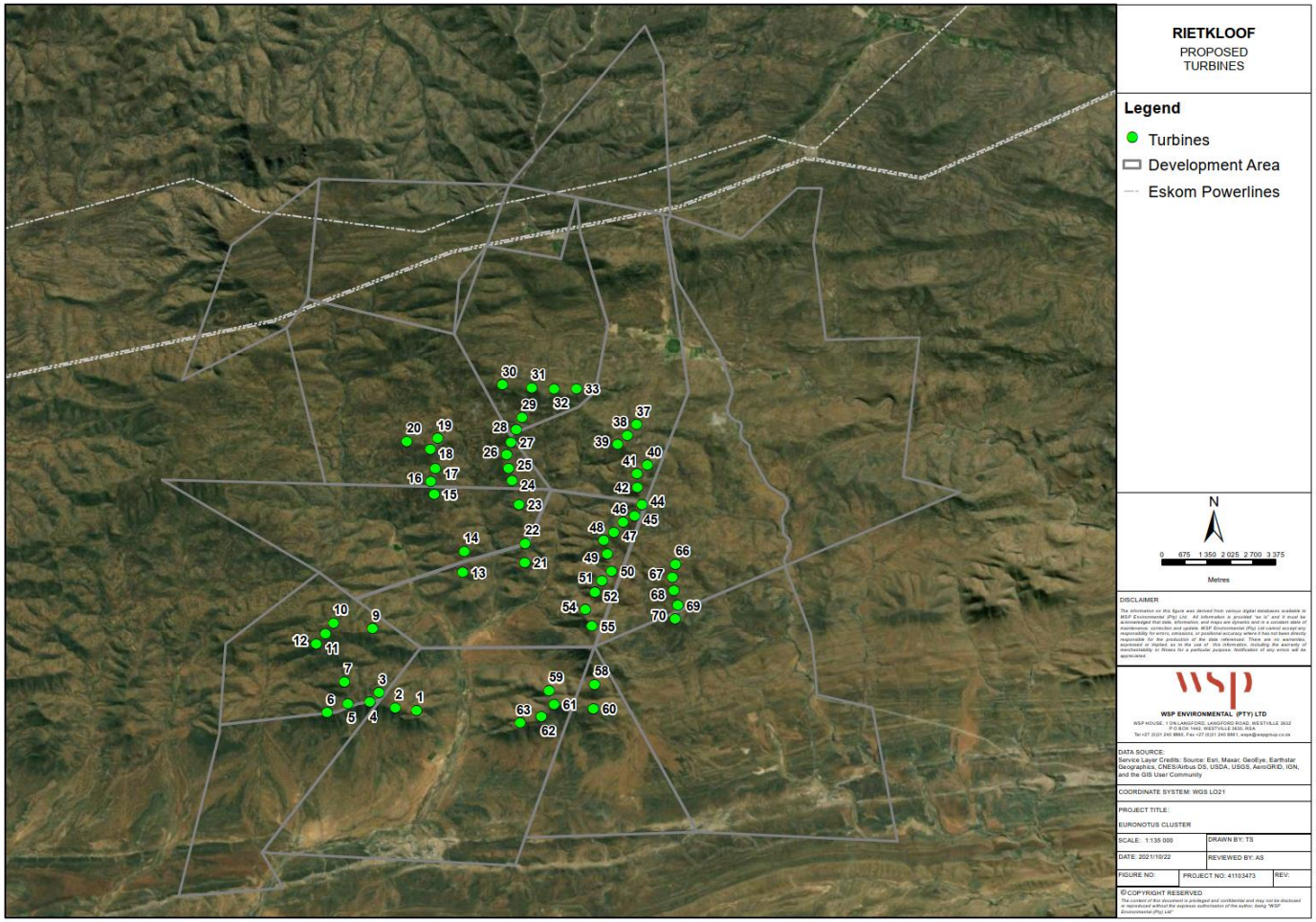

Figure 4-1: Position of the 60 Turbines which formed the Original Layout relevant to the September 2019 EA

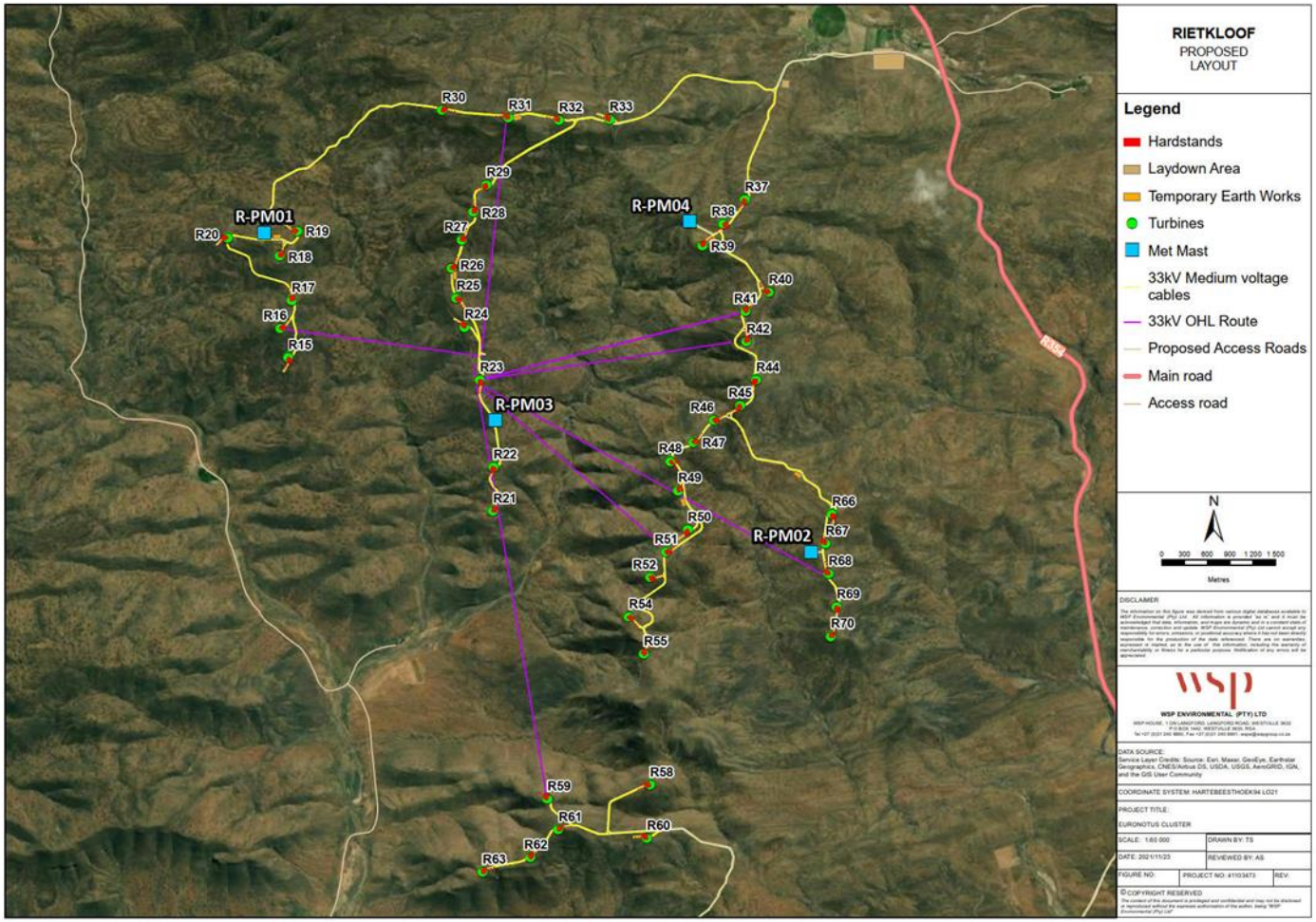

Figure 4-2: Final layout, including the 47 turbine positions for the Rietkloof WEF

4.1 ADVANTAGES AND DISADVANTAGES

The advantages and disadvantages for the proposed amendments are outlined in **Table 4-2.**

Table 4-2: Advantages and Disadvantages of the Proposed Amendments

ASPECT TO BE AMENDED	PROPOSED AMENDMENT	ADVANTAGES/ DISADVANTAGES
Technical Aspects		
Number of Turbines	Up to 47 of up to 7MW capacity each	Wind turbine generators are constantly under development to increase the potential energy output per wind turbine. These amendments are proposed in order to increase the efficiency of the facility and consequently the economic competitiveness thereof, in turn reducing the electricity tariffs to be charged by the facility which would benefit electricity consumers at large. The increase in generation capacity per turbine to a maximum of up to 7MW is as a result of the advances in turbine technology. As confirmed by the specialists and EAP, there are no disadvantages associated with the amendment of the EA in terms of generation capacity per turbine. The benefit of increasing the generation capacity of each turbine results in the need to utilise fewer turbine positions than original authorised.
Area Occupied by Each Turbine and hard standing area	Each turbine with a foundation of up to 25m in diameter and up to 4m in depth, compacted hard standing areas of between 0.35ha and 0.45ha each	The increase in generation capacity per turbine to a maximum of up to 7MW will result in a reduced number of turbine positions being utilised on site. The exact orientation, position and dimensions of the hardstands will be subject to minor change pending the final selection of the TSA. The increased maximum allowable size of the hard standing will allow for these changes should they be required. Furthermore, the increased area will still fall well within the total authorised buildable area of approximately 126.6ha.
Turbine Hub Height	All Turbines up to 125m	Wind shear refers to the variation in wind speed over vertical distances. Installing wind turbine generators with a higher hub height will increase the overall performance of the WEF. This amendment will increase the economic competitiveness of the WEF, in turn reducing the electricity tariffs to be charged by the facility which would benefit electricity consumers at large. As confirmed by the specialists and EAP, there are no disadvantages associated with the amendment of the EA in terms of the turbine hub height.

Rotor Diameter	All Turbines up to 180m	The power output of a wind turbine is directly related to the swept area of the blades. The larger the diameter of swept area / rotor diameter of the blades, the more power it is capable of extracting from the wind. By potentially installing wind turbine generators with a larger rotor diameter, it will increase the energy output per turbine. This will result in increasing the overall performance of the WEF. This amendment will increase the economic competitiveness of the WEF, in turn reducing the electricity tariffs to be charged by the facility which would benefit electricity consumers at large. As confirmed by the specialists and EAP, there are no disadvantages associated with the amendment of the EA in terms of the rotor diameter
Turbine Foundation Area	Each turbine foundation will be 25m diameter x 4m deep for each of the 47 turbines, up to ~3.75ha in total	The increase in generation capacity per turbine to a maximum of up to 7MW will result in a reduced number of turbine positions being utilised on site. As confirmed by the specialists and EAP, there are no disadvantages associated with the amendment of the EA in terms of reducing the number of turbine positions on site.
Construction Camp Location	In terms of the final layout the construction camp has been moved to part of the existing batching plant previously utilised by Roggeveld WEF.	The construction camp has been shifted to the existing batching plant area previously utilised by the Roggeveld WEF. The new location has been included in the final layout and falls within the project boundary that has been authorised and therefore will not be increasing the already assessed development footprint. The location of construction camp, was identified by considering the following aspects: — Landowner preference and support; — Ease of access to R354; — Selecting a flat area requiring little to no blasting; — An area where a potion of the site is currently disturbed, thus limiting the need for additional vegetation clearance; and — The proposed new location will move the construction camp from an agricultural/undisturbed area to a more disturbed area, that has previously been used by the Roggeveld WEF As confirmed by the specialists and EAP, there are no disadvantages associated with the amendment of the EA in terms of moving the construction camp.
Width of Internal Roads	No more than 12m wide (turns will have a radius of up to 55m), 200m wide corridor along the access road and internal access roads	The final layout makes provision for roads with a maximum width of between 9 and 12m to ensure suitable access to site for all required vehicles and equipment. This is well within the 200m wide corridor that has been authorised in the EA. As confirmed by the specialists and EAP, there are no disadvantages associated with the amendment of the EA in terms of increasing the maximum allowable road width.

Condition 14.2	Remove condition.	The need for a Conservation Management Plan, detailing specific management of an as yet undefined Conservation Area, with oversight by a Conservation Forum is deemed impractical. In addition, Rietkloof does not have an agreement with the landowners for the management of or access to the remaining property extent outside of the access roads and turbine platforms, as such they will be unable to implement a Conservation Management Plan. A full professional opinion outlining the recommendation for removal is included in **Appendix C**
Condition 36	Remove condition.	In terms of the final layout the construction camp has been moved to the existing construction camp being utilised by Roggeveld WEF. The area outlined in this condition is not considered an optimal position for the construction camp based on the following: The ecology report shows that the area south and between turbines 31 and 32 is a very-high ecological sensitivity area. The area to the north and between turbines 31 and 32 is very steep and would require excessive amounts of blasting to establish a flat area large enough for the construction camp
Condition 135	Remove condition.	The need for a Conservation Management Plan, detailing specific management of an as yet undefined Conservation Area, with oversight by a Conservation Forum is deemed impractical. In addition, Rietkloof does not have an agreement with the landowners for the management of or access to the remaining property extent outside of the access roads and turbine platforms, as such they will be unable to implement a Conservation Management Plan. A full professional opinion outlining the recommendation for removal is included in **Appendix C**.
Administrative Aspects		
Contact details of the Holder of the EA	Matteo Brambilla 14th floor, Pier Place, Heerengracht Street, Cape Town, 8001 Tel: 021 418 3940 Email: m.logan@redrocket.energy	We request to amend the contact details of the Holder of the EA. This amendment request is administrative in nature and therefore no disadvantages are foreseen.
Amend the name of the Holder of the EA	Rietkloof Wind Farm (RF) (Pty) Ltd	We request to amend the name of the Holder of the EA. This amendment request is administrative in nature and therefore no disadvantages are foreseen.

5 IMPACT ASSESSMENT

5.1 IMPACT ASSESSMENT METHODOLOGY

To ensure a direct comparison between various specialist studies, a standard rating scale has been defined and was used to assess and quantify the identified impacts. This is necessary since impacts have a number of parameters that need to be assessed. Four (4) factors need to be considered when assessing the significance of impacts, namely:

- Relationship of the impact to temporal scales - the temporal scale defines the significance of the impact at various time scales, as an indication of the duration of the impact.
- Relationship of the impact to spatial scales - the spatial scale defines the physical extent of the impact.
- The severity of the impact - the severity/beneficial scale is used in order to scientifically evaluate how severe negative impacts would be, or how beneficial positive impacts would be on a particular affected system (for ecological impacts) or a particular affected party. The severity of impacts can be evaluated with and without mitigation in order to demonstrate how serious the impact is when nothing is done about it. The word 'mitigation' means not just 'compensation', but also the ideas of containment and remedy. For beneficial impacts, optimization means anything that can enhance the benefits. However, mitigation or optimization must be practical, technically feasible and economically viable.
- The likelihood of the impact occurring - the likelihood of impacts taking place as a result of project actions differs between potential impacts. There is no doubt that some impacts would occur (e.g. loss of vegetation), but other impacts are not as likely to occur (e.g. vehicle accident) and may or may not result from the proposed development. Although some impacts may have a severe effect, the likelihood of them occurring may affect their overall significance.

Each criterion is ranked with scores assigned as presented in **Table 5-1** to determine the overall significance of an activity. The criterion is then considered in two categories, viz. effect of the activity and the likelihood of the impact. The total score recorded for the effect is cross referenced against the score for the likelihood and are then read off the matrix presented in **Table 5-2,** to determine the overall significance of the impact (**Table 5-3**).

The overall significance is either negative or positive. The environmental significance scale is an attempt to evaluate the importance of a particular impact. This evaluation needs to be undertaken in the relevant context, as an impact can either be ecological or social, or both. The evaluation of the significance of an impact relies heavily on the values of the person making the judgment. For this reason, impacts of especially a social nature need to reflect the values of the affected society.

Negative impacts that are ranked as being of "**VERY HIGH**" and "**HIGH**" significance will be investigated further to determine how the impact can be minimised or what alternative activities or mitigation measures can be implemented. For impacts identified as having a negative impact of "**MODERATE**" significance, it is standard practice to investigate alternate activities and/or mitigation measures. The most effective and practical mitigations measures will then be proposed. For impacts ranked as "**LOW**" significance, no investigations or alternatives will be considered. Possible management measures will be investigated to ensure that the impacts remain of low significance.

Please note that this impact assessment methodology was utilised for the 2016 EOH Final EIA Report as well as the 2019 WSP Final BA Report and has been utilised again for this amendment process in instances where the proposed amendment results in a change in the original impacts.

Table 5-1: Criterion used to rate the significance of an impact.

Effect	Temporal Scale			
	Short term	Less than 5 years		1
	Medium term	Between 5 and 20 years		2
	Long Term	Between 20 and 40 years (a generation) and from a human perspective almost permanent.		3
	Permanent	Over 40 years and resulting in a permanent and lasting change that will always be there.		4
	Spatial Scale			
	Localised	At localised scale and a few hectares in extent		1
	Project Area	The proposed site and its immediate environs		2
	Regional	District and Provincial level		3
	National	Country		3
	International	Internationally		4
	Severity	Impact (Negative)	Benefit (Positive)	
	Slight / Slightly Beneficial	Slight impacts on the affected system(s) or party (ies)	Slightly beneficial to the affected system(s) or party (ies)	1
	Moderate / Moderately Beneficial	Moderate impacts on the affected system(s) or party(ies)	An impact of real benefit to the affected system(s) or party (ies)	2
	Severe / Beneficial	Severe impacts on the affected system(s) or party (ies)	A substantial benefit to the affected system(s) or party (ies)	4
	Very Severe / Very Beneficial	Very severe change to the affected system(s) or party(ies)	A very substantial benefit to the affected system(s) or party (ies)	8
Likelihood	Likelihood			
	Unlikely	The likelihood of these impacts occurring is slight		1
	May Occur	The likelihood of these impacts occurring is possible		2
	Probable	The likelihood of these impacts occurring is probable		3
	Definite	The likelihood is that this impact will definitely occur		4

Table 5-2: The Significance Matrix

LIKELIHOOD	Effect													
	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	4	5	6	7	8	9	10	11	12	13	14	15	16	17
2	5	6	7	8	9	10	11	12	13	14	15	16	17	18
3	6	7	8	9	10	11	12	13	14	15	16	17	18	19
4	7	8	9	10	11	12	13	14	15	16	17	18	19	20

Table 5-3: The Significance Rating Table

SIGNIFICANCE	DESCRIPTION
Low	Acceptable impact for which mitigation is desirable but not essential. The impact by itself is insufficient even in combination with other low impacts to prevent the development being approved. These impacts will result in either positive or negative medium to short term effects on the social and/or natural environment.
Moderate	An important impact which requires mitigation. The impact is insufficient by itself to prevent the implementation of the project but which in conjunction with other impacts may prevent its implementation. These impacts will usually result in either a positive or negative medium to long-term effect on the social and/or natural environment.
High	A serious impact, if not mitigated, may prevent the implementation of the project (if it is a negative impact). These impacts would be considered by society as constituting a major and usually a long-term change to the (natural &/or social) environment and result in severe effects or beneficial effects.
Very High	A very serious impact which, if negative, may be sufficient by itself to prevent implementation of the project. The impact may result in permanent change. Very often these impacts are unmitigable and usually result in very severe effects, or very beneficial effects. However, this is very specific to each specialist study and does not necessarily mean no-go.

5.2 2016 IMPACT SUMMARY[5]

Table 5-4 provides a summary of the impacts identified during the 2016 S&EIA undertaken for the original 60 Turbine WEF.

Table 5-4: 2016 Impact Assessment Summary

IMPACT IDENTIFIED	PHASE	STATUS	WITHOUT MITIGATION	WITH MITIGATION
Agriculture, Soil and Land Use Capacity				
Increase in erosion potential	Planning and Design	Negative	**Moderate**	**Low**
Increase in renewable energy development	Planning and Design	Negative	**Low**	**Low**
Loss of agricultural crop land	Planning and Design	Negative	**Moderate**	**Low**
Managing of hazardous chemicals	Construction	Negative	**Moderate**	**Low**
Loss of grazing, game and livestock from unplanned fire	Construction	Negative	**High**	**Low**
Loss of agricultural potential due to poor management of the soil stockpile	Construction	Negative	**Moderate**	**Low**

[5] The full 2016 specialist reports can be made available on request.

IMPACT IDENTIFIED	PHASE	STATUS	WITHOUT MITIGATION	WITH MITIGATION
Soil profile disturbance and resultant decrease in soil agricultural capability	Construction	Negative	**Very High**	**Low**
Establishment of renewable energy infrastructure on agricultural land	Construction	Negative	**Moderate**	**Low**
Increase in erosion potential	Construction	Negative	**Moderate**	**Low**
Loss of agricultural crop land	Construction	Negative	**Moderate**	**Low**
Increase in erosion potential	Operational	Negative	**Moderate**	**Low**
Establishment of renewable energy infrastructure on agricultural land	Operational	Negative	**Moderate**	**Low**
Establishment of new access roads	Operational	Positive	**High**	**High**
Decommissioning and removal of renewable energy infrastructure on agricultural land	Decommissioning	Positive	**Moderate**	**Moderate**
Biodiversity – Terrestrial Flora				
Impact on vegetation and listed plant species due to transformation within the development footprint.	Construction	Negative	**Moderate**	**Low**
Soil erosion risk as a result of clearing and disturbance within the development footprint and adjacent affected areas.	Construction	Negative	**Moderate**	**Low**
Following construction, the site will be highly vulnerable to soil erosion.	Operational	Negative	**Moderate**	**Low**
Following construction, the site will be highly vulnerable to alien plant invasion.	Operational	Negative	**Moderate**	**Low**
Soil Erosion Risk Following Decommissioning will be high.	Decommissioning	Negative	**Moderate**	**Low**
Alien plant invasion will be highly likely within disturbed areas following decommissioning.	Decommissioning	Negative	**Moderate**	**Low**
Biodiversity – Terrestrial Fauna				
Direct faunal impacts due to the construction phase noise and physical disturbance.	Construction	Negative	**Moderate**	**Moderate**
Faunal impacts due to operational activities of the wind farm such as noise, and human presence during maintenance activities.	Operational	Negative	**Moderate**	**Low**
Faunal Impacts due to Decommissioning Phase activities such as noise and disturbance due to the presence of construction staff and the operation of heavy machinery.	Decommissioning	Negative	**Moderate**	**Low**
Avifauna				
Habitat loss associated with the construction phase.	Planning and Construction	Negative	**Low**	**Low**
Disturbance and displacement associated with the construction phase.	Planning and Construction	Negative	**Low**	**Low**
Activities and/or presence of intrusive structures cause birds to permanently move away from infrastructure.	Operational	Negative	**Moderate**	**Moderate**

IMPACT IDENTIFIED	PHASE	STATUS	WITHOUT MITIGATION	WITH MITIGATION
Turbine collision mortality	Operational	Negative	**Low**	**Low**
Powerline collision mortality associated with the placement of 33kV Powerlines throughout the project site	Operational	Negative	**Moderate**	**Moderate**
Bats				
Destruction of bat roosts due to earthworks and blasting	Construction	Negative	**Moderate**	**Low**
Loss of foraging habitat	Construction	Negative	**Moderate**	**Low**
Bat mortalities due to direct blade impact or barotrauma during foraging activities (not migration).	Operational	Negative	**High**	**Low**
Artificial lighting	Operational	Negative	**High**	**Low**
Loss of foraging habitat	Decommissioning	Negative	**Low**	**Low**
Surface Water and Wetland				
Loss of riparian systems and disturbance to alluvial water courses.	Construction	Negative	**Moderate**	**Low**
Loss of wetlands and wetland function in the construction phase.	Construction	Negative	**Moderate**	**Low**
Increase in sedimentation and erosion in the construction, operational and decommissioning phases.	Construction	Negative	**Moderate**	**Low**
Impact on localised surface water quality.	Construction	Negative	**Moderate**	**Low**
Impact on localised aquatic systems due to the storage of hazardous substances.	Construction	Negative	**Moderate**	**Low**
Impact on riparian systems through the possible increase in surface water runoff on riparian form and function during the operational and decommissioning phases.	Operational	Negative	**Moderate**	**Low**
Loss of riparian systems and disturbance to alluvial water courses.	Decommissioning	Negative	**Moderate**	**Low**
Increase in sedimentation and erosion in the construction, operational and decommissioning phases.	Decommissioning	Negative	**Moderate**	**Low**
Impact on localised surface water quality.	Decommissioning	Negative	**Moderate**	**Low**
Impact on riparian systems through the possible increase in surface water runoff on riparian form and function during the operational and decommissioning phases.	Decommissioning	Negative	**Moderate**	**Low**
Noise				
Impact of construction increase in ambient noise levels.	Construction	Negative	**Low**	**Low**
Impact of the operational noise on the surrounding environment.	Operational	Negative	**Low**	**Low**
Impact of decommissioning increase in ambient noise levels.	Decommissioning	Negative	**Low**	**Low**
Visual				
Visual impact of construction activity	Construction	Negative	**Moderate**	**Moderate**
Construction camp alternatives 1, 2 and 3.	Construction	Negative	**Low**	**Low**

IMPACT IDENTIFIED	PHASE	STATUS	WITHOUT MITIGATION	WITH MITIGATION
Impact of the layout on sensitive visual receptors.	Operational	Negative	**High**	**High**
The access road, including alternatives 1 and 2.	Operational	Negative	**Moderate**	**Moderate**
Visual impact of the on-site substation.	Operational	Negative	**Moderate**	**Moderate**
Shadow flicker	Operational	Negative	**No Impact**	
Visual impact of decommissioning activity.	Decommissioning	Negative	**Moderate**	**Moderate**
Traffic and Transport				
Traffic impact as a result of transportation of concrete towers.	Construction	Negative	**Low**	**Low**
Traffic impact as a result of transportation of Steel Towers.	Construction	Negative	**Low**	**Low**
Traffic as a result of Operations.	Operational	Negative	**Low**	**Low**
Traffic impact as a result of Maintenance.	Operational	Negative	**Low**	**Low**
Heritage				
Destruction of precolonial / stone age material.	Construction	Negative	**Very High**	**Moderate**
Destruction of Stone Walling Features (BV_SW1 - BV_SW17) and associated Historical Artefact Scatters (BV_Hist1 – BV_Hist3)	Construction	Negative	**Very High**	**Moderate**
Destruction of Graves (formal and informal burials) (HV_G1 – BV_G2)	Construction	Negative	**Very High**	**Moderate**
The Destruction of Homesteads / Farmhouse Complexes (BV_HS1 – BV_HS6)	Construction	Negative	**Very High**	**Moderate**
The impact of the construction of the proposed Rietkloof WEF on the cultural landscape.	Construction	Negative	**Very High**	**Moderate**
Palaeontology				
Disturbance, damage or destruction of fossil heritage within development footprint during the construction phase	Construction	Negative	**Moderate**	**Low**
Potential improved palaeontological database.	Construction	Positive	**Low**	**High**
Socio-Economic				
Creation of employment and business opportunities during the construction phase	Construction	Positive	**Low**	**Moderate**
Technical advice for local farmers and municipalities.	Construction	Positive	**N/A**	**Moderate**
Impact of construction workers on local communities.	Construction	Negative	**Moderate**	**Low**
Influx of job seekers.	Construction	Negative	**Low**	**Low**
Risk to safety, livestock and farm infrastructure.	Construction	Negative	**Moderate**	**Low**
Increased risk of grass fires.	Construction	Negative	**Moderate**	**Low**

IMPACT IDENTIFIED	PHASE	STATUS	WITHOUT MITIGATION	WITH MITIGATION
Impacts associated with construction vehicles.	Construction	Negative	**Moderate**	**Low**
Impacts associated with loss of farmland.	Construction	Negative	**Moderate**	**Low**
Potential impact on tourism.	Construction	Negative	**Low**	**Low**
Creation of employment and business opportunities associated with the operational phase	Operational	Positive	**Low**	**Moderate**
Creation of an alternative income source for farmers, which in turn can assist to reduce and or prevent job losses in the farming sector.	Operational	Positive	**Low**	**Moderate**
Benefits associated with the establishment of a Community Trust.	Operational	Positive	**Moderate**	**High**
Promotion of clean, renewable energy.	Operational	Negative/ Positive	**Moderate (-)**	**Moderate (+)**
Visual impact associated with the proposed WEF and the potential impact on the areas rural sense of place.	Operational	Negative	**Moderate**	**Moderate**
Potential impact of the WEF on local tourism.	Operational	Negative	**Low**	**Low**
Assessment of Power Lines and Substation.	Operational	Negative	**Low**	**Low**
Potential visual impacts associated with access roads and construction camps (all alternative locations).	Operational	Negative	**Low**	**Low**
Social impacts associated with the decommissioning phase are linked to the loss of jobs and associated income.	Decommissioning	Negative	**Low**	**Low**

5.3 2019 IMPACT SUMMARY[6]

Table 5-5 provides a summary of the impacts identified during the 2019 BA undertaken for the 51 Turbine WEF.

Table 5-5: 2016 Impact Assessment Summary

REF.	IMPACT DESCRIPTION	PHASE	STATUS	WITHOUT MITIGATION	WITH MITIGATION
Climate					
C1	Limited impact on climate change due to emissions from machinery and vehicles on the site during construction.	Construction/ Decommissioning	Negative	**Low**	**Low**
C2	The manufacturing of the materials associated with the project, and associated transportation to site will result in indirect GHG emissions. There will be no GHG emissions directly associated with power	Operation	Negative	**Moderate**	**Low**

[6] The full 2019 specialist reports can be made available on request

REF.	IMPACT DESCRIPTION	PHASE	STATUS	WITHOUT MITIGATION	WITH MITIGATION
	generation from the facility in the operation phase due to the nature of the technology.				
C3	The project may be regarded as having a positive impact in terms of GHG emissions associated with the development of power generation capacity in South Africa i.e. less GHG emissions per unit of power contributed when compared to conventional fossil fuel derived power.	Operation	Positive	**High**	**High**
Topography					
T1	The development of infrastructure such as turbines, internal access roads, fencing etc. will result in the need for site clearance, top soil removal and earthmoving activities associated with the road and infrastructure construction. These activities will result in a minor change in the topographical profile of the site.	Construction	Negative	**Low**	**Low**
T2	The Rietkloof WEF will not result in any changes to the vertical ground profile within the study area; however, the height of the turbines add a secondary visual dimension to the study area which can visually change the topography in the area.	Operation	Negative	**Moderate**	**Moderate**
Geology					
G1	Site preparation will be required in terms of vegetation clearance and bulk earthworks. In addition, concrete foundations will be required for the supporting of the wind turbines.	Construction	Negative	**Low**	**Low**
Agriculture, Soils and Land Capability					
ASLC1	Inappropriate storm water design may lead to an increase in surface soil erosion.	Planning and Design	Negative	**Moderate**	**Low**
ASLC2	Increase in renewable energy development in the local area will result in a gradual reduction of available agricultural land over time.		Negative	**Moderate**	**Low**
ASLC3	The development of access roads could result in the loss of irrigated agricultural crop land.		Negative	**Moderate**	**Low**
ASLC4	The planning and design phase of a new wind farm will result in the loss of local soil types.		Negative	**High**	**High**
ASLC5	The potential for soil contamination as a result of hazardous chemical spills and leakages (such as those from vehicles, generators etc.) could lead to soil contamination and a loss of fertile soils if not managed appropriately.	Construction	Negative	**Moderate**	**Low**
ASLC6	Fires originating from the construction site could escape into and burn the natural		Negative	**Very High**	**Low**

REF.	IMPACT DESCRIPTION	PHASE	STATUS	WITHOUT MITIGATION	WITH MITIGATION
	vegetation leading to the loss of grazing and possibly game and livestock.				
ASLC7	During the construction phase, the incorrect stockpiling of the soil horizons (specifically topsoil) could potentially result in a decrease of agricultural viability/potential.		Negative	**Moderate**	**Low**
ASLC8	Excavations for the construction of the turbines and associated infrastructure will disturb the soil profile. If topsoil becomes buried, or subsoil rock, that is less suitable for root growth, remains at the surface, the agricultural suitability of the soil, that will become available for agriculture again after decommissioning of the WEF, will be reduced.		Negative	**Very High**	**Low**
ASLC9	During the construction phase the WEF infrastructure (permanent and temporary) will result in the loss of low agricultural land.		Negative	**Moderate**	**Low**
ASLC10	Impacted areas and hard surfaces associated with the construction phase will cause and increase in run-off, particularly after rainfall events which could lead to soil erosion.		Negative	**High**	**Low**
ASLC11	During the construction phase the construction of access roads may result in the permanent loss of existing croplands.		Negative	**High**	**Low**
ASLC12	During the operational phase an increase in hard surfaces (hardstands and roads) will increase run-off and potentially lead to soil erosion.	Operational	Negative	**High**	**Low**
ASLC13	During the operational phase the WEF infrastructure will result in the loss of low quality agricultural land.		Negative	**Moderate**	**Low**
ASLC14	The new access roads that will be built for the WEF will allow the landowners and neighbours easier access to farm areas that were previously inaccessible or difficult to access.		Positive	**High**	**High**
ASLC15	During the decommissioning phase the decrease in renewable energy development in the local area will result in an increase of available agricultural land.	Decommissioning	Positive	**High**	**High**
Natural Vegetation and Animal Life					
BIO1	Impact on vegetation and listed plant species due to transformation within the development footprint	Planning and Construction	Negative	**High**	**Moderate**
BIO2	Faunal impacts due to the construction phase noise and physical disturbance		Negative	**Moderate**	**Moderate**
BIO3	Soil erosion risk as a result of clearing and disturbance within the development footprint and adjacent affected areas		Negative	**Moderate**	**Low**

REF.	IMPACT DESCRIPTION	PHASE	STATUS	WITHOUT MITIGATION	WITH MITIGATION
BIO4	Faunal impacts due to operational activities of the WEF such as noise, and human presence during maintenance activities	Operation	Negative	**Moderate**	**Low**
BIO5	All areas disturbed during construction will remain vulnerable to disturbance for some time into the operational phase and will require regular maintenance to ensure that erosion is minimised.		Negative	**Moderate**	**Low**
BIO6	Disturbed areas are vulnerable to alien plant invasion and it is likely that road verges, crane pads and other cleared or disturbed areas will be foci for the infestation of alien plants. Uncontrolled infestation can result in invasion into the intact rangeland and where woody species are involved, this can result in loss of biodiversity and a decline in ecosystem services.		Negative	**Moderate**	**Low**
BIO7	Faunal Impacts due to Decommissioning Phase activities such as noise and disturbance	Decommissioning	Negative	**Moderate**	**Low**
BIO8	Decommissioning will result in a lot of disturbance which will leave the site vulnerable to erosion.		Negative	**Moderate**	**Low**
BIO9	Decommissioning will leave the site vulnerable to alien plant invasion.		Negative	**Moderate**	**Low**
Avifauna					
AV1	Development of the infrastructure footprints inevitably causes the loss of foraging and nesting habitat for most locally resident species of birds.	Planning and Construction	Negative	**Moderate**	**Low**
AV2	Disturbance of avifauna due to construction activities		Negative	**Moderate**	**Low**
AV3	Activities and/or similar presence of intrusive structures cause birds to permanently move away from infrastructure	Operation	Negative	**Moderate**	**Moderate**
AV4	Collision mortality with the turbines		Negative	**Low**	**Low**
AV5	Powerline collision mortality associated with the placement of 33kV Powerlines throughout the project site		Negative	**Moderate**	**Moderate**
Bats					
BAT1	Destruction of bat roosts due to earthworks and blasting	Construction	Negative	**Moderate**	**Low**
BAT2	Loss of foraging habitat.		Negative	**Low**	**Low**
BAT3	Bat mortalities due to direct blade impact or barotrauma during foraging activities,	Operation	Negative	**High**	**Moderate**
BAT4	Artificial Lighting		Negative	**High**	**Low**
BAT5	Loss of foraging habitat.	Decommissioning	Negative	**Low**	**Low**

REF.	IMPACT DESCRIPTION	PHASE	STATUS	WITHOUT MITIGATION	WITH MITIGATION
Surface Water					
SW1	Loss of riparian systems and disturbance of the alluvial water courses in the construction and operational phases.	Construction and Decommissioning	Negative	**Moderate**	**Low**
SW2	Loss of wetlands and wetland function in the construction phase.		Negative	**Moderate**	**Low**
SW3	Increase in sedimentation and erosion in the construction, operational and decommissioning phases. Impacts include changes to the hydrological regime such as alteration of surface run-off patterns which could occur during the construction, operational and decommissioning phases.		Negative	**Moderate**	**Low**
SW4	Potential impact on localised surface water quality during the construction and decommissioning phases		Negative	**Moderate**	**Low**
SW5	Storage of hazardous substances particular in the construction and operational phase		Negative	**Moderate**	**Low**
SW6	Impact on riparian systems through the possible increase in surface water runoff on riparian form and function during the operational and decommissioning phase	Operation and decommissioning	Negative	**Moderate**	**Low**
Noise					
N1	Construction activities will cause an increase in ambient noise levels	Construction	Negative	**Low**	**Low**
N2	Operational noise on the surrounding environment	Operational	Negative	**Low**	**Low**
Visual					
V1	Visual impact during construction due to dust, vehicles and equipment	Construction	Negative	**Moderate**	**Moderate**
V2	Impact of construction camps on visually receptors		Negative	**Low**	**Low**
V3	Impact of wind turbines on visually sensitive points and areas	Operational	Negative	**High**	**High**
V4	Impacts of access roads on visually sensitive receptors		Negative	**Moderate**	**Moderate**
V5	Impact of substations on visually sensitive receptors		Negative	**Low**	**Low**
V6	Visual impact of decommissioning activity	Decommissioning	Negative	**Moderate**	**Moderate**
Traffic and Transport					
TT1	Traffic impact as a result of transportation of concrete towers	Construction and Decommissioning	Negative	**Moderate**	**Low**
TT2	Traffic impact as a result of transportation of Steel Towers		Negative	**Low**	**Low**
TT3	Traffic as a result of Operations	Operational	Negative	**Moderate**	**Moderate**

REF.	IMPACT DESCRIPTION	PHASE	STATUS	WITHOUT MITIGATION	WITH MITIGATION
TT4	Traffic impact as a result of Maintenance		Negative	**Low**	**Low**
Heritage					
H1	Impact assessment of destruction of precolonial / stone age material	Construction	Negative	**Very High**	**Moderate**
H2	Impact assessment of the destruction of stone walling features		Negative	**Very High**	**Moderate**
H3	Impact assessment of the destruction of graves		Neutral	**Very High**	**Moderate**
H4	Impact assessment of the destruction of homesteads/ farmhouses		Neutral	**Very High**	**Moderate**
H5	The impact of the construction of the proposed Rietkloof WEF on the cultural landscape		Neutral	**Very High**	**Very High**
H6	The impact of the construction of the proposed Rietkloof WEF on the built environment		Neutral	**Very High**	**Moderate**
Palaeontology					
P1	Disturbance, damage or destruction of fossil heritage during the construction phase of the WEF	Construction	Negative	**Moderate**	**Low**
Social					
SE1	Creation of Employment Opportunities	Construction	Positive	**Moderate**	**Moderate**
SE2	Technical advice on wind energy to local farmers and municipalities		Positive	**N/A-** ***represents the status quo***	**Moderate**
SE3	Presence of construction workers on local communities		Negative	**Moderate**	**Moderate**
SE4	Influx of job- seekers		Negative	**Moderate**	**Moderate**
SE5	Increased risks to livestock and farming infrastructure associated with the construction related activities and presence of construction workers on the site		Negative	**Moderate**	**Moderate**
SE6	Increased risk of grass fires		Negative	**Moderate**	**Low**
SE7	Noise, dust, waste and safety impacts associated with construction related activities and vehicles		Negative	**Moderate**	**Low**
SE8	grazing and productive farmland		Negative	**Moderate**	**Low**
SE9	Impact on tourism		Positive	**Low**	**Low**
SE10	Creation of employment and business opportunities	Operational	Positive	**Moderate**	**Moderate**
SE11	Generation of income for farmers		Positive	**Moderate**	**Moderate**
SE12	Benefits associated with the establishment of a community trust		Positive	**Moderate**	**High**

REF.	IMPACT DESCRIPTION	PHASE	STATUS	WITHOUT MITIGATION	WITH MITIGATION
SE13	Development of infrastructure for the generation of clean, renewable energy		Positive	**Moderate**	**High**
SE14	Visual impacts and associated impact on sense of place		Negative	**Moderate**	**Moderate**
SE15	Impact on tourism		Negative	**Moderate**	**Moderate**
SE16	Impacts associated with decommissioning	Decommissioning	Negative	**Moderate**	**Low**

5.4 CUMULATIVE IMAPCTS

During the 2016 EIA and 2019 BA processes all specialists assessed the cumulative impacts that would result from the existing projects within a 30km radius of the site. The surrounding projects have been detailed in **Table 2-3** and illustrated in **Figure 2-4** above. The following projects within a 30km radius were taken into account:

- Kudusberg Wind Project;
- Konstabel Solar Project;
- Roggeveld Wind Project (**Preferred Bidder**, currently under construction);
- Karreebosch Wind Project;
- Rondekop Wind Project;
- Komsberg East and Komsberg West Wind Projects;
- Perdekraal Wind Project (**Preferred Bidder**, currently under construction);
- Witberg Wind Project;
- Sutherland Wind and Solar Project;
- Hidden Valley Wind Project (Karusa and Soetwater wind farms (**Preferred Bidder**, currently under construction);
- Gunstfontein Wind Project;
- Maralla East and West Wind Projects;
- Brandvalley Wind Project (**Preferred Bidder**, to be constructed in due course);
- Esizayo Wind Project; and
- Tooverberg Wind Project.

5.4.1 2016 CUMULATIVE IMPACT SUMMARY[7]

Table 5-6 provides a summary of the cumulative impacts identified during the 2016 EIA undertaken for the original 60 Turbine WEF.

Table 5-6: 2016 Cumulative Impact Assessment Summary

IMPACT IDENTIFIED	STATUS	WITHOUT MITIGATION	WITH MITIGATION
Agriculture, Soil and Land Use Capacity			
Change in local land use (for all phases)	Negative	**Moderate**	**Moderate**

[7] The full 2016 specialist reports can be made available on request

IMPACT IDENTIFIED	STATUS	WITHOUT MITIGATION	WITH MITIGATION
Overall cumulative impact	Negative	**Low**	**Low**
Biodiversity – Terrestrial Flora			
Impact on CBAs and Broad-Scale Ecological Processes due habitat loss and the presence and operation of the facility.	Negative	**High**	**Moderate**
Avifauna			
The combined impacts from other renewable energy developments within close proximity to the Brandvalley wind farm.	Negative	**Moderate**	**Moderate**
Electrocution.	Negative	**Low**	**Low**
Habitat Destruction.	Negative	**Low**	**Low**
Displacement.	Negative	**Low**	**Low**
Collision with solar panels.	Negative	**Moderate**	**Low**
Collision with turbines.	Negative	**Low**	**Low**
Collision with power lines.	Negative	**Moderate**	**Moderate**
Bats			
Cumulative bat mortalities due to direct blade impact or barotrauma during foraging (resident and migrating bats affected).	Negative	**High**	**Moderate**
Surface Water and Wetlands			
Overall cumulative impact.	Negative	**Moderate**	**Low**
Noise			
Noise increase due to the development of multiple WEF in the same area.	Negative	**Low**	**Low**
Visual			
Cumulative Visual impact	Negative	**High**	**High**
Heritage			
The construction of the proposed Rietkloof WEF and cumulative impacts on heritage resources.	Negative	**Very High**	**Moderate**
Palaeontology			
Disturbance, damage or destruction of fossil heritage within development footprint during the construction phase of the WEF.	Negative	**Low**	**Low**
Potential improved palaeontological database.	Positive	**Low**	**High**
Traffic and Transport			
No cumulative impacts were identified during the 2016 impact assessment.			
Socio-Economic			
Cumulative visual impacts associated with the establishment of a number of WEFs on the on the areas rural sense of place and character of the landscape.	Negative	**Moderate**	**Moderate**
The establishment of a number of renewable energy facilities in the KHLM and LLM will place pressure on local services, specifically medical, education and accommodation.	Negative	**Moderate**	**Moderate**
The establishment of a number of renewable energy facilities in the KHLM and LLM will create employment,	Positive	**Moderate**	**High**

IMPACT IDENTIFIED	STATUS	WITHOUT MITIGATION	WITH MITIGATION
skills development and training opportunities, creation of downstream business opportunities.			

5.4.2 2019 CUMULATIVE IMPACT SUMMARY[8]

Table 5-7 provides a summary of the cumulative impacts identified during the 2019 BA undertaken for the 51 Turbine WEF.

Table 5-7: 2019 Cumulative Impact Assessment Summary

REF.	IMPACT DESCRIPTION	PHASE	STATUS	WITHOUT MITIGATION	WITH MITIGATION
Agriculture, Soils and Land Capability					
ASLC-C1	Overall Agricultural Soil and Land Capacity cumulative impact	Operational	Negative	**Moderate**	**Moderate**
Natural Vegetation and Animal Life					
BIO-C1	Impact on CBAs and Broad-Scale Ecological Processes due habitat loss and the presence and operation of the facility	Construction and Operational	Negative	**Moderate**	**Low**
BIO-C2	Impact on future conservation options due to development within the Roggeveld Area	Operational	Negative	**Moderate**	**Low**
Avifauna					
AV-C1	Overall Cumulative Avifaunal Impact	Operation	Negative	**Moderate**	**Moderate**
AV-C2	Electrocution		Negative	**Moderate**	**Moderate**
AV-C3	Habitat Destruction		Negative	**Moderate**	**Moderate**
AV-C4	Displacement		Negative	**Low**	**Low**
AV-C5	Collison with various forms of renewable energy infrastructure		Negative	**Moderate**	**Low**
Bats					
BAT-C1	Collison with various forms of renewable energy infrastructure	Operational	Negative	**High**	**Moderate**
Surface Water					
SW-C1	Aquatic cumulative impact	Operational	Negative	**Moderate**	**Low**
Noise					
N-C1	Overall cumulative noise impact	Operational	Negative	**Low**	**Low**
Visual					
V-C1	Overall cumulative noise impact	Operational	Negative	**High**	**High**
Heritage					

[8] The full 2019 specialist reports can be made available on request

REF.	IMPACT DESCRIPTION	PHASE	STATUS	WITHOUT MITIGATION	WITH MITIGATION
H-C1	The construction of the proposed Rietkloof WEF and cumulative impacts on heritage resources		Negative	**Very High**	**Moderate**
Palaeontology					
P-C1	Disturbance, damage or destruction of fossils (direct, negative impacts) preserved at or beneath the ground surface within the development footprint		Negative	**Moderate**	**Low**
Social					
SE-C1	Cumulative Impact on Sense of Place	Operational	Negative	**Moderate**	**Moderate**
SE-C2	Cumulative Impact on Local Services and Accommodation	Operational	Negative	**Moderate**	**Moderate**
SE-C3	Cumulative Impacts on Local Economy	Operational	Positive	**Moderate**	**High**

5.5 2021 SPECIALIST STUDIES

The specialists outlined in **Table 5-8** were appointed to undertake the necessary specialist reporting to determine and assess the potential impacts associated with the proposed amendments. Each of the specialists has reviewed the previous studies (2016 and 2019) and the proposed amendments to the projects and has provided a specialist statement as to whether the proposed amendment will change the impacts identified in the previous studies as well as to whether any additional mitigation measures will be required. The Specialist Declarations for the specialists are included in **Appendix D**. A summary of the findings of the 2021 statements are provided below in section 5.6 below.

Table 5-8: Specialists appointed to determine and assess the potential impacts

NR	ENVIRONMENTAL ASPECT	ASSESSED BY
1	Agricultural and Soil Specialist	Johan Lanz
2	Terrestrial Ecology & Biodiversity	Trusted Partners, Janie Pote and Malcome Logie
3	Aquatic Specialist	Freshwater Ecologist Network (FEN) Consulting (Pty) Ltd, Christel du Preez
4	Avifaunal Specialist	Birds and Bats Unlimited, Dr Rob Simmons
5	Bat Specialist	Animalia Consultants, Werner Marais
6	Heritage Specialist	CTS Heritage, Nicholas Wiltshire
7	Noise Specialist	SafeTech, Dr Brett Williams
8	Palaeontology Specialist	Natura Viva, Dr John Almond

NR	ENVIRONMENTAL ASPECT	ASSESSED BY
9	Social Specialist	Mr Tony Barbour and Schalk van der Merwe
10	Traffic Specialist	JG Afrika, Avheani Ramawa
11	Visual Specialist	SiVEST SA, Kerry Schwartz

5.6 2021 SPECIALIST FINDINGS

5.6.1 AGRICULTURE, SOIL AND LAND USE CAPACITY

Mr Roy de Kock, an agricultural and soil specialist from EOH Coastal and Environmental Services, undertook the 2016 and 2019 agricultural impact assessments. Subsequently, Johann Lanz was appointed to review the previous studies and consider the effect of the proposed amendments on the previous impacts with reference to the final layout. The outcome of the assessment is outlined in a 2021 Specialist Statement included in **Appendix E**.

The specialist has noted the following in his Specialist Statement:

- There are no agricultural impacts related to the proposed amendment. It will not change the nature or significance of any of the agricultural impacts assessed in the original study. There are no agricultural advantages or disadvantages related to the amendment.
- No changes or additions to the mitigation measures for agricultural impacts that were recommended in the original assessment are required, and there are therefore no required changes to the EMPr.
- The agricultural impact of the amended project will therefore be identical to the impact that was assessed in the original specialist assessment report.

The agricultural impact ratings as reported above remain relevant without any change as long as mitigation measures as detailed and required in the EMPr (**Appendix P**) are implemented

Given the above outcome, this Rietkloof Amendment is supported in terms of agricultural impacts.

5.6.2 BIODIVERSITY

Mr Simon Todd, an ecology specialist from 3Foxes Biodiversity Solutions, undertook the 2016 and 2019 ecology impact assessments. Subsequently, Trusted Partners was appointed to review the previous studies and consider the effect of the proposed amendments on the previous impacts with reference to the final layout. The outcome of the assessment is outlined in a 2021 Specialist Statement included in **Appendix F.**

The ecologist found that the proposed changes in technology/infrastructure in respect of capacity output, hub height, rotor diameter, blade length and maximum blade tip height will not result in any change in the nature of impacts, nor in the significance of direct, indirect, or cumulative impacts, of the project. As such, no further ecological assessment are required in this regard.

Given the above outcome, this Rietkloof Amendment is supported in terms of terrestrial ecology impacts.

REMOVAL OF CONSERVATION MANAGEMENT PLAN FROM THE EA

Appendix C includes two professional opinions outlining the reasons behind the recommended removal of the Conservation Management Plan from the EA and subsequently the final EMPr.

The following conclusions made in the Trusted Partners Opinion are relevant:

- The biodiversity across Koedoesberge cannot be managed on a piecemeal basis;
- The ecological functioning of the Koedoesberge and the current farming practice appear to be in relative harmony with each other;
- The establishment and operation of WEFs on the Koedoesberge (as attested to be the numerous and various EAs pertaining to such WEFs) do not have a significant impact on ecological functional and biodiversity on the Koedoesberge;
- Establishment of a conservation area, is highly unlikely to achieve the any objectives envisaged by the current Conservation Management Plan;
- The conservation plan is especially onerous upon the landowner and serves little to address impact that may be resultant from establishment of WEF;
- The biodiversity and ecological functioning of the Koedoesberge is best left as unhindered as in its current form;
- There is particular inconsistency in that the conservation plan method has not been equally applied to the numerous other WEFs in the Komsberg REDZ and elsewhere in South Africa; it appears to be an arbitrary application to RK-WEF.

Therefore, the need for a Conservation Management Plan, detailing specific management of an as yet undefined Conservation Area, with oversight by a Conservation Forum is therefore deemed impractical.

In addition, Rietkloof does not have an agreement with the landowners for the management of or access to the remaining property extent outside of the access roads and turbine platforms, as such they will be unable to implement a Conservation Management Plan.

5.6.3 AVIFAUNA

Dr. Tony Williams, an avifauna specialist from African Insights, undertook the 2016 and 2019 avifauna impact assessments. Subsequently, Birds and bats Unlimited was appointed to review the previous studies and consider the effect of the proposed amendments on the previous impacts with reference to the final layout. The outcome of the assessment is outlined in a 2021 Specialist Statement included in **Appendix G.**

The avian re-assessment entailed a short re-assessment of the priority raptors, undertaken in May 2021, to determine if the receiving environment has changed, as well as to summarise the avian impacts of the previous avian assessment report compiled in 2016. The May 2021 survey revealed more species than recorded previously and a Passage Rate fourfold higher (at 0.32 eagles per hour) than in 2016. The re-assessment located a second Verreaux's Eagle nest site (in addition to the one identified in 2016) in the south-western corner of the Rietkloof site, on a large south-facing cliff. The two nests were observed to be attended by an adult during the May 2021 survey. Additional priority birds observed were Ludwig's Bustard *Neotis ludwigii* and Greater Flamingo *Phoenicopterus roseus*. These are Red Data species.

A 3-km buffer around both Verreaux's Eagle nests on site is recommended, in line with the present eagle guidelines (Ralston Paton 2017). It is noted that eleven turbines of the authorised 60 turbine positions occur within the 3-km buffer and four of these lie within 2016 recommended 1.5-km buffer around the Verreaux's Eagle nest. This would result in the repositioning of the eleven turbines (Turbines R01, R02, R03, R04, R05, R06, R07, R09, R10, R11, R12) away from the nest. Additionally, two of the turbines (Turbines R01, R02) that lie outside of the 1.5-km buffer and directly east of the nest appear to lie on the flight paths of eagle flights observed during the 2021 survey.

During the November 2021 site inspection, it was confirmed that the Black Harrier nest suspected by African Insights (2013) is active. The nest is located on the Brandvalley WEF site, but the recommended 3-5 km buffer of this nest just overlaps the Rietkloof WEF. The nearest turbine (R20) on Rietkloof is 4.9-km away, marginally inside the recommended 5-km buffer of the Birdlife South Africa Black Harrier guidelines. Given the marginal nature of this distance we do not believe this turbine offers much risk to the breeding birds here. In the Northern section of the wind farm, where three turbines occur in the revised layout for the WEF, multiple flights of Black Harriers were recorded in July 2021.

Given that the reduction in numbers of turbines (43%) is more than three-fold higher than the increase in blade length (13%), an increase in avian fatalities is not expected. Taller turbines and longer blades are generally associated with greater avian fatalities (Loss et al. 2013, Thaxter et al. 2020). UCT statisticians (Drs Birgit Erni and Francisco Cervantes Peralta) were requested to model the increase, using a combination of published data (kindly provide by Dr Scott Loss) and the limited South African data of fatalities from hub heights above 80-m (Ralston Paton et al. 2017).

The two graphs below indicate that (i) avian fatalities increase exponentially as hub height is increased (**Figure 5-1**); but (ii) the exponential increase flattens out when South African data are added to the graph (**Figure 5-2**).

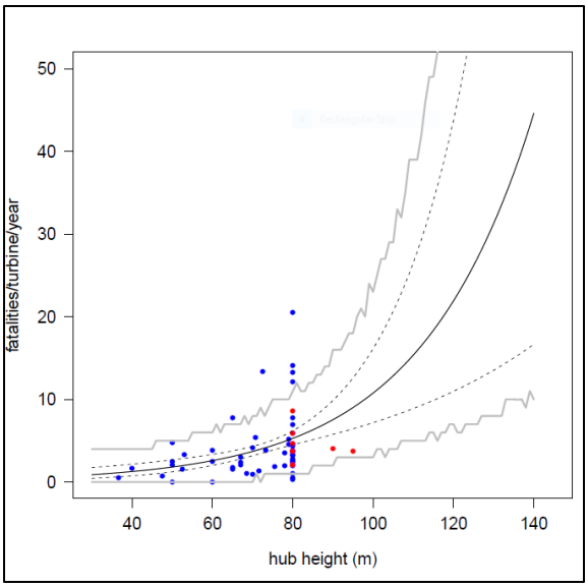

Figure 5-1: Prediction intervals from bootstrapping analyses (jagged line) based on North American hub height/fatality data (Loss et al. 2013 = blue data points) to determine if South African data (= red data points) fall within 95% confidence intervals. All 7 data points fall within the confidence intervals

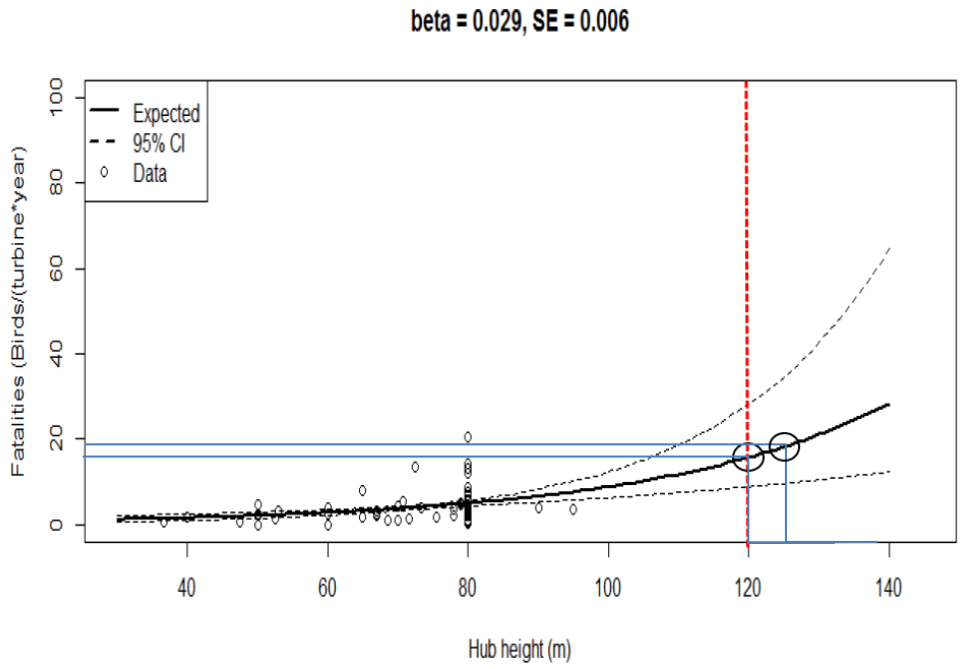

Figure 5-2: Modelled data combining avian fatalities from the USA (Loss et al. 2013) and from South Africa (Ralston-Paton et al. 2017) and their relation to hub height. The South African data (n = 7 farms) include two with hub heights of 90 m and 95 m. The combined data and 95% confidence limits predict that 16 birds (95% CI = 9, 28) will be killed on average per year for 120 m-high turbines and about 19 birds on average for 125 m-high turbines.

By reading what is predicted at the authorised (120-m) and proposed (125-m) hub heights, it is noted that the expected fatalities differ by about three birds (16 vs 19).

This means that with a decrease in the number of turbines the fatalities are also expected to decrease.

In mid-November 2021, following discussions with the client, eleven turbines were relocated away from the newly discovered Verreaux's Eagle nest in the south-west corner of the Rietkloof site. The changes are, thus, highly advantageous in reducing the possible threats to the breeding eagles and the nearest turbines to the eagle nest are now 5.6-km away. As such this is beyond what the new Verreaux's Eagle guidelines (Ralston Paton and Murgatroyd in prep.) recommend (5.2-km) and, thus, unlikely to impact Verreaux's Eagles here.

In November 2021, confirmation was received that Black Harriers are breeding 4.9-km to the west of the Rietkloof WEF (on the Brandvalley WEF) and, thus, marginally within the 3-5-km buffer recommended for this Endangered species. No major impact is expected on this species given that only one short harrier flight has been recorded near the closest turbine (R20) in July and (the current) November 2021 site visits.

Most flights of Black Harriers were recorded on the northern-most ridge. This area is, thus, designated of High sensitivity even though no harrier nests are known here.

The overall appraisal is that the proposed amendments, will thus not alter the previous avifauna impacts as long as mitigation measures as detailed and required in the EMPr (**Appendix P**) are implemented. Given the above outcome, the Rietkloof Amendment is supported in terms of avifauna impacts.

5.6.4 BATS

Mr Werner Marais, a bat specialist from Animalia, undertook the 2016 and 2019 bat impact assessment. Subsequently, the specialist has been appointed to review the previous studies and consider the effect of the proposed amendments on the previous impacts with reference to the final layout. The outcome of the assessment is outlined in a 2021 Specialist Statement included in **Appendix H.**

According to the verification assessment, the proposed turbine layout is in line with the bat sensitivity map as was applicable during the preconstruction guidelines that was in use during the EIA assessment and subsequent amendments. It also respects the current guideline criteria which requires turbine blade length to be outside the high sensitivity buffers, except for Turbines R27, R37 and R49. It is noted that the larger rotor diameter (180m) effectively brings the impact zone of each turbine closer to all bat sensitivity buffers, and no part of the turbine (including the turbine blades) is allowed to intrude into high bat sensitivity buffers. The verification assessment recommends that Turbines R27, R37 and R49 base centre points should be moved to be outside of the high bat sensitivity buffer in the event that a turbine with a 180m rotor diameter is utilised. All other turbines proposed can remain in the currently authorised positions.

A map of the bat sensitivity associated with the Rietkloof turbine layout WEF is included in **Figure 5-3**. It is important to note that the assessed final layout is acceptable from a bat sensitivity perspective if all conditions of the EA are complied with, an operational bat impact monitoring study is conducted for a minimum of 2 years, and Turbines R27, R37 and R49 are relocated outside of the high bat sensitivity buffer (in the event that a turbine with a 180m rotor diameter is utilised).

The overall appraisal is that the proposed amendments, will thus not alter the previous bat impacts as long as mitigation measures as detailed and required in the EMPr (**Appendix P**) are implemented. Given the above outcome, the Rietkloof Amendment is supported in terms of bat impacts.

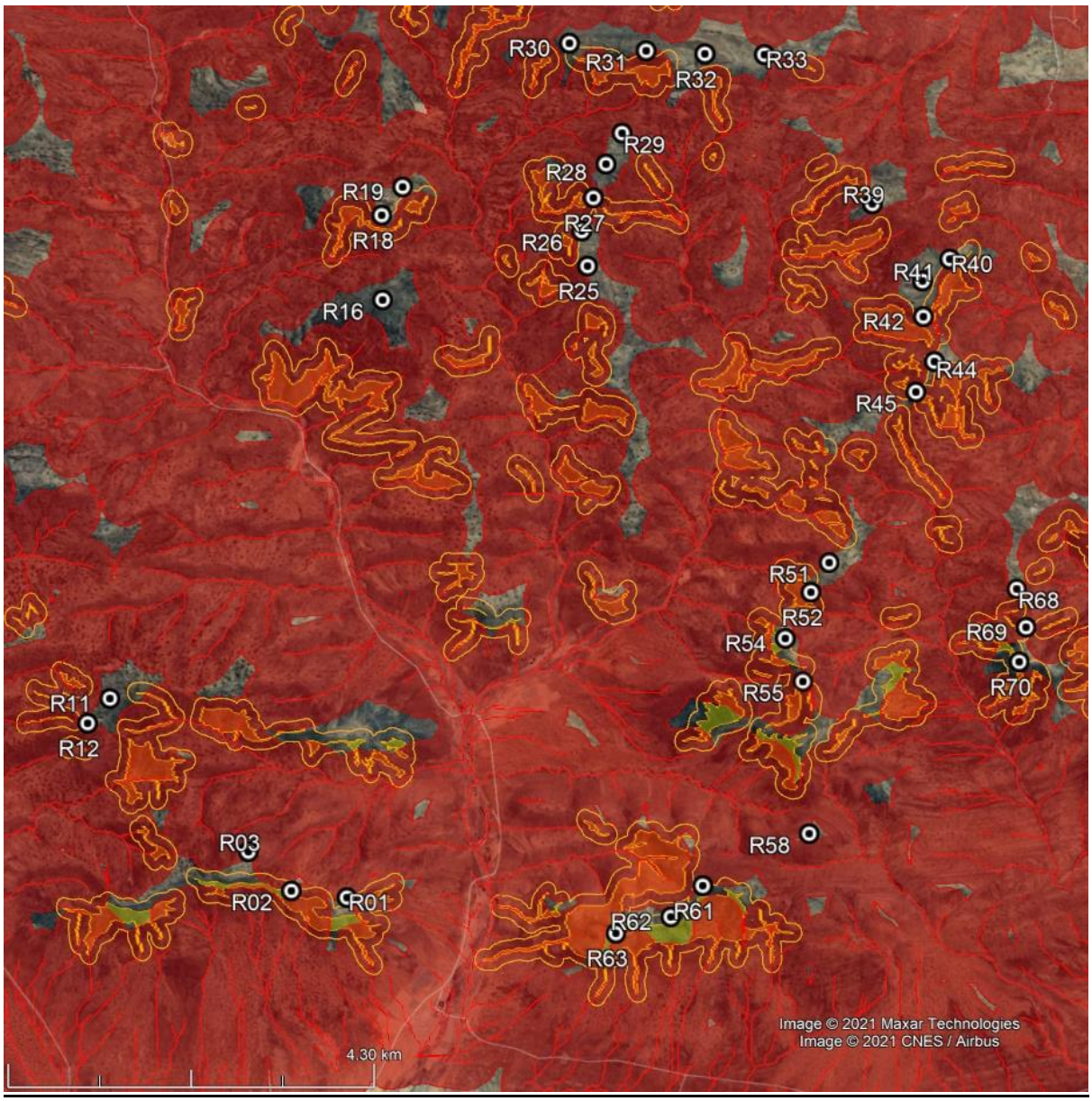

Figure 5-3: Bat sensitivity map of the Rietkloof site with proposed turbine layout (Animalia, 2021).

5.6.5 SURFACE WATER AND WETLAND

Dr Brian Colloty, an aquatic ecology specialist from Environmental and Scientific Assessment Services, undertook the 2016 and 2019 aquatic impact assessments. Subsequently, FEN Consulting has been appointed to review the previous studies and consider the effect of the proposed amendments on the previous impacts with reference to the final layout. The outcome of the assessment is outlined in a 2021 Specialist Statement included in **Appendix I.**

It can be concluded that the updated November 2021 layout of the proposed Rietkloof WEF does not pose any additional negative impacts to any watercourses, but rather will generate less impacts and pose less of a risk than the originally assessed layout to the watercourses of the region.

The new location of the construction camp included in the final layout is located below/partially within the 100m GN509 Zone of Regulation. Due to the ecological sensitivity and importance of the watercourses, the upgrading

of access roads directly adjacent to watercourses and upgrading of watercourse crossings by means of installing formal through flow structure poses a moderate risk significance to the watercourses, with the application of the recommended mitigation measures. As a result authorisation by means of a Water Use Licence Application (WULA) in terms of Sections 21 (c) and (i) of the National Water Act, 1998 (Act No. 36 of 1998) must be obtained from the DWS for the proposed development prior to the commencement of any works. It can be noted that this application has already been submitted to the DWS.

The overall appraisal is that the proposed amendments, will thus not alter the previous surface water impacts as long as mitigation measures as detailed and required in the EMPr (**Appendix P**) are implemented. Given the above outcome, this Rietkloof Amendment is supported in terms of aquatic impacts.

5.6.6 NOISE

Dr Brett Williams, a noise specialist from SafeTech, undertook the original 2016 noise impact assessment. Subsequently, the specialist has been appointed to review the previous studies and consider the effect of the proposed amendments on the previous impacts with reference to the final layout. The outcome of the assessment is outlined in a 2021 Specialist Statement included in **Appendix J.**

The revised turbine specification (an increase in hub height and rotor diameter) necessitated the remodelling of noise impacts of the final layout (47 turbine locations). The 29 noise sensitive areas that were identified during the 2016 noise assessment were reused in the 2021 remodelling of the noise impact.

The wind turbine generator that was modelled is described in **Table 5-9.** This turbine was chosen to represent the worst-case scenario of a wind turbine up to 7.5 MW and 125m hub height. This model of turbine was chosen as it has published noise data in the WindPro catalogue of wind turbines. Furthermore, the noise data has been tested according to the methods described in IEC 61400-11 and are thus traceable. The modelled hub height (125m). A higher hub height of 180m rotor diameter could influence the results negatively (i.e. the noise could be heard at a further distance from the source), although given the low noise impact this is unlikely.

If a lower final hub height is chosen, the noise impacts could be reduced. Furthermore, if the final turbine that is chosen has a maximum sound power level that is similar or lower than the turbine modelled as part of the 2021 Specialist Statement, it can be assumed that the noise impacts will be similar or lower, irrespective of the turbine manufacturer.

Table 5-9: Turbine Specifications Used in the Noise Model

Manufacturer	ENERCON*
Type / Version	E-126
Rated Power	7.5MW
Rotor Diameter	180m
Tower	Tubular
Grid Connection	50 Hz
Maximum Sound Power Level	108.5dB
Hub Height	125m
*Sound Power Level dB(A) reference to 1pW from WindPro 3.2 Catalogue	
*The specifications of this turbine model were used as the data is available in WindPro. This does not bind the applicant to this specific model, and any turbine model with similar turbine specifications. An equal or lower maximum sound power level would be acceptable for the site.	

The sound power levels at lower and higher wind speeds as stated above were interpolated from the published data. **The actual sound power levels may thus be less than those stated when the final turbine is selected. The levels used in the re-modelling are thus a worst-case scenario.**

The masking effect of the wind noise will mitigate the impact. The results are based on NO wind noise masking, which in reality rarely occurs. The maximum noise rating limit as per SANS 10103:2008 is 35dB(A) at night and 45 dB(A) for day/night i.e., 24 hours. The cumulative effect of developing both the Brandvalley and Rietkloof Wind Energy Projects was modelled using the ENERCON E-126 7500. The maximum noise rating limit as per the DFFE EA (dated 23 November 2016 and DEA Ref: 14/12/16/3/3/2/89) is 45 dB(A).

The modelling results (outlined in Table 5 of the Noise Specialist Statement included in **Appendix J**) indicate that the EA Limit of 45 dB(A) will **not be exceeded at any of the noise sensitive areas**. The impact rating of low (with and without mitigation) as included in the previous noise impact assessments remain valid.

The overall appraisal is that the proposed amendments, will thus not alter the previous noise impacts as long as mitigation measures as detailed and required in the EMPr (**Appendix P**) are implemented. Given the above outcome, this Rietkloof Amendment is supported in terms of noise impacts.

5.6.7 VISUAL

Mr Michael Johnson, a visual specialist from EOH Coastal and Environmental Services, undertook the 2016 and 2019 visual impact assessments. Subsequently, SiVEST has been appointed to review the previous studies and consider the effect of the proposed amendments on the previous impacts with reference to the final layout. The outcome of the assessment is outlined in a 2021 Specialist Statement included in **Appendix K.**

The proposed new turbine specifications would allow for a hub height of 125m and a rotor diameter of 180m, resulting in a maximum height at the blade tip of 215m, between 10m and 25m higher than the height currently authorised. While an increase in the height of the turbines would increase the visibility of the WEF, a GIS-based visibility analysis has shown that, in this instance the increase in visibility would be marginal. Visual impacts resulting from the larger turbines would be greatest within a 1km to 2km radius, from where the increased height of the structure would be most noticeable. However, no potentially sensitive receptors were identified within 2km of a wind turbine placement, and the larger turbines as proposed are not expected to increase the impacts experienced by any of the identified receptors.

In addition, **the change in the turbine specifications being proposed for the Rietkloof WEF has allowed for a reduction in the number of turbines required for the facility. Hence, a total of thirteen (13) turbines have now been removed from the original 60 turbine layout and Rietkloof has advised that the number of turbines is likely to be further reduced to up to 34. Fewer turbines will result in a slight reduction in the area from which the turbines will be visible (viewshed) there will be less visual clutter in the landscape resulting in a slight reduction in the cumulative impacts experienced.**

In light of this, and the limited human habitation and relatively remote location of the proposed Rietkloof WEF, the proposed changes in the turbine specifications are not expected to result in any increased visual impacts on the identified receptors, or affect any additional receptors in the surrounding area.

The overall appraisal is that the proposed amendments, will thus not alter the previous visual impacts as long as mitigation measures as detailed and required in the EMPr (**Appendix P**) are implemented. Given the above outcome, this Rietkloof Amendment is supported in terms of visual impacts.

5.6.8 TRAFFIC AND TRANSPORT

Mr Hermanus Steyn, a traffic specialist from Aurecon South Africa, undertook the 2016 and 2019 traffic and transport impact assessment. Subsequently, JG Africa has been appointed to review the previous studies and consider the effect of the proposed amendments on the previous impacts with reference to the final layout. The outcome of the assessment is outlined in a 2021 Specialist Statement included in **Appendix L**

Due to the nature of the proposed amendments, a reassessment of the previous impacts was not deemed necessary. Therefore, the traffic and transport impact ratings previously reported remain relevant without any change as long as mitigation measures as detailed and required in the EMPr (**Appendix P**) are implemented. As such, this Rietkloof Amendment is supported in terms of the traffic and transport impacts.

5.6.9 HERITAGE

Mrs Celeste Booth, a heritage specialist from Booth Heritage Consulting, undertook the 2016 and 2019 heritage impact assessments. Dr John Almond, a palaeontology specialist from Natura Viva, undertook the 2016 and 2019 palaeontology impact assessments. Subsequently, CTS Heritage has been appointed to review the previous studies (both heritage and palaeontological) and consider the effect of the proposed amendments on the previous impacts

with reference to the final layout. The outcome of the assessment is outlined in a 2021 Specialist Statement included in **Appendix M.**

The specialist confirmed that there would be no change in the impact on the archaeological, palaeontological and other tangible heritage resources identified during the previous assessments conducted with regards to any of the proposed amendments.

The amendments to the positioning of the infrastructure (i.e. construction camp) would also have no negative impact on the archaeological, palaeontological and other tangible heritage as the area had been assessed during the previous study.

As such the heritage impact ratings remain relevant without any change as long as mitigation measures as detailed and required in the EMPr (**Appendix P**) are implemented. Given the above outcome, this Rietkloof Amendment is supported in terms of heritage impacts.

5.6.10 SOCIO- ECONOMIC

Mr Tony Barbour, a social specialist from Tony Barbour Environmental Consulting and Research, undertook the 2016 and 2019 socio-economic impact assessments. Subsequently, the specialist has been appointed to review the previous studies (both heritage and palaeontological) and consider the effect of the proposed amendments on the previous impacts with reference to the final layout. The outcome of the assessment is outlined in a 2021 Specialist Statement included in **Appendix N.**

Based on a review of changes associated with the amendment there are no changes to the significance ratings reflected in the Rietkloof WEF SIA (2016). In this regard the:

- The reduction on the number of wind turbines and the increase in hub height and rotor diameter of the wind turbines associated with the Part II Amendment will not change the nature or significance of any of the social impacts previously assessed as part of the SIA (2016) for the Rietkloof WEF.
- The mitigation measures for the construction of the Rietkloof WEF listed in the SIA (2016) are appropriate for Part II Amendment. No additional management outcomes or mitigation measures in terms of social impacts are therefore required

It can be concluded that the findings of the previous assessments therefore remain unchanged and valid subject to the implementation of the recommended mitigation measures and management actions contained in the EMPr (**Appendix P**).

Given the above outcome, this Rietkloof Amendment is supported in terms of socio-economic impacts.

5.6.11 GEOTECHNICAL INPUT

In September 2021 JG Afrika undertook a desk top geotechnical assessment for the proposed Rietkloof Wind Energy Facility in the Western Cape (**Appendix O**). The aim of the study was to assess the geological and geotechnical conditions across the study area, and to provide information on the topographical feasibility of the site for the proposed project, as well identify the geological and geotechnical influences and/or constraints on the construction structures.

According to the study the slope gradient map indicates that the turbines are located on gentle slope. The turbines are flanked by steep slopes on the southern portion of the site. The substation and the construction camp site are located on flat terrain. The majority of the internal access roads are characterised by flat to gentle slope along the lower lying valley areas and steep terrain characterises the slope sides.

It is however noted that based on previous investigations in the greater Roggeveld area, the site is anticipated to be underlain by shallow bedrock conditions. Competent, founding conditions can be anticipated in shallow, slightly weathered bedrock conditions, which will have to be assessed during the detailed investigation prior to construction.

Recommendations, in terms of foundations types for the various infrastructure associated with the project are included in report for consideration by the Developer. No fatal flaws from a preliminary geotechnical perspective

were identified during the desktop study. The impact will be restricted to the removal and displacement of soil, boulders and bedrock. The potential impact of the development on the terrain and geological environment will be the increased potential for soil erosion, caused by construction activities and the removal of vegetation. Additionally, the aesthetic impact is considered significant due to the required extensive earthworks associated with the project to meet the required horizontal and vertical alignments and curvatures for roads., so the aesthetic impact is significant.

The anticipated impact of the proposed project will have negative effects from a geotechnical perspective and will require mitigation. The mitigation measures suggested in the study have been incorporated into this EMPr.

Areas with steep slope inclinations are not recommended for the energy developments due to the earthworks requirements and the potential need for advanced foundations. The proposed site is considered suitable for the proposed development, provided that the recommendations presented in the geotechnical desktop study report are adhered to and which need to be verified by more detailed geotechnical investigations during detailed design.

It can be concluded that the findings of the previous assessments in terms of geology, therefore remain unchanged and valid subject to the implementation of the recommended mitigation measures and management actions contained in the EMPr (**Appendix P**). Given the above outcome, this Rietkloof Amendment is supported in terms of socio-economic impacts.

5.7 2019 SENSITIVITY MAP

The overall environmental sensitivity of the site is show in **Figure 5-4** and below based on the final layout inclusive of the new construction camp location.

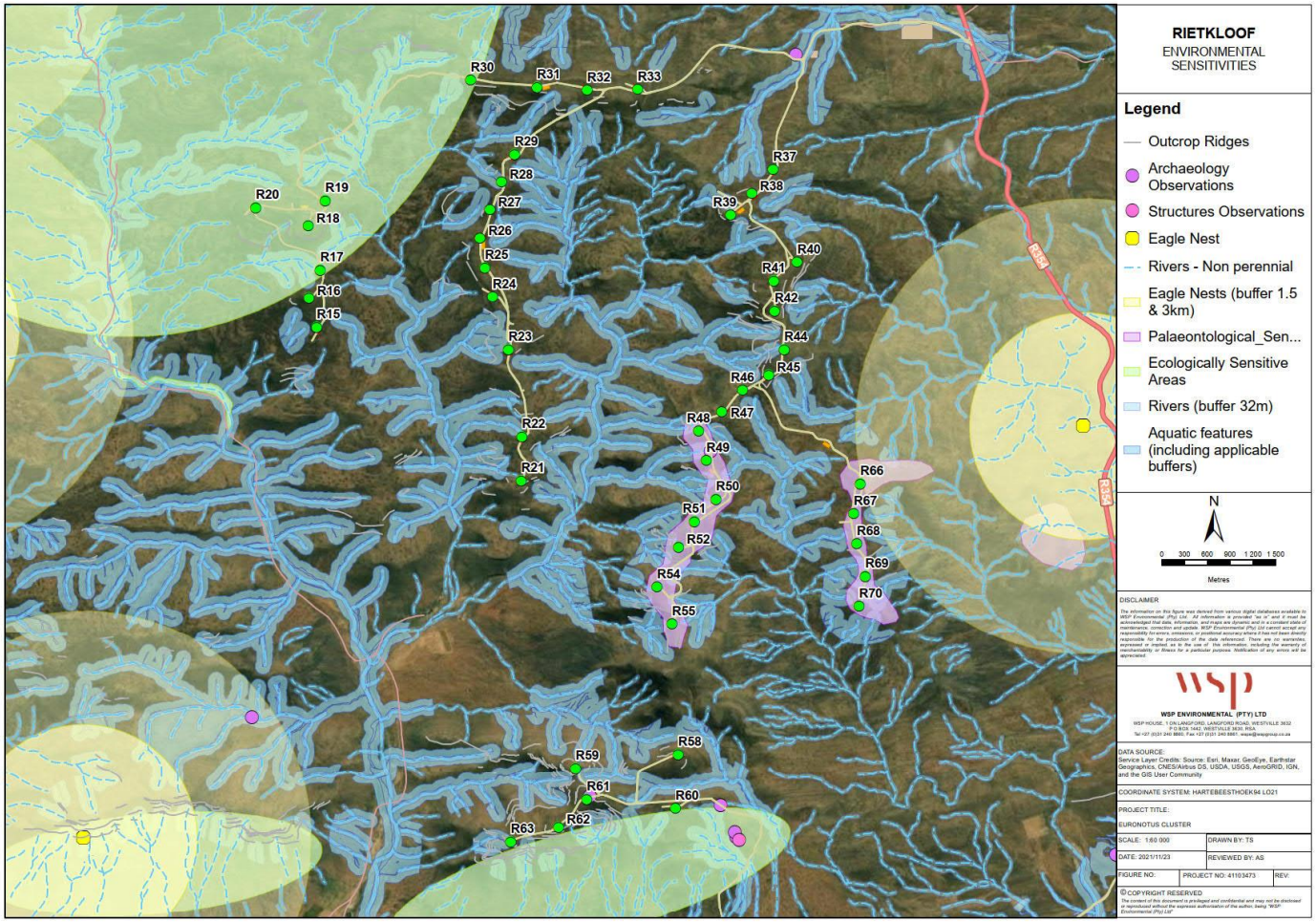

Figure 5-4: Environmental sensitivity map overlain over the Final Riekloof WEF Layout

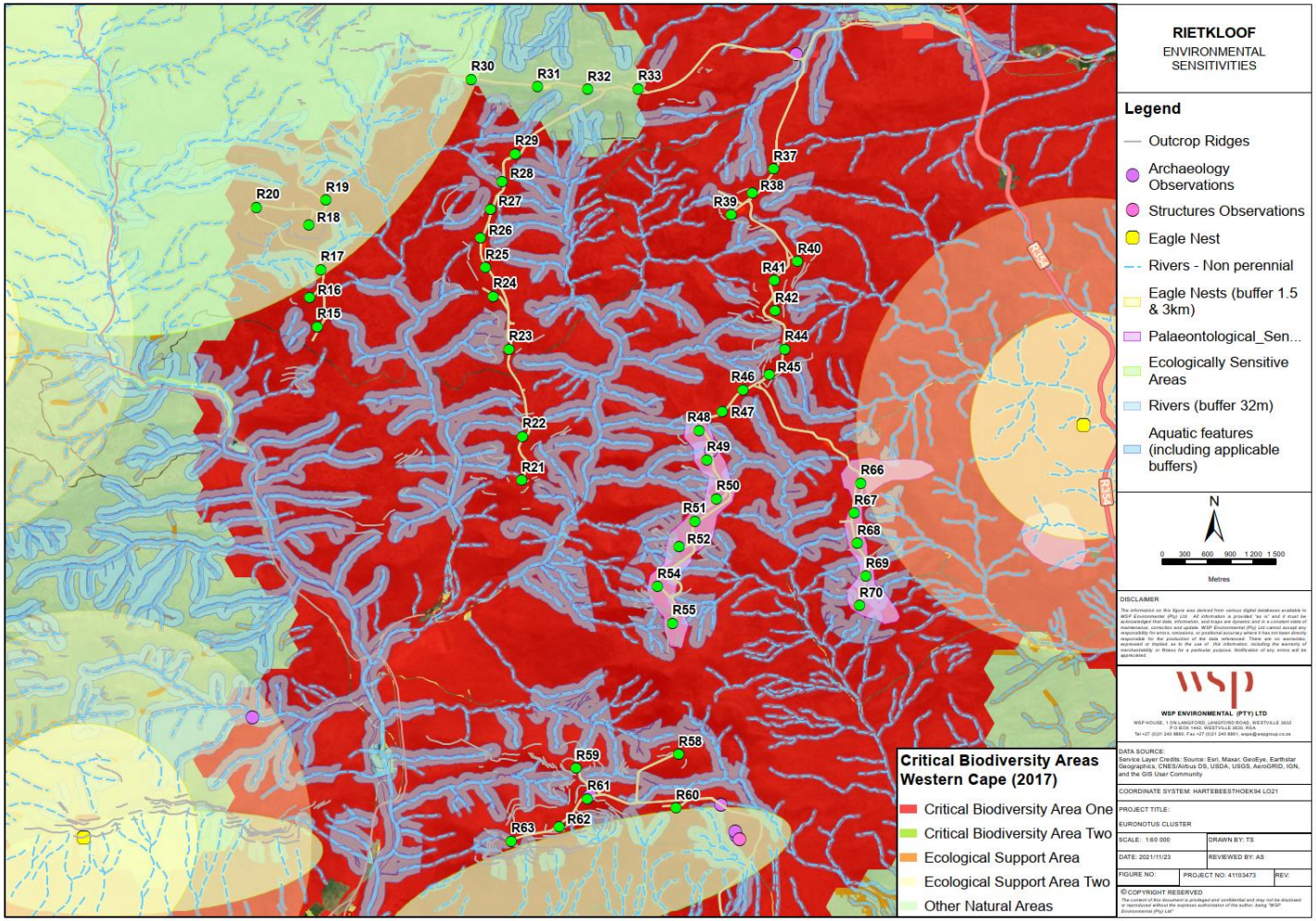

Figure 5-5: Environmental sensitivity map overlain over the Final Riekloof WEF Layout (inclusive of CBAs)

6 ENVIRONMENTAL MANAGEMENT PROGRAMME

The EMPr was originally complied by EOH as part of the 2016 EIA was subsequently updated by WSP in 2019 in accordance with the 2014 EIA Regulations, as amended.

In line with Condition 16 of the EA, the previous EMPr was not approved and required amendment. The EMPr has been amended, as required, taking the final layout and relevant specialist walkdowns into consideration and is appended to this report (**Appendix P**) for approval.

It must be noted that the outline below takes into account the limited additional mitigation measures required as a result of the proposed amendments as well as the additional mitigation measures proposed as a result of the final layout.

It must be noted that the layout included in the final EMPr is considered a worst-case final layout with 47 turbines. It is however likely that once the turbine manufacturer has been confirmed, the layout will drop to a maximum of 34 turbines which will also allow for the micro-siting / removal of the turbines identified by the Bat specialist (i.e. R27, R37 and R49).

6.1 AGRICULTURE, SOIL AND LAND USE CAPACITY ADDITIONAL OR AMENDED MITIGATION MEASURES

No additional or amended mitigation measures have been recommended by the specialist. The existing mitigation measures included within the EMPr remain valid. No changes have therefore been made to the EMPr as a result of the Agriculture, Soil and Land Use 2021 findings.

6.2 BIODIVERSITY ADDITIONAL OR AMENDED MITIGATION MEASURES

No additional or amended mitigation measures have been recommended by the specialist with regards to the proposed amendments.

Several Species of Conservation Concern (SCC), in addition to those identified during the initial ecological assessment, were identified during the 2021 walkdown. These species are classified as either Critically rare (CR), Vulnerable (VU), Near Threatened (NT), Rare (R), or Endangered (E), The identified floral species of conservation concern include Antimima androsacea (CR), Antimima loganii (VU), Brunsvigia josephinae (VU), Euryops sulcatus (VU), Geissorhiza karooica (NT), Indigofera hantamensis (R), Lotononis venosa (E), Romulea eburne (VU), Romulea hallii (VU), Romulea syringodeoflora (NT).

Sensitive areas identified either during the initial ecological assessment and/or observed during the 2021 walkdown include the following (a summary of which is detailed in Table 9 of the Terrestrial Ecology & Biodiversity Walkdown Report (included in Appendix I of the EMPr – **Appendix P**):

- Rocky Outcrops and Ridges on slopes and mountain peaks;
- Rivers, seeps, wetlands and pans; and
- Sub-population of flagged species of conservation concern.

The applicable recommendations made based on the findings of the walkdown, have been included the amended EMPr (**Appendix P**). These recommendations include *inter alia*:

- A flora and fauna search and rescue (relocation) must be undertaken before commencement of vegetation clearing. A more comprehensive list of species for which permits will be required is provided in Appendix 1:

Plant Species of Conservation Concern (Red listed) and Appendix 2: Flora Protected in Terms of Provincial of the Ordinance(s) of the Ecology & Biodiversity Walkdown Report (included in Appendix I of the EMPr)

- Wetland Pan adjacent to western camp site to be demarcated and fenced as no go area.
- The southern access road passes through area having a high diversity in comparison to surrounding area of influence with several species present that are not recorded elsewhere. Care to be taken with access road alignment to minimise loss and species search and rescue is required.
- The access road passes through and along a well-defined watercourse with large *Brunsvigia josephinae* population (19) present within the riparian vegetation and directly adjacent to the watercourse. The access road should be aligned as far from watercourse as possible to reduce requirement for relocation of protected species
- Turbines 55 and 68 are positioned adjacent to rocky outcrops; minor layout adjustments for these turbines footprints should be implemented during final surveying and pegging out to avoid outcrops as far as possible.
- The species *Antimima androsacea* was found to occur at low densities throughout a broader area as indicated; due care to be taken during construction to avoid impact to this species.
- Disturbance or removal of any protected fauna and flora species is prohibited prior to a permit approval from the relevant authorities.
- Where roads pass right next to major water bodies, provisions must be made for fauna such as toads to pass under the roads by using culverts or similar structures.

6.3 AVIFAUNA ADDITIONAL OR AMENDED MITIGATION MEASURES

The final layout takes cognisance of the previous avian assessments as well as the results of the additional pre-construction monitoring. Turbine positions R01 to R14, have been removed from the original layout, to reduce environmental impacts and risk to Verreaux's Eagles. Furthermore, this will avoid construction of significant lengths of site roads adjacent to watercourses. Therefore, all the turbines requiring repositioning have been removed from the final layout. The below summary table only includes findings associated with the remaining 47 turbines and therefore the findings applicable to the removed turbines have not been included in the table.

To mitigate potential impacts on the Black Harrier, the following is recommended that in the event the client has the opportunity to drop additional turbines from the authorised layout in the future, that they do so from the northern ridge, that is: turbines R30, R31, R32, R33. If this compromises the energy yield of the wind farm, then these four turbines can remain, but they should be mitigated with striped-blade mitigation and/or automated shut down on demand (SDOD), or observer-lead SDOD.

In an effort to further mitigate any impacts to priority birds, the avian re-assessment recommends the following:

(i) Erecting the turbines with red-, or black-blade, mitigation (painted before installation) to increase turbine visibility for the eagles (May et al. 2020).

(ii) The advantages of this mitigation are that:

(a) raptors see best in colour;

(b) 'signal red' is already approved by South African Civil Aviation for towers and other tall structures;

(c) blade manufacturers such as Siemens and Vestas already produce painted blades in Europe; and

(d) this mitigation has no running costs.

www.engineeringnews.co.za/article/opinion-black-blade-mitigation-a-new-and-exciting-mitigation-for-wind-turbines-to-reduce-impacts-to-birds-of-prey-2020-10-09/

(iii) Should painted blades be ineffective, additional mitigations should include automatic shut-down on demand with systems such as DT-Bird and Multi-seco.

The applicable recommendations made based on the findings of the walkdown, have been included the amended EMPr (**Appendix P**).

6.4 BAT ADDITIONAL OR AMENDED MITIGATION MEASURES

The assessed final layout is acceptable from a bat sensitivity perspective if all conditions of the EA are complied with, an operational bat impact monitoring study is conducted for a minimum of 2 years, and Turbines R27, R37 and R49 are relocated outside of the high bat sensitivity buffer (in the event that a turbine with a 180m rotor diameter is utilised).

This additional measure has been incorporated into the updated EMPr (**Appendix P**).

6.5 SURFACE WATER AND WETLAND ADDITIONAL OR AMENDED MITIGATION MEASURES

No additional or amended mitigation measures have been recommended by the specialist with regards to the proposed amendments.

The freshwater ecological assessment undertaken as part of the water use authorisation process indicated that a large drainage network of ephemeral watercourses, associated with the Groot, Roggeveld, Muishond and Wilgebos Rivers were identified as well as various Channelled Valley Bottom Wetlands. Majority of these watercourses are considered to be in a largely natural to moderately modified ecological condition and of high ecological importance and sensitivity.

Findings of the assessment indicate that only the access road crossings will directly impact on the watercourses. All other proposed infrastructure will be located outside of the delineated extent of the watercourses; however, some will be located within the 100 m regulated area. Seven crane pads and the construction camp are located below/partially within the 100m GN509 Zone of Regulation (ZoR). Crane pads associated with turbines 28 and 69 are located the closest to watercourses (approximately 36 m and 26 m respectively). The proposed overhead collector powerlines will directly traverse watercourses, however, as far as feasible, all powerline support structures will be located at least 32 m from the delineated extent.

It was determined that the proposed development will have a Negative Moderate to Low risk significance on the watercourses with implementation of mitigation measures. A direct negative risk to the watercourses is expected due to the upgrading of watercourse crossings and the upgrading of an extensive section of access road located adjacent to a channelled valley bottom wetland and the Groot River.

Based on the findings of the assessment, no fatal flaws from a freshwater resource management point of view were identified. With adherence to cogent, well-conceived and ecologically sensitive construction plans and the implementation of the mitigation measures provided in freshwater ecological assessment report (**Appendix I**) and provided that general good construction practice is adhered to, from a freshwater conservation perspective the proposed development is considered acceptable.

The mitigation measures recommended in **Appendix I** have been incorporated into the updated EMPr (**Appendix P**).

6.6 NOISE ADDITIONAL OR AMENDED MITIGATION MEASURES

No additional or amended mitigation measures have been recommended by the specialist. The mitigation measures included within the EMPr remain valid. No changes have therefore been made to the EMPr as a result of the Noise Report 2021findings.

6.7 VISUAL ADDITIONAL OR AMENDED MITIGATION MEASURES

No additional or amended mitigation measures have been recommended by the specialist. The mitigation measures included within the EMPr remain valid. No changes have therefore been made to the EMPr as a result of the 2021 findings.

6.8 TRAFFIC AND TRANSPORT ADDITIONAL OR AMENDED MITIGATION MEASURES

No additional or amended mitigation measures have been recommended by the specialist. The mitigation measures included within the EMPr remain valid.

A Traffic Management Plan (TMP) was however developed and has been included as Appendix C of the updated EMPr (**Appendix P**)

6.9 HERITAGE AND PALAEONTOLOGICAL ADDITIONAL OR AMENDED MITIGATION MEASURES

No additional or amended mitigation measures have been recommended by the specialists with regards to the proposed amendments.

The mitigation measures included within the EMPr remain valid. However, recommendations made based on the findings of the walkdown, have been included the amended EMPr (**Appendix P**). These recommendations include *inter alia*:

- The upgrading of the road be limited to the existing internal road. It is expected that scatters of stone artefacts would be uncovered during the upgrade and construction of the access road. This has been established by observance and recording the extent of stone artefacts occurring along this route.
- Consultation with local Western Cape archaeological repositories (generally museums and universities) can be made to determine whether it would be necessary for to make a collection of artefacts.
- Pre-construction survey by a professional paleontologist of two small areas in the eastern portion (Waterford Formation outcrop close to Kranskop) of the WEF project area to record, sample and safeguard any significant well-preserved fossil wood or other fossil material here.

6.10 SOCIO- ECONOMIC ADDITIONAL OR AMENDED MITIGATION MEASURES

No additional or amended mitigation measures have been recommended by the specialist with regards to the proposed amendments. The mitigation measures included within the EMPr remain valid.

A number of interviewees highlighted the positive impacts that the ongoing construction of WEFs in the Komsberg REDZ have on the local economy in the area. These include the benefits that the construction activities have on the local hospitality, retail and services sector. It is noted that early, effective and on-going communication was highlighted as a key issue that needs to be implemented and/or addressed to manage impacts associated with the WEFs. Other impacts highlighted by the landowners affected by existing WEFs were attributed to extensive land clearance, damage to farm infrastructure such as gates and a concern on crime and security (although not directly linked to the WEFs). Other issues of concern included potential increases of Sexually Transmitted Diseases, unplanned pregnancies, reduced availability of accommodation for visitors and limited benefits to the

local farming community. Impact on sense of place and visual impacts were also highlighted as potential issues for consideration and subsequent mitigation.

Based on the above, a number of recommendations have been made for inclusion in the planning and implementation of construction related activities, to minimise social impacts, impact footprint and avoid unnecessary disturbances. These measures have been incorporated into the EMPr (**Appendix P**) and include:

- A Grievance Mechanism in included in Section9.13 of the updated EMPr (**Appendix P**) and should be implemented as part of the Stakeholder Engagement Plan.
- Stakeholder engagement processes should be put in place to make sure that all interested and affected party have buy in in the process which will be designed and followed for employment and local procurement opportunities.
- Early, clear, and effective communication with affected and adjacent landowners prior to and throughout the construction phase is critical. A detailed Stakeholder Engagement Plan should be developed prior to the implementation of the construction phase and should be developed in conjunction with the affected landowners and key stakeholders, such as local landowners, the local farming association and municipality.
- A Monitoring Committee (MC) should be established as part of the Stakeholder Engagement Plan. The MC should be made up of representatives from the affected landowners and key stakeholders, such as the local farmers, the local farming association, municipality and proponent.
- Procedures and timeframes should be identified for reporting and addressing incidents, such as damage to gates and fences etc. Based on the comments from the affected landowners, it would appear that the role played by the ECO involved in the existing projects can be improved. The ECO and CLP should liaise closely with each other throughout the construction phase.
- A Community Liaison Person (CLP) should be appointed by the proponent at the outset of the construction phase. Ideally this person should be from the local community and his or her role should be to ensure that the Stakeholder Engagement Plan is implemented on the ground. The CLP should be involved in the development of the Stakeholder Engagement Plan and not merely appointed to implement the Plan. In this way he or she will have met with and engaged with the affected landowners and key stakeholders prior to the start of the construction phase and will have a good understanding of farming activities in the area and how these may be impacted by the construction related activities.
- The approach to responding to and addressing complaints or concerns should be sympathetic, open, transparent, and constructive. This would go a long way in maintaining good relations. In this regard the Stakeholder Engagement Plan should be informed by a set of engagement principles that support this approach.
- Contractor training must include making workers aware of the consequences of their actions and the impact that they may have on farming activities. A Contractor Training programme should be developed and implemented prior to the commencement of the construction phase. The programme should inform contract workers of the requirements of the Stakeholder Engagement Plan and Environmental Management Plan and their roles and responsibilities in terms of these plans.

6.11 GEOTECHNICAL ADDITIONAL OR AMENDED MITIGATION MEASURES

The mitigation measures recommended by the geotechnical specialist were noted to already be included in the EMPr, however, any recommendations over and above those already included have been added in the EMPr as recommended. These include:

- Construction of temporary berms and drainage channels to divert surface water; and
- Minimize earthworks and fills.

These measures have been incorporated into the EMPr (**Appendix P**).

6.12 CONCLUSION

The 2019 EMPr has been updated as required in Condition 16 of the EA. The updates are based on the authorised infrastructure, proposed amendments and 2021 specialist recommendation and is appended to this report (**Appendix P**). Please note that this is the **final EMPs which is being submitted to DFFE for approval in line with Condition 16 of the EA.**

7 PUBLIC PARTICIPATION

7.1 PURPOSE OF PUBLIC PARTICIPATION PROCESS

Public participation is understood to be a series of inclusive and culturally appropriate interactions aimed at providing I&APs with opportunities to express their views, so that these can be considered and incorporated into the decision-making process, if required. Effective public participation requires the prior disclosure of relevant and adequate project information to enable I&APs to understand the risks, impacts, and opportunities of the project.

The following was undertaken as part of the Public Participation Process for the amendment:

Basic reasons why the involve public should get involved in the Amendment Process:

- The environment is held in public trust, therefore use of environmental resources is everyone's concern – in line with the Constitution.
- Public participation is proper, fair conduct in public decision-making activities. Focus on vulnerable and disadvantaged person and offer equitable participation due to historical issues.
- A way to ensure that projects meet the citizens' needs and are suitable to the affected public.
- Finally, the final decision is informed when local knowledge and values are included and when expert knowledge is publicly examined.

7.1.1 OBJECTIVES

The objectives of the public participation process can be summarised as follows:

- Identify relevant individuals, organisations and communities who may be interested in or affected by the authorised project;
- Clearly outline the scope of the project, including the scale and nature of the existing and proposed activities;
- Identify viable project alternatives that will assist the relevant authorities in making an informed decision;
- Identify shortcomings and gaps in existing information;
- Identify key concerns, raised by I&APs;
- Highlight the potential for environmental impacts, whether positive or negative; and
- To inform and provide the public with information and an understanding of the project, issues and solutions.

7.1.2 WHAT IS AN INTERESTED AND AFFECTED PARTY?

An I&AP is defined as any person, group of persons or organisations interested in or affected by an activity, and any organ of state that may have jurisdiction over any aspect of the activity.

RIGHTS, ROLES AND RESPONSIBILITIES OF THE I&AP

In terms of Chapter 6, specifically Section 43(1) of the NEMA EIA Regulations 2014, as amended registered I&APs have the right to bring to the attention of the CA any issues that they believe may be of significance to the consideration of the application. The rights of I&AP are qualified by certain obligations, namely:

- I&APs must ensure that their comments are submitted within the timeframes that have been approved by the Department of Environmental Affairs (DEA), or within any extension of a timeframe agreed by the applicant, Environmental Assessment Practitioner (EAP) or CA; and
- Disclose to the EAP any direct business, financial, personal or other interest that they might have in the approval or refusal of the application.

In order to participate effectively, I&APs should:

- Become involved in the process as early as possible;
- Register as a I&AP;
- Advise the EAP of other I&APs who should be consulted;
- Follow the process once it has been concluded;
- Read the material provided and actively seek to understand the issues involved;
- Give timeous responses to correspondence;
- Be respectful and courteous towards other I&APs;
- Refrain from making subjective, unfounded or ill-informed statements; and
- Recognise that the process is confined to issues that are directly relevant to the application

7.2 COVID-19 SCENARIO

Given the spread of the COVID-19 virus to various parts of the world, including to South Africa, on 15 March 2020, in terms of Section 27 of the Disaster Management Act (Act 57 of 2002) (DMA), President Cyril Ramaphosa declared a national state of disaster in South Africa. From 01 May 2020 the Alert Level has been adjusted according to the risk-adjusted strategy, as and when required reflecting the level of risk associated with Covid-19 infections throughout the country.

Due to the restrictions imposed by the various Alert Levels, restrictions were imposed on public participation associated with COVID–19 on 31 March 2020, which meant that the PPP required by Regulation 41 of the EIA Regulations (2014, as amended) could not reasonably be adhered to. On 05 June 2020, new Directions were issued by the Minister of Forestry, Fisheries and the Environment, "*Directions Regarding Measures to Address, Prevent and Combat the Spread of COVID-19 relating to National Environmental Management Permits and Licences*", in respect of the undertaking and administration of EIA and related processes during Lockdown Alert Level 3. The Directions of 05 June 2020 repealed the Directions of 31 March 2020. On 09 September 2020, new Directions were again issued by the Minister of Forestry, Fisheries and the Environment in respect of the undertaking and administration of EIA and related processes during Lockdown Alert Level 2 and lower.

It is now possible to proceed with public participation in accordance with the "*Directions Regarding Measures to Address, Prevent and Combat the Spread of COVID-19 relating to National Environmental Management Permits and Licences*" (GN 650) published on 05 June 2020 and the "*Directions Regarding Measures to Address, Prevent and Combat the Spread of COVID-19 relating to National Environmental Management Permits and Licences*" (GN 970) published on 09 September 2020.

Annexure 2 of the Directions require that "*At all times it must be ensured that reasonable opportunity is provided for public participation and that all administrative actions are reasonable. While the COVID-19 pandemic is a unique circumstance, the specific circumstances in each case must be considered in order to determine what will be reasonable. If in the circumstances of a particular case reasonable alternative methods to give notice to potential interested and affected parties are available, then the relevant competent authority can be approached for an agreement in this regard as provided for in regulation 41(2)(e) of the Environmental Impact Assessment Regulations*."

In line with the Directions, a public participation plan was compiled and presented to DFFE for approval at the outset of the assessment process (as detailed in Section 7.3). Due to the risks associated with COVID-19, as far as possible, the focus of the PPP has shifted from physical public engagements to digital and electronic communication (including e-mail and websites). No provision has been made for public or focus group meetings due to current COVID-19 restrictions as well as past experience with projects of this nature. Should significant interest be obtained in this Project, a public meeting will be included as part of the PPP, should COVID-19 protocols and regulations permit.

7.3 APPROVED PUBLIC PARTICIPATION PLAN

As part of the pre-application consultation meeting held with DFFE on 08 October 2021, the proposed plan for public participation was discussed. A public participation plan was subsequently submitted to DFFE, along with the meeting minutes, for approval on **16 November 2021**. The meeting minutes and public participation plan were approved by DFFE on **19 November 2021**. **Table 7-1** below outlines the approved Public Participation Plan for the Part 2 Amendment Process for the Rietkloof WEF.

Table 7-1: Approved Public Participation Plan

SUMMARY OF PPP REQUIREMENT (GNR 326 OF EIA REGULATIONS)	PLAN/ACTIVITIES
41(2) The person conducting a PPP must give notice to all potential I&APs by- (a) fixing a notice board at a place conspicuous to and accessible by the public at the boundary, on the fence or along the corridor of— (i) the site where the activity to which the application or proposed application relates is or is to be undertaken; and (ii) any alternative site;	— Placement of six (6) site notices (in English and Afrikaans) at appropriate locations on site and in the surrounding area. — This will include the boundary/access road to the WEFs, as well as additional public places within the project area, such as grocery stores, municipalities, and/or local public libraries.
(b) giving written notice, in any of the manners provided for in section 47D of the Act, to— (i) the occupiers of the site and, if the proponent or applicant is not the owner or person in control of the site on which the activity is to be undertaken, the owner or person in control of the site where the activity is or is to be undertaken and to any alternative site where the activity is to be undertaken; (ii) owners, persons in control of, and occupiers of land adjacent to the site where the activity is or is to be undertaken and to any alternative site where the activity is to be undertaken; (iii) the municipal councillor of the ward in which the site and alternative site is situated and any organisation of ratepayers that represent the community in the area; (iv) the municipality which has jurisdiction in the area; (v) any organ of state having jurisdiction in respect of any aspect of the activity; and (vi) any other party as required by the competent authority;	— Written notification (in English and Afrikaans) will be sent to owners and occupiers on or adjacent to the WEFs, municipality ward councillors, local and district municipalities, and relevant state departments. — General communication (written notification) with stakeholders (public and government departments/authorities) throughout the Part 2 and EMPr amendment processes. — Stakeholders will be added to the database on request as the project progresses.
(c) placing an advertisement in— (i) one local newspaper; or (ii) any official Gazette that is published specifically for the purpose of providing public notice of applications or other submissions made in terms of these Regulations;	An advert will be published in one provincial (Cape Times) and one local newspaper (Die Courier) (in English and Afrikaans), formally announcing the commencement of the Part 2 Amendment Applications and associated EMPr amendment processes, requesting stakeholders to register their interest in the project, and informing them of the release of the Draft Part 2 Amendment Reports and amended EMPrs for public review and comment.

SUMMARY OF PPP REQUIREMENT (GNR 326 OF EIA REGULATIONS)	PLAN/ACTIVITIES
(d) placing an advertisement in at least one provincial newspaper or national newspaper, if the activity has or may have an impact that extends beyond the boundaries of the metropolitan or district municipality in which it is or will be undertaken	
(e) using reasonable alternative methods, as agreed to by the competent authority, in those instances where a person is desirous of but unable to participate in the process due to— (i) illiteracy; (ii) disability; or (iii) any other disadvantage.	— The existing databases for the Rietkloof WEF and Brandvalley WEF projects will be verified and updated for the purposes of the Part 2 Amendment and EMPr amendment processes. As part of the verification process, existing I&APs will be contacted telephonically and asked to confirm their preferred method of communication. The POPI act will also be put into consideration to confirm all the relevant POPI requirements for the database. — The relevant ward councillors will be contacted to ensure that community-based organisations are aware of the Project and can assist in distributing and communicating relevant Project information to community members. — No public meetings or focus group discussions have been provided for.
(42) A proponent or applicant must ensure the opening and maintenance of a register of interested and affected parties and submit such a register to the competent authority,	— Stakeholders with a potential interest in the Project will be identified at the outset of the Project. As noted above, the existing databases will be verified and updated for the purposes of the Part 2 Amendment and EMPr amendment processes. The database will also be updated to include landowners and other stakeholders relevant to the Projects. — All stakeholders identified will be registered on the project stakeholder database, and the database will be maintained throughout the BA and EMPr amendment processes.
(43) & (44) Registered Interested and affected parties (I&APs) must be given 30 days to comment on the draft Report	The Draft Amendment Reports and amended EMPrs will be made available to all stakeholders for a 30-day comment period. Strict adherence to all COVID-19 protocols and regulations as well as best practice measures will be ensured throughout PPP. As a result, the Draft BAR and amended EMPrs will be made available to stakeholders as follows: — Matjiesfontein Community Hall; — Laingsburg Public Library; — From WSP on request; and — Online on the WSP website At the time of disclosure, WSP will confirm the relevant COVID-19 protocols and regulations in place and *will confirm with the local libraries as to whether they are open and able to accept documents for public review prior to placement.* A Comment and Response Report (CRR) will be generated for inclusion in Final Amendment Reports and amended EMPrs for consideration by the competent authority.

7.4 PUBLIC PARTICIPATION TO DATE

7.4.1 PRE-APPLICATION CONSULTATION

A pre-application meeting was held on 08 October 2021 with the DFFE in order to discuss the proposed Project. The minutes of this meeting as well as the proof of the approval of the Public Participation Plan are included in **Appendix Q-1**.

7.4.2 IDENTIFICATION OF KEY STAKEHOLDERS

Section 41 of the EIA Regulations (2014, as amended) states that written notices must be given to identified stakeholders as outlined in Error! Not a valid bookmark self-reference..

Relevant authorities (Organs of State) have been automatically registered as I&APs. In accordance with the EIA Regulations, 2014 (as amended), all other persons must request in writing to be placed on the register, submit written comments, or attend meetings to be registered as stakeholders, and included in future communication regarding the Project.

Table 7-2: Interested and Affected Parties Table

NEMA REQUIREMENT	DISCUSSION
(i) the owner or person in control of that land if the applicant is not the owner or person in control of the land	The project activity is located on 12 portions of privately-owned land. All 12 the landowners have been included on the I&AP database.
(ii) the occupiers of the site where the activity is or is to be undertaken or to any alternative site where the activity is to be undertaken	All landowners have been contacted to confirm whether there are any occupiers on the land portions. Occupiers have been included on the database (**Appendix Q-2**).
(iii) owners and occupiers of land adjacent to the site where the activity is or is to be undertaken or to any alternative site where the activity is to be undertaken	Adjacent landowner and occupier details were collected, and the landowners were notified via a project notification letter via email and/or SMS notification.
(iv) the municipal councillor of the ward in which the site or alternative site is situated and any organisation of ratepayers that represent the community in the area	Ward Councillors of Ward 1 and 12 (Laingsburg Local Municipality) have been included on the I&AP database.
(v) the municipality which has jurisdiction in the area	The Laingsburg Local Municipality which is located in the Central Karoo District Municipality have been included on the I&AP database.
(vi) any organ of state having jurisdiction in respect of any aspect of the activity	The DFFE has been identified as the competent authority. The Western Cape Department Environmental Affairs and Development Planning (DEA&DP) is included on the I&AP database as a commenting authority.
(vii) any other party as required by the competent authority.	All tiers of government, namely, national, provincial, local government and parastatals have been included on the I&AP database. Inclusive of: – Department of Energy

NEMA REQUIREMENT	DISCUSSION
	— Department of Rural Development and Land Reform — Department of Agriculture, Forestry and Fisheries — Department of Water and Sanitation — Department of Mineral Resources — Department of Public Works — DFFE: Biodiversity and Conservation — Western Cape Department of Transport and Public Works — Breede-Gouritz Catchment Management Agency — CapeNature — Western Cape Department of Environmental Affairs and Development Planning — Square Kilometre Array South Africa — Eskom — South African Civil Aviation Authority — Astronomy Management Authority — South African Astronomical Observatory — Laingsburg Local Municipality — Central Karoo District Municipality — Heritage Western Cape

Appendix Q-2 provides a list of stakeholders registered on the Project database. The stakeholder database will be updated throughout the Amendment process.

7.4.3 NOTIFICATION PROCEDURES

DIRECT NOTIFICATION

Notification of the proposed Amendment Application will be issued to potential Stakeholders, via direct correspondence (i.e. site notices and e-mail) on **09 December 2021**. The notification letter to be circulated is included in **Appendix Q-3** of this report. Proof of notification will be included in the Final Assessment Report (FAR).

ADVERTISEMENT

Notification of the proposed Project was issued to the general public via an advertisement on **09 and 10 December 2021**. The purpose of the advertisement was to notify the general public of the proposed application and provide an opportunity to register on the Project database and provide input into the process. A copy of the advertisement is included as **Appendix Q-4.** The advertisement publication details are provided in **Table 7-3**. Proof of placement of the advertisements will be included in the FAR.

Table 7-3: Dates on which the advert was published

NEWSPAPER	PUBLICATION DATE
The Cape Times	**09 December 2021**
Die Courier	**10 December 2021**

SITE NOTICES

In accordance with GNR 326 Section 41(2)(a-b) site notices were developed (see **Appendix Q-5**) and placed at four (4) strategic points along the boundary of the WEF that are accessible by the public, as well as in public places within the town of Laingsburg and Matjiesfontein. Site notices were placed on site on **03 December 2021**.

Proof of display and the mapped locations of the site notice placements along the route will be included in the Final BAR.

AVAILABILITY OF THE DRAFT ASSESSMENT REPORT

The DAR will be placed on public review for a period of 30 days from **09 December 2021** to **31 January 2022**, at the venues as follows:

- Hard copy: Laingsburg library (Van Riebeeck street, Laingsburg);
- Hard copy: Matjiesfontein community centre (Matjiesfontein); and
- Electronic Version: WSP's website - to be accessed by the public via the following link: https://www.wsp.com/en-ZA/services/public-documents

7.4.4 STAKEHOLDER REGISTRATION

All stakeholders that either call in or send written correspondence, such as emails, fax, or post, to the EAP will be added to the database and their comments and/or queries will be responded to.

7.5 COMMENTS RECEIVED

No comments have been received to date. Comments received from registered stakeholders will be captured and responded to within the comments and response report, which will form part of the FAR.

8 ENVIRONMENTAL IMPACT STATEMENT

This DAR is submitted in support of the application for amendment of the EA issued to Rietkloof for the operation of the 183MW WEF near Matjiesfontein in the Western Cape. Due to the fact that the proposed amendments constitute a change of scope, a Part 2 Amendment Process in terms of Regulation 31 of the EIA Regulations (2014), as amended is required.

WSP were appointed to undertake the amendment process in terms of Regulation 31 and 32 of the EIA Regulations (2014), as amended. Ashlea Strong acts in the capacity as independent EAP. In addition, various specialists were appointed to assess the proposed amendments to the EA.

The advantages and disadvantages for the proposed amendments are outlined in the table below. It can be noted that no disadvantages have been identified**.**

ASPECT TO BE AMENDED	PROPOSED AMENDMENT	ADVANTAGES/ DISADVANTAGES
Technical Aspects		
Number of Turbines	Up to 47 of up to 7MW capacity each	Wind turbine generators are constantly under development to increase the potential energy output per wind turbine. These amendments are proposed in order to increase the efficiency of the facility and consequently the economic competitiveness thereof, in turn reducing the electricity tariffs to be charged by the facility which would benefit electricity consumers at large. The increase in generation capacity per turbine to a maximum of up to 7MW is as a result of the advances in turbine technology. As confirmed by the specialists and EAP, there are no disadvantages associated with the amendment of the EA in terms of generation capacity per turbine. The benefit of increasing the generation capacity of each turbine results in the need to utilise fewer turbine positions than original authorised.
Area Occupied by Each Turbine and hard standing area	Each turbine with a foundation of up to 25m in diameter and up to 4m in depth, compacted hard standing areas of between 0.35ha and 0.45ha each	The increase in generation capacity per turbine to a maximum of up to 7MW will result in a reduced number of turbine positions being utilised on site. The exact orientation, position and dimensions of the hardstands will be subject to minor change pending the final selection of the TSA. The increased maximum allowable size of the hard standing will allow for these changes should they be required. Furthermore, the increased area will still fall well within the total authorised buildable area of approximately 126.6ha.

ASPECT TO BE AMENDED	PROPOSED AMENDMENT	ADVANTAGES/ DISADVANTAGES
Turbine Hub Height	All Turbines up to 125m	Wind shear refers to the variation in wind speed over vertical distances. Installing wind turbine generators with a higher hub height will increase the overall performance of the WEF. This amendment will increase the economic competitiveness of the WEF, in turn reducing the electricity tariffs to be charged by the facility which would benefit electricity consumers at large. As confirmed by the specialists and EAP, there are no disadvantages associated with the amendment of the EA in terms of the turbine hub height.
Rotor Diameter	All Turbines up to 180m	The power output of a wind turbine is directly related to the swept area of the blades. The larger the diameter of swept area / rotor diameter of the blades, the more power it is capable of extracting from the wind. By potentially installing wind turbine generators with a larger rotor diameter, it will increase the energy output per turbine. This will result in increasing the overall performance of the WEF. This amendment will increase the economic competitiveness of the WEF, in turn reducing the electricity tariffs to be charged by the facility which would benefit electricity consumers at large. As confirmed by the specialists and EAP, there are no disadvantages associated with the amendment of the EA in terms of the rotor diameter
Turbine Foundation Area	Each turbine foundation will be 25m diameter x 4m deep for each of the 47 turbines, up to ~3.75ha in total	The increase in generation capacity per turbine to a maximum of up to 7MW will result in a reduced number of turbine positions being utilised on site. As confirmed by the specialists and EAP, there are no disadvantages associated with the amendment of the EA in terms of reducing the number of turbine positions on site.

ASPECT TO BE AMENDED	PROPOSED AMENDMENT	ADVANTAGES/ DISADVANTAGES
Construction Camp Location	In terms of the final layout the construction camp has been moved to existing batching plant previously utilised by Roggeveld WEF.	The construction camp has been shifted to the existing batching plant area previously utilised by the Roggeveld WEF. The new location has been included in the final layout and falls within the project boundary that has been authorised and therefore will not be increasing the already assessed development footprint. The location of construction camp, was identified by considering the following aspects: — Landowner preference and support; — Ease of access to R354; — Selecting a flat area requiring little to no blasting; — An area where a potion of the site is currently disturbed, thus limiting the need for additional vegetation clearance; and — The proposed new location will move the construction camp from an agricultural/undisturbed area to a more disturbed area, that has previously been used by the Roggeveld WEF As confirmed by the specialists and EAP, there are no disadvantages associated with the amendment of the EA in terms of moving the construction camp.
Width of Internal Roads	No more than 12m wide (turns will have a radius of up to 55m), 200m wide corridor along the access road and internal access roads	The final layout makes provision for roads with a maximum width of between 9 and 12m to ensure suitable access to site for all required vehicles and equipment. This is well within the 200m wide corridor that has been authorised in the EA. As confirmed by the specialists and EAP, there are no disadvantages associated with the amendment of the EA in terms of increasing the maximum allowable road width.
Condition 14.2	Remove condition.	The need for a Conservation Management Plan, detailing specific management of an as yet undefined Conservation Area, with oversight by a Conservation Forum is deemed impractical. In addition, Rietkloof does not have an agreement with the landowners for the management of or access to the remaining property extent outside of the access roads and turbine platforms, as such they will be unable to implement a Conservation Management Plan. A full professional opinion outlining the recommendation for removal is included in **Appendix C.**

ASPECT TO BE AMENDED	PROPOSED AMENDMENT	ADVANTAGES/ DISADVANTAGES
Condition 36	Remove condition.	In terms of the final layout the construction camp has been moved to the existing construction camp being utilised by Roggeveld WEF. The area outlined in this condition is not considered an optimal position for the construction camp based on the following: The ecology report shows that the area south and between turbines 31 and 32 is a very-high ecological sensitivity area. The area to the north and between turbines 31 and 32 is very steep and would require excessive amounts of blasting to establish a flat area large enough for the construction camp
Condition 135	Remove condition.	The need for a Conservation Management Plan, detailing specific management of an as yet undefined Conservation Area, with oversight by a Conservation Forum is deemed impractical. In addition, Rietkloof does not have an agreement with the landowners for the management of or access to the remaining property extent outside of the access roads and turbine platforms, as such they will be unable to implement a Conservation Management Plan. A full professional opinion outlining the recommendation for removal is included in **Appendix C**.
Administrative Aspects		
Contact details of the Holder of the EA	Matteo Brambilla 14th floor, Pier Place, Heerengracht Street, Cape Town, 8001 Tel: 021 418 3940 Email: m.logan@redrocket.energy	We request to amend the contact details of the Holder of the EA. This amendment request is administrative in nature and therefore no disadvantages are foreseen.
Amend the name of the Holder of the EA	Rietkloof Wind Farm (RF) (Pty) Ltd	We request to amend the name of the Holder of the EA. This amendment request is administrative in nature and therefore no disadvantages are foreseen.

All of the specialists concluded that the proposed amendments are acceptable with no additional mitigation required.

Additional mitigations as a result of the amendments and as a result of the specialist walkdowns of the Final layout have been included in the updated EMPr.

The updated EMPr is appended to this report (**Appendix P**). The updated EMPr, appended to this report **is the final EMPs which is being submitted to DFFE for approval in line with Condition 16 of the EA. It must be noted that the layout included in the final EMPr is considered a worst-case final layout with 47 turbines. It is however likely that once the turbine manufacturer has been confirmed, the layout will drop to a maximum of 34 turbines which will also allow for the micro-siting / removal of the turbines identified by the Bat specialist (i.e. R27, R37 and R49).**

It can be confirmed that public participation in being undertaken in terms of Chapter 6 of the NEMA EIA Regulations 2014, as amended.

This report was provided to potentially interested and affected parties for a 30-day review period from **09 December 2021** to **31 January 2022**. All comments received will be used to update the FAR which will be submitted to the competent authority, the DFFE. The DFFE is tasked with making a decision on the amendment application.

Based on the findings of the specialists, the EAP recommends that DFFE amends the EA as follows:

ASPECT TO BE AMENDED	AUTHORISED	PROPOSED AMENDMENT	EA REFERENCE
Technical Aspects			
Number of Turbines	Up to 60	Up to 47 of up to 7MW capacity each	• Page 9 of EA (page 11 in full document) ○ Row 6 of the table outlining the infrastructure associated with the facility
Area Occupied by Each Turbine and hard standing area	Each turbine with a foundation of up to 25m in diameter and up to 4m in depth, compacted hard standing areas of 0.35ha each	Each turbine with a foundation of up to 25m in diameter and up to 4m in depth, compacted hard standing areas of 0.45ha each	• Page 9 of EA (page 11 in full document) ○ Row 3 of the table outlining the infrastructure associated with the facility
Turbine Hub Height	• Turbine positions (18,19.20,3,32.33,37,38.39): hub height of up to120m • Turbine positions (all other numbers- the 51 turbines): A hub height of 125m	All Turbines up to 125m	• Page 9 of EA (page 11 in full document) ○ Row 7 of the table outlining the infrastructure associated with the facility
Rotor Diameter	• Turbine positions (18,19,20,3,32,33,37,38,39): up to 140m • Positions of other 51 turbines a rotor diameter of up to 160m	All Turbines up to 180m	• Page 9 of EA (page 11 in full document) ○ Row 8 of the table outlining the infrastructure associated with the facility
Turbine Foundation Area	Each turbine foundation will be 25m diameter x 4m deep for each of the 60 turbines, approximately ~3.75ha.	Each turbine foundation will be 25m diameter x 4m deep for each of the 47 turbines, up to ~3.75ha in total	• Page 10 of EA (page 12 in full document) ○ Row 9 of the table outlining the infrastructure associated with the facility
Construction Camp Location	Construction Camp Alternative 10	In terms of the final layout the construction camp has been moved to existing batching plant previously utilised by Roggeveld WEF.	• Page 10 of EA (page 12 in full document) ○ Row 13 of the table outlining the infrastructure associated with the facility
Width of Internal Roads	No more than 9m wide (turns will have a radius of up to 55m), 200m wide corridor along the access road and internal access roads	No more than 12m wide (turns will have a radius of up to 55m), 200m wide corridor along the access road and internal access roads	• Page 10 of EA (page 12 in full document) ○ Row 14 of the table outlining the infrastructure associated with the facility

ASPECT TO BE AMENDED	AUTHORISED	PROPOSED AMENDMENT	EA REFERENCE
Condition 14.2	The EMPr amendment must include the following: 14.2. The Final Conservation Management Plan.	Remove condition.	• Condition 14.2 (page 14 of EA – page 16 in full document)
Condition 36	The location of the construction camp, as well as the internal substation must be relocated and placed in proximity to turbine 31 and turbine 32.	Remove condition.	• Condition 36 (page 17 of EA – page 19 in full document)
Condition 135	Rietkloof must engage with Cape Nature and provide them with the opportunity to provide input to the final Conservation Management Plan, which must be submitted to the DEA along with the final EMPr for approval, prior to the commencement of construction	Remove condition.	• Condition 135 (page 26 of EA – page 28 in full document)
Administrative Aspects			
Contact details of the Holder of the EA	Dr Kilian Hagemann 125 Buitengracht Street 5th Floor CAPE TOWN 8001 Tel: 0213000613 Email: rietkloof@g?ene[gies.oom	Matteo Brambilla 14th floor, Pier Place, Heerengracht Street, Cape Town, 8001 Tel: 021 418 3940 Email: m.logan@redrocket.energy	• Page 1 – Contact Details ○ Page 2 of EA (Page 4 of full document) – Contact Details
Amend the Holder of the EA	Rietkloof Wind Farm (Pty) Ltd	Rietkloof Wind Farm (RF) (Pty) Ltd	• Page 1 – Contact Details ○ Page 2 of EA (Page 4 of full document) – Contact Details

APPENDIX

A

EAP CV

APPENDIX

B EAP DECLARATION OF INTERESTED

APPENDIX

C

OPINION REGARDING THE REMOVAL OF THE CONSERVATION MANAGEMENT PLAN

APPENDIX

D

SPECIALIST DECLARATIONS

APPENDIX

E AGRICULTURAL STATEMENT

APPENDIX

F ECOLOGY STATEMENT

APPENDIX

G

AVIFAUNA STATEMENT

APPENDIX

H

BAT STATEMENT

APPENDIX

I

AQUATIC STATEMENT

APPENDIX

J NOISE STATEMENT

APPENDIX

K VISUAL STATEMENT

APPENDIX

L TRAFFIC STATEMENT

APPENDIX

M HERITAGE STATEMENT

APPENDIX

N SOCIAL STATEMENT

APPENDIX

O GEOTECHNICAL STATEMENT

APPENDIX

P AMENDED ENVIRONMENTAL MANAGEMENT PROGRAMME

APPENDIX

Q

PUBLIC PARTICIPATION

APPENDIX

Q-1 *PRE-APPLICATION MEETING MINUTES AND APPROVED PUBLIC PARTICIPATION PLAN*

APPENDIX

Q-2 *I&AP DATABASE*

APPENDIX

Q-3 *NOTIFICATION LETTER*

APPENDIX

Q-4 ADVERT

APPENDIX

Q-5 *SITE NOTICE*