

**MULILO DE AAR 2 SOUTH WEF:
 PART 1 ENVIRONMENTAL AUTHORISATION AMENDMENT
 AND
 AGRICULTURAL ASSESSMENT OF FINAL LAYOUT PLAN AND EMPr**

1 PART 1 AMENDMENT

The following amendments are proposed to the existing Environmental Authorisation for the Mulilo De Aar 2 South Wind Energy Facility (WEF) (DFFE Ref: 12/12/20/2463/1).

Item	Currently authorised	Proposed amendment	Approximate construction footprint (Ha)	Approximate final footprint (Ha)
Number of Turbines	25-61	<u>Up to 26</u>	N/A (refer to hardstands below)	N/A (refer to hardstands below)
Internal Roads	4m wide	New roads: <u>6m wide</u> (i.e. 10m working width during construction, rehabilitated to 6 m width during operations). (V-drains will run on either side of the road.)	40	24
		Upgrade sections of an existing private farm road from estimated 4 m to <u>6 m</u> final width during operations.	2.4	0.8
Foundations	<i>"The foundation size would be</i>	Foundations up to <u>maximum 24 m</u>	N/A (included in hardstands)	N/A (included in hardstands)

Item	Currently authorised	Proposed amendment	Approximate construction footprint (Ha)	Approximate final footprint (Ha)
	<p>18.4m in diameter that narrows up to 10.6m at the surface (the visible portion) with a depth of 3.5 once completed”.</p>	<p><u>diameter at lowest point and up to 12 m</u> diameter at surface</p>	<p>footprint)</p>	<p>footprint)</p>
<p>Hardstands</p>	<p>“A permanent hard standing made of compacted gravel and approximately 50 m x 40 m would be constructed adjacent to each turbine location for the crane”. (i.e. 0.2 Ha per WTG)</p>	<p>Permanent hard standing made of compacted gravel <u>with approximate footprint up to 0.47 Ha per WTG</u>, adjacent to and surrounding each WTG.</p> <p>Total hard stand footprint for WEF up to maximum 12.2 Ha.</p>	<p>12.2</p>	<p>12.2</p>
<p>IPP Substation, Control and O&M buildings</p>	<p>Substation: Currently authorised: 2ha.</p> <p>EA states “the proposed substations and associated control buildings would have a footprint of approx. 200 x 100m”.</p>	<p>No change to footprint.</p> <p>Amendment to co-ordinates in EA (to align with location of substation in Final Layout Plan)</p> <p>Centre co-ordinate of the onsite IPP substation is: 30°35'25.02"S; 24°16'52.93"E</p>	<p>2</p>	<p>2</p>
<p>Temporary Laydown</p>	<p>Total footprint of</p>	<p>No change to footprint.</p>	<p>24</p>	<p>0</p>

Item	Currently authorised	Proposed amendment	Approximate construction footprint (Ha)	Approximate final footprint (Ha)
Areas	approximately 24ha for the three construction laydown areas.	<ul style="list-style-type: none"> • Construction office/yard. • WTG component laydown area • On-site concrete batching plant 		
Internal Reticulation	22kV	<u>33kV</u>		

In addition, the following amendments to the Environmental Authorisation are also proposed:

- Removal of the MW designation per turbine (generation capacity per turbine)
- **Hub height from ground level:** Adding the words “up to”, i.e. from the authorised “120m”, to “up to 120m”.
- **Rotor diameter:** Adding the words “up to”, i.e. from the authorised “165m”, to “up to 165m”.
- Add an erroneously omitted Listed Activity into the EA. The Applicant wishes to include Activity 15 of GN R. 545 (Listing Notice 2) into the EA (which relates to the physical alteration and transformation 20ha or more). The physical alteration of more than 20ha of the land was assessed in detail as part of the 2012 EIA process and subsequent Part 2 EA amendment process in 2015 for the project, however, this particular listed activity was erroneously omitted from the Application.
- Addition of Portion 7 of Farm Vendussie Kuil No. 165 into the EA (given that a section of a proposed road would cross the corner of Portion 7 of Farm No. 165, which is currently not included in the EA). This property was included and assessed in the combined EIA process and reporting for the De Aar 2 South WEF and De Aar 2 North WEF in 2012- 2013, and was included in the Final Layout that was recently assessed (2022) by all specialists for the update of the EMP and Final Layout Plan process that is currently in progress).
- Extend the validity period of the EA. The EA currently expires on 01 March 2023 and the Applicant wishes to extend this by 2 years.

The relevant, baseline agricultural environment has not changed since the original assessments and is still limited primarily by aridity. The footprint of the development is entirely on land of very

low agricultural potential. It is rated predominantly as low agricultural sensitivity by the National Environmental Screening Tool. There are small parts that are rated as medium, but in reality the agricultural production potential of these medium areas is the same as the low areas. The agricultural sensitivity of the site is verified as low because the climate data (low rainfall of approximately 290 mm per annum and high evaporation of approximately 1,450 mm per annum (Schulze, 2009)) proves the area to be arid, and therefore of very limited land capability.

Agricultural impacts were found by the previous assessments to be inconsequential because of the very low agricultural production potential of the receiving environment and the fact that wind energy facilities only impact a very small proportion of the land. This has not changed. The proposed amendments will in no way change the nature or significance of the agricultural impact as previously assessed. 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 EMP. The agricultural impact of the amended project will therefore remain unchanged and be identical to the impact that was assessed in the original specialist assessment report. The impact was assessed as inconsequential.

DFFE compliance for this project requires quantifying the impact of all renewable energy applications within a 30 km radius. There are a total of 20 renewable energy project applications within 30km of the proposed site. These are listed in Appendix 1 of this report.

All of these projects have the same agricultural impacts in an almost identical agricultural environment, and therefore the same mitigation measures apply to all.

In quantifying the cumulative impact, the area of land taken out of grazing as a result of the 20 developments (total generation capacity of 2,244 MW) will amount to a total of approximately 4,514 hectares. This is calculated using the industry standards of 2.5 and 0.3 hectares per megawatt for solar and wind energy generation respectively, as per the Department of Environmental Affairs (DEA) Phase 1 Wind and Solar Strategic Environmental Assessment (SEA) (2015). As a proportion of the total area within a 30 km radius (approximately 282,700 ha), this amounts to 1.60% of the surface area. That is within an acceptable limit in terms of loss of low potential agricultural land which is only suitable for grazing, of which there is no scarcity in the country. This is particularly so when considered within the context of the following point.

In order for South Africa to develop the renewable energy generation that it urgently needs, agriculturally zoned land will need to be used for renewable energy generation. It is far more preferable to incur a cumulative loss of agricultural land in a region such as the one being assessed, which has no crop production potential, and low grazing capacity, than to lose agricultural land that has a higher potential, and that is much scarcer, to renewable energy development elsewhere

in the country.

Due to all of the factors discussed above, it is recommended that the amendments be approved from an agricultural impact point of view.

2 AGRICULTURAL ASSESSMENT OF LAYOUT AND EMPR

The purpose of this specialist input is to assess the acceptability of the WEF final layout, and to assess the adequacy of the EMPr, both in terms of the project's impacts on agricultural resources.

The objective and focus of an agricultural assessment for Environmental Authorisation is to assess whether or not a proposed development will have an unacceptable agricultural impact or not, and based on this, to make a recommendation on whether it should be approved or not. Agricultural impacts are done in terms of the protocol for the specialist assessment and minimum report content requirements of environmental impacts on agricultural resources. The aim of this protocol is to preserve valuable agricultural land for agricultural production. Valuable land is considered to be predominantly scarce arable land that is suitable for viable crop production. However, all land that is excluded from agricultural use by this development is entirely unsuitable for crop production due predominantly to very significant climate constraints and is therefore not considered preservation-worthy as agricultural production land.

An agricultural impact is a change to the future production potential of land. The significance of the agricultural impact is directly proportional to the extent of the change in production potential.

In a low agricultural potential environment like the one being assessed, the exact locations of all the different infrastructure has no bearing on the significance of the agricultural impacts. That significance is only a function of the size of the total footprint of the facility that excludes agricultural land use and the agricultural production potential of that footprint. Agricultural production potential is uniformly low across the project area and changes in layout therefore have no effect on the significance of agricultural impact.

The significance of all potential agricultural impacts of the Mulilo De Aar 2 South WEF is mitigated by two factors:

- the fact that the proposed site is on land of extremely limited agricultural potential that is only viable for low density grazing and is not therefore a scarce agricultural resource in South Africa.
- The agricultural footprint of the wind farm (including all associated infrastructure and roads), that results in the exclusion of land from potential grazing, is insignificantly small in relation to the surface area of the affected farms. All agricultural activities will be able to continue unaffectedly on all parts of the farms other than the insignificantly small development footprint for the duration of and after the project.

A map of the facility layout, overlaid on the screening tool sensitivity, is given in Figure 1.

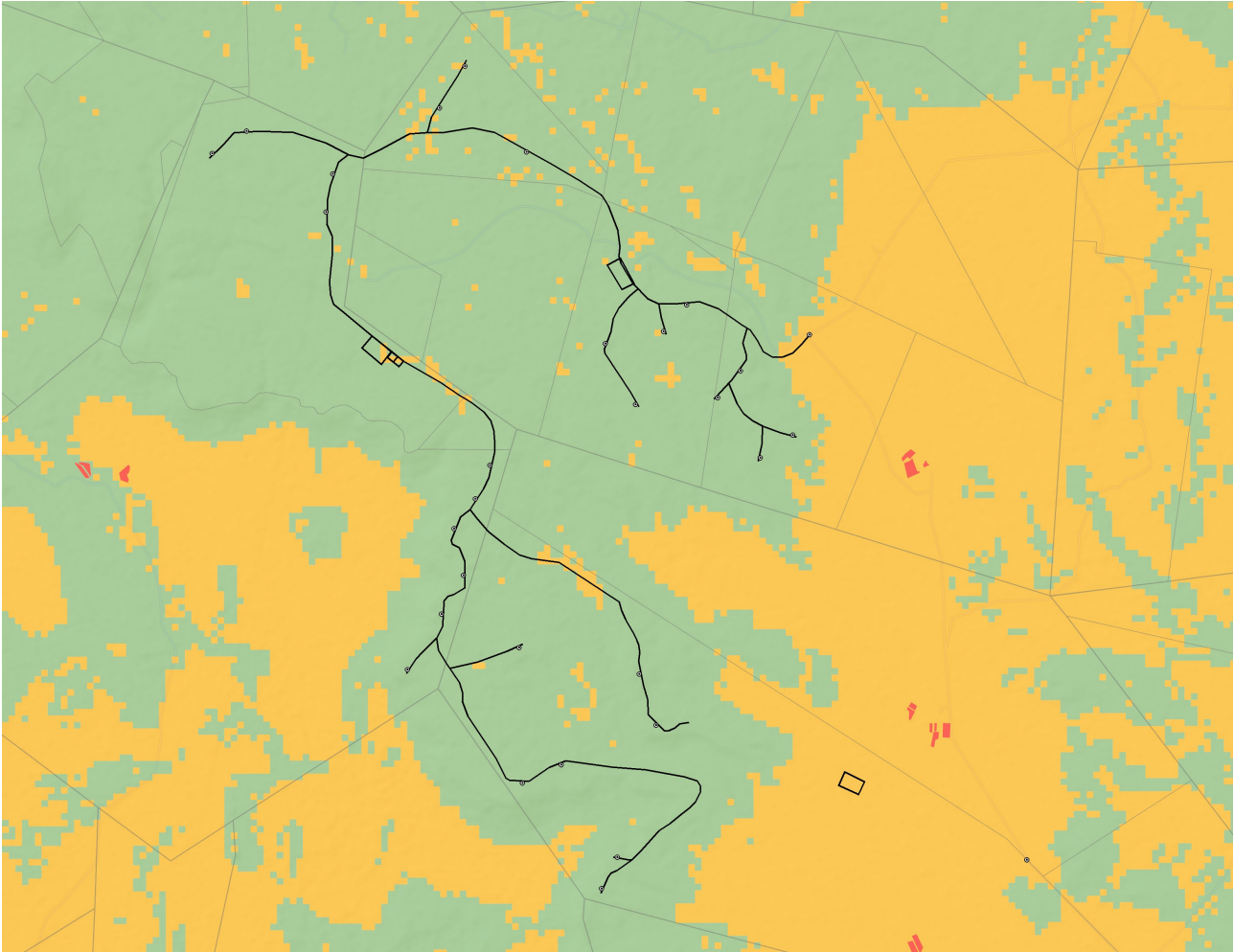


Figure 1. The proposed layout of the facility overlaid on agricultural sensitivity, as given by the screening tool (green = low; yellow = medium; red = high; dark red = very high).

The layout is entirely on land of very low agricultural potential. It is rated predominantly as low agricultural sensitivity by the screening tool. There are small parts that are rated as medium, but in reality the agricultural production potential of these medium areas is the same as the low areas. The facility entirely avoids any land that is rated more than medium sensitivity, and that would therefore be a higher priority in terms of its conservation for agricultural land use. The final layout is therefore acceptable in terms of agricultural impact and it does not require that any changes or additions be made to the EMPr.

Johann Lanz (Pr. Sci. Nat.)
28 November 2022

APPENDIX 1: SPECIALIST CURRICULUM VITAE

Johann Lanz Curriculum Vitae

Education

M.Sc. (Environmental Geochemistry)	University of Cape Town	1996 - 1997
B.Sc. Agriculture (Soil Science, Chemistry)	University of Stellenbosch	1992 - 1995
BA (English, Environmental & Geographical Science)	University of Cape Town	1989 - 1991
Matric Exemption	Wynberg Boy's High School	1983

Professional work experience

I have been registered as a Professional Natural Scientist (Pri.Sci.Nat.) in the field of soil science since 2012 (registration number 400268/12) and am a member of the Soil Science Society of South Africa.

Soil & Agricultural Consulting Self employed 2002 - present

Within the past 5 years of running my soil and agricultural consulting business, I have completed more than 170 agricultural assessments (EIAs, SEAs, EMPRs) in all 9 provinces for renewable energy, mining, electrical grid infrastructure, urban, and agricultural developments. I was the appointed agricultural specialist for the nation-wide SEAs for wind and solar PV developments, electrical grid infrastructure, and gas pipelines. My regular clients include: Zutari; CSIR; SiVEST; SLR; WSP; Arcus; SRK; Environamics; Royal Haskoning DHV; ABO; Enertrag; WKN-Windcurrent; JG Afrika; Mainstream; Redcap; G7; Mulilo; and Tiptrans. Recent agricultural clients for soil resource evaluations and mapping include Cederberg Wines; Western Cape Department of Agriculture; Vogelfontein Citrus; De Grendel Estate; Zewenwacht Wine Estate; and Goedgedacht Olives.

In 2018 I completed a ground-breaking case study that measured the agricultural impact of existing wind farms in the Eastern Cape.

Soil Science Consultant Agricultural Consultors International (Tinie du Preez) 1998 - 2001

Responsible for providing all aspects of a soil science technical consulting service directly to clients in the wine, fruit and environmental industries all over South Africa, and in Chile, South America.

Contracting Soil Scientist De Beers Namaqualand Mines July 1997 - Jan 1998

Completed a contract to advise soil rehabilitation and re-vegetation of mined areas.

Publications

- Lanz, J. 2012. Soil health: sustaining Stellenbosch's roots. In: M Swilling, B Sebitosi & R Loots (eds). *Sustainable Stellenbosch: opening dialogues*. Stellenbosch: SunMedia.
- Lanz, J. 2010. Soil health indicators: physical and chemical. *South African Fruit Journal*, April / May 2010 issue.
- Lanz, J. 2009. Soil health constraints. *South African Fruit Journal*, August / September 2009 issue.
- Lanz, J. 2009. Soil carbon research. *AgriProbe*, Department of Agriculture.
- Lanz, J. 2005. Special Report: Soils and wine quality. *Wineland Magazine*.

I am a reviewing scientist for the *South African Journal of Plant and Soil*.



environmental affairs

Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

APPENDIX 2: DETAILS OF THE SPECIALIST, DECLARATION OF INTEREST AND UNDERTAKING UNDER OATH

File Reference Number:
NEAS Reference Number:
Date Received:

(For official use only)

DEA/EIA/

Application for authorisation in terms of the National Environmental Management Act, Act No. 107 of 1998, as amended and the Environmental Impact Assessment (EIA) Regulations, 2014, as amended (the Regulations)

PROJECT TITLE

MULILO DE AAR 2 SOUTH WIND ENERGY FACILITY (WEF)

Kindly note the following:

- This form must always be used for applications that must be subjected to Basic Assessment or Scoping & Environmental Impact Reporting where this Department is the Competent Authority.
- This form is current as of 01 September 2018. It is the responsibility of the Applicant / Environmental Assessment Practitioner (EAP) to ascertain whether subsequent versions of the form have been published or produced by the Competent Authority. The latest available Departmental templates are available at <https://www.environment.gov.za/documents/forms>.
- A copy of this form containing original signatures must be appended to all Draft and Final Reports submitted to the department for consideration.
- All documentation delivered to the physical address contained in this form must be delivered during the official Departmental Officer Hours which is visible on the Departmental gate.
- All EIA related documents (includes application forms, reports or any EIA related submissions) that are faxed; emailed; delivered to Security or placed in the Departmental Tender Box will not be accepted, only hardcopy submissions are accepted.

Departmental Details

Postal address: Department of Environmental Affairs, Attention: Chief Director: Integrated Environmental Authorisations, Private Bag X447, Pretoria, 0001

Physical address: Department of Environmental Affairs, Attention: Chief Director: Integrated Environmental Authorisations, Environment House, 473 Steve Biko Road, Arcadia

Queries must be directed to the Directorate: Coordination, Strategic Planning and Support at:
Email: EIAAdmin@environment.gov.za

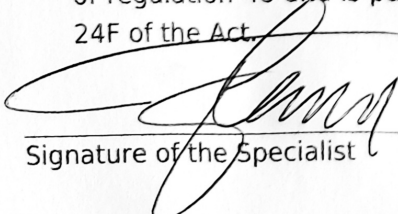
1. SPECIALIST INFORMATION

Specialist Company Name:	Johann Lanz – Soil Scientist		
B-BBEE	Contribution level (indicate 1 to 8 or non-compliant)	4	Percentage Procurement recognition
			100%
Specialist name:	Johann Lanz		
Specialist Qualifications:	M.Sc. (Environmental Geochemistry)		
Professional affiliation/registration:	Registered Professional Natural Scientist (Pr.Sci.Nat.) Reg. no. 400268/12 Member of the Soil Science Society of South Africa		
Physical address:	1a Wolfe Street, Wynberg, Cape Town, 7800		
Postal address:	1a Wolfe Street, Wynberg, Cape Town, 7800		
Postal code:	7800	Cell:	082 927 9018
Telephone:	082 927 9018	Fax:	Who still uses a fax? I don't
E-mail:	johann@johannlanz.co.za		

2. DECLARATION BY THE SPECIALIST

I, **Johann Lanz**, declare that -

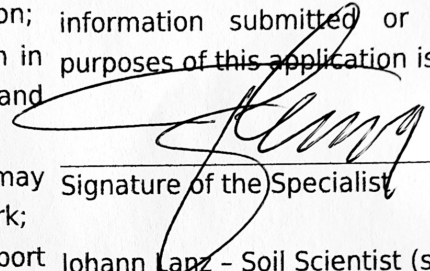
- I act as the independent specialist in this application;
- I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant;
- I declare that there are no circumstances that may compromise my objectivity in performing such work;
- I have expertise in conducting the specialist report relevant to this application, including knowledge of the Act, Regulations and any guidelines that have relevance to the proposed activity;
- I will comply with the Act, Regulations and all other applicable legislation;
- I have no, and will not engage in, conflicting interests in the undertaking of the activity;
- I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing - any decision to be taken with respect to the application by the competent authority; and - the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;
- all the particulars furnished by me in this form are true and correct; and
- I realise that a false declaration is an offence in terms of regulation 48 and is punishable in terms of section 24F of the Act.


 Signature of the Specialist
 Johann Lanz - Soil Scientist (sole proprietor)
 Name of Company:

Date 15/11/2022

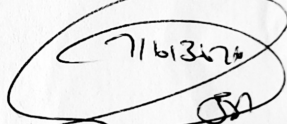
3. UNDERTAKING UNDER OATH/ AFFIRMATION

I, **Johann Lanz**, swear under oath / affirm that all the information submitted or to be submitted for the purposes of this application is true and correct.

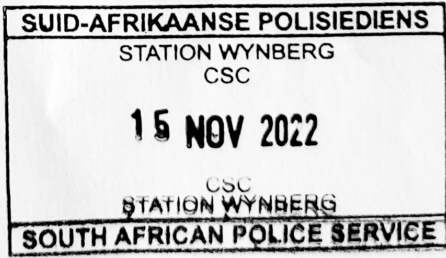

 Signature of the Specialist

Johann Lanz - Soil Scientist (sole proprietor)
 Name of Company

15/11/2022
 Date


 Signature of the Commissioner of Oaths

2022-11-15
 Date



APPENDIX 3: PROJECTS INCLUDED IN CUMULATIVE ASSESSMENT

Table 1: Table of all renewable energy applications within a 30 km radius of the proposed development, that were included in the cumulative impact assessment.

Project name	Reference number	Type	Status	Capacity (MW)
Proposed photovoltaic power generation facility near De Aar, Northern Cape	12/12/20/1673	Solar	Approved	10
The Construction Of A Photovoltaic (Pv) Plant On Portion 29 Of The Farm Paarde 145, De Aar Within Emthanjeni Local Municipality, Northern Cape Province	12/12/20/2025	Solar	Approved	100
The Proposed Construction Of Ilanga Lethemba Pv Solar Energy Facility In De Aar, Northern Cape Province	12/12/20/2048/1	Solar	Approved	75
Proposed Inca De Aar Solar Pty Ltd 30 MW Photovoltaic Solar Facility On A Site South-East Of De Aar, Northern Cape Province	12/12/20/2177	Solar	Approved	30
The Proposed Construction Of A Solar Energy Facility in The Emthanjeni Local Municipality In The Northern Cape Province	12/12/20/2250	Solar	Approved	75

Project name	Reference number	Type	Status	Capacity (MW)
The Proposed Establishment of Photovoltaic (Solar Power) Farms in The Northern Cape Province	12/12/20/2258/4	Solar	Approved	0
The Photovoltaic (Pv) Solar Energy Facility On The Farm Annex Du Plessis Dam (Pv4) Near De Aar Within The Emthanjeni Local Municipality, Northern Cape Province	12/12/20/2498	Solar	Approved	20
The Construction of A 75-150mw Photovoltaic Solar Energy Facility And Associated Infrastructure On Paarde Valley Farm Near De Aar Within The Emthanjeni Local Municipality, Northern Cape Province	12/12/20/2500	Solar	Approved	150
Proposed Solar Power Generation Facility in the remaining extent of the farm Vetlaagte 4, De Aar, Northern Cape Province	14/12/16/3/3/2/382/1	Solar	Approved	75
The Proposed Photovoltaic (Solar) Energy Facilities On Du Plessis Dam Farm Near De Aar, Emthanjeni Local Municipality, Northern Cape Province.	14/12/16/3/3/2/456	Solar	In process	75

Project name	Reference number	Type	Status	Capacity (MW)
Proposed photovoltaic Solar energy facility (PV2) on Badenhost Dam Farm near De Aar in the Northern Cape Province	14/12/16/3/3/2/504	Solar	In process	75
The Proposed Establishment of an 86mw Solar Facility on Portion 4 of the Farm Riet Fountain No. 6 in the Emthanjeni Local Municipality, Northern Cape Province	14/12/16/3/3/2/663	Solar	Approved	86
Proposed 300MW Solar Power Plant in Phillipstown area in Renosterberg Local Municipality	14/12/16/3/3/2/740	Solar	Approved	300
Proposed PV facility on farm Caroluspoort near De Aar	14/12/16/3/3/2/741	Solar	In process	300
Proposed PV facility on farm Blaauwkratz near De Aar	14/12/16/3/3/2/742	Solar	In process	75
Proposed PV facility on farm Loskop near De Aar	14/12/16/3/3/2/743	Solar	In process	0
Proposed PV facility on farm Jakhalsfontein near De Aar	14/12/16/3/3/2/744	Solar	In process	300
Proposed establishment of a wind power generating facility near De Aar, Northern Cape.	12/12/20/1651	WEF	Approved	100

Project name	Reference number	Type	Status	Capacity (MW)
Longyuan Mulilo De Aar 2 North Wind Energy Facility	12/12/20/2463/2	WEF	Approved (Operational)	258
Proposed Castle wind energy facility project, located near De Aar, Northern Cape Province	14/12/16/3/3/2/278	WEF	Approved (Note: “in process” according to DFFE REEA 2022 Q2)	140
Total		Solar		1,746
Total		WEF		498
Grand total				2,244