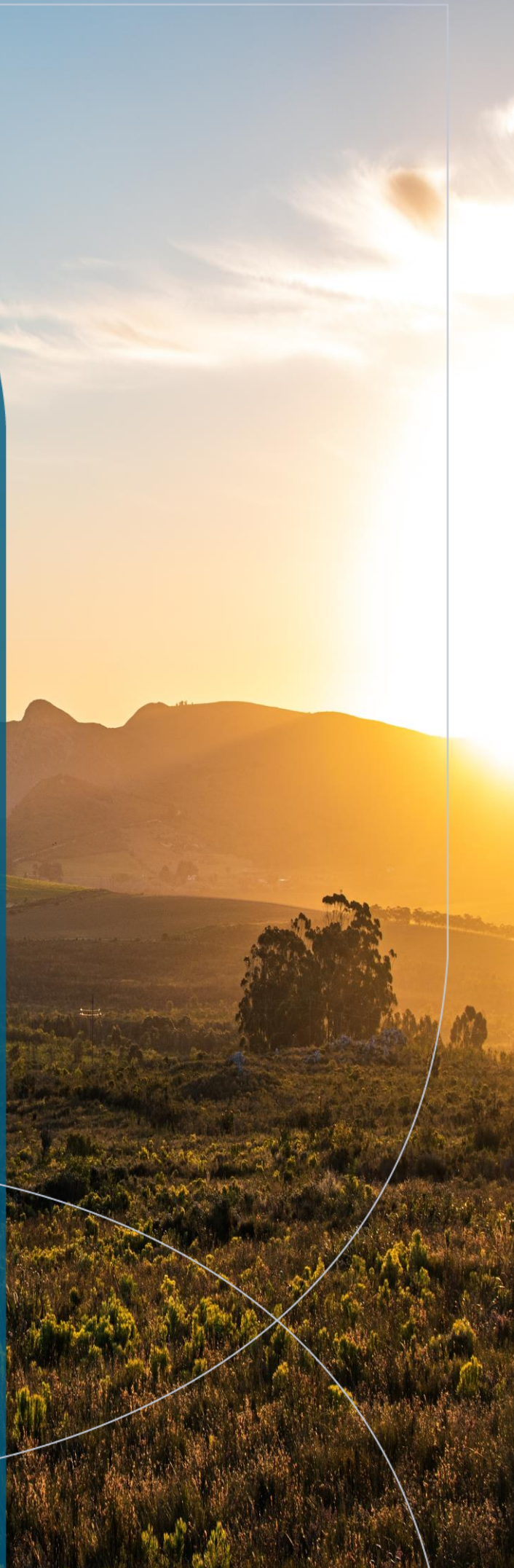


DRAFT BASIC
ASSESSMENT
REPORT

THE DEVELOPMENT
OF GRID CONNECTION
INFRASTRUCTURE FOR
THE AUTHORISED
PHOFU SOLAR POWER
PLANT, NEAR
VIERFONTEIN, FREE
STATE PROVINCE

27 OCTOBER 2023



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PROJECT DETAIL

DESTEA Reference No	:	To be confirmed
Project Title	:	Grid Connection Infrastructure for the authorised Phofu Power Plant, near Vierfontein, Free State Province
Consultancy	:	Blue Crane Environmental (Pty) Ltd
Authors	:	Marelle Botha (Registered EAP) Suvana Alakram (Candidate EAP)
Applicant	:	Phofu Solar Power Plant (RF) (Pty) Ltd
Report Status	:	Draft Basic Assessment Report available for review and comment from 27 October 2023 to 27 November 2023
Report Date	:	27 October 2023
Report Reference	:	Blue Crane Environmental, (2023).Draft Basic Assessment Report. Grid Connection Infrastructure for the Authorised Phofu Solar Power Plant near Vierfontein, Free State Province
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destea

department of
economic, small business development,
tourism and environmental affairs
FREE STATE PROVINCE

(For official use only)

File Reference Number:

Application Number:

Date Received:

Basic assessment report in terms of the Environmental Impact Assessment Regulations, 2014, promulgated in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended.

Kindly note that:

1. This **basic assessment report** is a standard report that may be required by a competent authority in terms of the EIA Regulations, 2014 as amended and is meant to streamline applications. Please make sure that it is the report used by the particular competent authority for the activity that is being applied for.
2. This report format is current as of **13 February 2020**. It is the responsibility of the applicant to ascertain whether subsequent versions of the form have been published or produced by the competent authority
3. The report must be typed within the spaces provided in the form. The size of the spaces provided is not necessarily indicative of the amount of information to be provided. The report is in the form of a table that can extend itself as each space is filled with typing.
4. Where applicable **tick** the boxes that are applicable in the report.
5. An incomplete report may be returned to the applicant for revision.
6. The use of “not applicable” in the report must be done with circumspection because if it is used in respect of material information that is required by the competent authority for assessing the application, it may result in the rejection of the application as provided for in the regulations.
7. This report must be handed in at offices of the relevant competent authority as determined by each authority.
8. No faxed or e-mailed reports will be accepted.
9. The signature of the EAP on the report must be an original signature.
10. The report must be compiled by an independent and **EAPASA registered** environmental assessment practitioner.
11. Unless protected by law, all information in the report will become public information on receipt by the competent authority. Any interested and affected party should be provided with the information contained in this report on request, during any stage of the application process.
12. A competent authority may require that for specified types of activities in defined situations only parts of this report need to be completed.

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13. Should a specialist report or report on a specialised process be submitted at any stage for any part of this application, the terms of reference for such report must also be submitted.
14. Two (2) colour hard copies and one (1) electronic copy of the report must be submitted to the competent authority.
15. Shape files (.shp) for maps must be included in the electronic copy of the report submitted to the competent authority.

APPENDICES

Appendix A: Maps

- Appendix A1: Locality Map
- Appendix A2: Regional Map
- Appendix A3: Layout Map
- Appendix A4: Sensitivity Map
- Appendix A5: Vegetation Map
- Appendix A6: Cumulative Impact Map
- Appendix A7: Protected Areas Map
- Appendix A8: Critical Biodiversity Areas Map
- Appendix A9: REDZ Map
- Appendix A10: Coordinates of the Development Footprint

Appendix B: Photographs

Appendix C: Facility Illustration(s) – *Not available at this stage*

Appendix D: Specialist Reports

- Appendix D1: Terrestrial Biodiversity Compliance Statement (including fauna, flora and avifauna)
- Appendix D2: Freshwater Ecology Compliance Statement
- Appendix D3: Soils and Agricultural Compliance Statement
- Appendix D4: Visual Impact Assessment
- Appendix D5: Heritage Impact Assessment
- Appendix D6: Terms of Reference

Appendix E: Public Participation Process

- Appendix E1: Press advertisements and Site Notice
- Appendix E2: Proof of correspondence
- Appendix E3: Comments and Response Report
- Appendix E4: Written Comments Received
- Appendix E5: List of I&APs
- Appendix E6: Minutes of Meeting - *Not applicable*

Appendix F: Impact Assessment

Appendix G: Environmental Management Programme (EMPr)

Appendix G1: Phofu Power Line Generic EMPr

Appendix G2: Phofu Substation Generic EMPr

Appendix G3: Chance Find Procedure

Appendix H: Details of EAP and expertise

Appendix I: Specialist declaration of interest

Appendix J: Additional Information

Appendix J1: Screening Tool Report

Appendix J2: Site Sensitivity Verification Report

Appendix J3: DESTEA Correspondence – Pre-Application Meeting

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GLOSSARY OF TERMS AND ACRONYMS

BA	Basic Assessment
BAR	Basic Assessment Report
CEA	Cumulative Effects Assessment
DFFE	Department of Forestry, Fisheries and the Environment
DM	District Municipality
DMRE	Department of Mineral Resources and Energy
DWS	Department of Water and Sanitation
EA	Environmental Authorisation
EAP	Environmental Assessment Practitioner
EIA	Environmental Impact Assessment
EMPr	Environmental Management Programme
EP	Equator Principles
EPFI	Equator Principles Financial Institutions
Environmental impact	Any change to the environment, whether adverse or beneficial, wholly or partially resulting from an organization's environmental aspects.
GNR	Government Notice Regulation
I&AP	Interested and affected party
IDP	Integrated Development Plan
IFC	International Finance Corporation
IPP	Independent Power Producer
IRP	Integrated Resource Plan
kV	Kilo Volt
LM	Local Municipality
Mitigate	Activities designed to compensate for unavoidable environmental damage.

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MW	Megawatt
NEMA	National Environmental Management Act No. 107 of 1998
NERSA	National Energy Regulator of South Africa
NWA	National Water Act No. 36 of 1998
PAOI	Project Area of Influence
PPP	Public Participation Process
PV	Photovoltaic
QDS	Quarter Degree Square
REIPPP	Renewable Energy IPP Procurement Process
SAHRA	South African Heritage Resources Agency
SDF	Spatial Development Framework
SPP	Solar Power Plant
VU	Vegetation Unit

EXECUTIVE SUMMARY

Phofu Solar Power Plant (RF) (Pty) Ltd proposes the development of grid connection infrastructure for the authorised 150MW Phofu Solar Power Plant (DFFE Ref.: 14/12/16/3/3/1/2543). The grid connection infrastructure includes two 132kV single circuit overhead power lines to enable a loop-in loop-out connection to the Mercury – Grootkop 132kV OHL and substation to enable the evacuation of the generated electricity from the Solar Power Plant to the national grid. This is considered to be the grid connection solution for the authorised solar power plant. The development is located approximately 6km east of the town of Vierfontein and falls within the Moqhaka Local Municipality and the greater Fezile Dabi District Municipality.

The power line proposed to be developed will be up to 7km long (assessed within a 300m wide corridor, which in some places extends to 800 m) and the substation will be up to 2 hectares in extent. Associated infrastructure, such as access roads and limited laydown areas will also be developed.

The Phofu Grid Connection is proposed to specifically address the need to connect the proposed Phofu Solar Power Plant to the national grid which will enable the evacuation of the generated electricity from the two solar energy facilities. An Application for Environmental Authorisation was granted for the Phofu Solar Power Plant by the National Department of Forestry, Fisheries, and the Environment (DFFE) with reference number 14/12/16/3/3/1/2532.

The authorised Phofu Solar Power Plant is intended to form part of the Department of Mineral Resources and Energy's Renewable Energy Independent Power Producer Procurement (REIPPP) Programme or any other programmes/opportunities to generate and supply power in South Africa.

Three alternative routes were considered prior to the lodging of the Application for Environmental Authorisation and submission of the Basic Assessment Report, however only one route / grid connection corridor has been put forward for assessment which will be based on technical feasibility and environmental sensitivity. The other two alternatives that

were considered were discarded due to environmental sensitivity and technical feasibility following the receipt of feedback from Eskom by the Applicant which provided guidance.

Based on the grid connection infrastructure proposed to be developed, it is confirmed that the project is listed under Listing Notice 1 (GN. R. 327), indicating the potential of the development to result in a significant environmental impact. As the developments trigger Listing Notice 1 a Basic Assessment Process will need to be undertaken as per the requirements of Regulation 19 and Appendix 1 of the EIA Regulations, as amended. A Basic Assessment (BA) process and Application for Environmental Authorisation is being undertaken and lodged with the Free State Department of Economic, Small Business Development, Tourism and Environmental Affairs (DESTEA).

Blue Crane Environmental (Pty) Ltd has been appointed to undertake the Basic Assessment (BA) Process for the proposed development. It is confirmed that the proposed project is listed under Listing Notice 1 (GN. R. 327) of the EIA Regulations, 2014 (as amended), indicating the potential of the development to result in a significant environmental impact. As the development triggers activities under Listing Notice 1 a Basic Assessment Process will need to be undertaken as per the requirements of Regulation 19 and Appendix 1 of the EIA Regulations, as amended.

It must be noted that this is the Draft Basic Assessment (BA) Report for the proposed development. This Draft BA Report has been made available to all registered I&APs for a 30-day review and comment period as per Regulation 19(1)(b) of the EIA Regulations 2014, as amended. The 30-day review and comment period is from **Friday 27 October 2023 to Monday 27 November 2023**.

It has been determined that the proposed development will have a net positive impact for the area and will subsequently ensure the optimal utilisation of resources. This is based on the fact that the proposed grid connection infrastructure will enable the operation and evacuation of generated solar electricity into the national grid from an already authorised solar power plant. All negative environmental impacts can be effectively mitigated through the proposed mitigation measures and no residual negative impacts are foreseen.

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From the results of the draft BA Report, the opportunities to mitigate the significance of all impacts to an appropriate level, the absence of fatal flaws and the environmentally appropriate grid connection corridor put forward by the Applicant for decision-making, it is recommended that approval for the proposed grid connection infrastructure be granted, subject to the implementation of the recommended mitigation measures and conditions for EA listed in this draft BA Report.

SECTION A: ACTIVITY INFORMATION

Has a specialist been consulted to assist with the completion of this section?

YES	NO
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If YES, please complete the form entitled "Details of specialist and declaration of interest" for the specialist appointed and attach in Appendix I.

1. PROJECT DESCRIPTION

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

Phofu Solar Power Plant (RF) (Pty) Ltd proposes the development of grid connection infrastructure for the authorised 150MW Phofu Solar Power Plant (DFFE Ref.: 14/12/16/3/3/1/2543). The grid connection infrastructure includes two 132kV single circuit overhead power lines to enable a loop-in loop-out connection to the Mercury – Grootkop 132kV OHL and substation to enable the evacuation of the generated electricity from the Solar Power Plant to the national grid. This is considered to be the grid connection solution for the authorised solar power plant. The development is located approximately 6km east of the town of Vierfontein and falls within the Moqhaka Local Municipality and the greater Fezile Dabi District Municipality.

The power line proposed to be developed will be up to 7km long (assessed within a 300m wide corridor, which in some places extends to 800 m) and the substation will be up to 2 hectares in extent. Associated infrastructure, such as access roads and limited laydown areas will also be developed. Three alternative routes are considered prior to the lodging of the Application for Environmental Authorisation and submission of the Basic Assessment Report, however only one route / grid connection corridor will be put forward for assessment which will be based on technical feasibility and environmental sensitivity.

Blue Crane Environmental has been appointed to undertake an Environmental Impact Assessment (Basic Assessment) process for the proposed grid connection infrastructure. The entire extent of the development / grid connection corridor is located within the Central Corridor of the Strategic Transmission Corridors and the Klerksdorp Renewable Energy Development Zone.

The grid connection corridor under consideration spans across specific properties within the area. The details of the location of the Grid Connection Infrastructure and associated infrastructure are included in the Table 1 below.

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Table 1: The general site information

Description of affected farm portions	<p><u>Proposed substation for the authorised Phofu Solar Power Plant:</u></p> <ul style="list-style-type: none"> • Portion 3 of the Farm Tweepunt No.14 <p><u>Grid Connection Corridor:</u></p> <ul style="list-style-type: none"> • Remaining Extent, Portion 1, Portion 2 and Portion 3 of the Farm Marseilles No. 24 • Remaining Extent and Portion 3 of the Farm Tweepunt No. 14 • Remaining Extent, Portion 1 and Portion 2 of the Farm Degrendel No. 67 • The Farm Ratpan No. 441 • Portion 3 of the Farm Fraai Uitzicht No. 189 • Portion 2 of the Farm Hormah No. 276 <p><u>Access Road:</u></p> <ul style="list-style-type: none"> • R76 regional road
Province	Free State Province
Local Municipality	Moqhaka Local Municipality
District Municipality	Fezile Dabi District Municipality
Ward numbers	21 and 22
Closest towns	The corridor is located ~6km east from the centre of the town of Vierfontein.

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21 Digit Surveyor General codes	<p><u>Substation for the Authorised Phofu Solar Power Plant:</u></p> <ul style="list-style-type: none"> • Portion 3 of Farm Tweepunt No.14 F0360000000001400003 <p><u>Grid Connection Corridor:</u></p> <ul style="list-style-type: none"> • Remaining Extent of the Farm Marseilles No. 24 F0360000000002400000 • Portion 1 of the Farm Marseilles No.24 F0360000000002400001 • Portion 2 of the Farm Marseilles No.24 F0360000000002400002 • Portion 3 of the Farm Marseilles No.24 F0360000000002400003 • Remaining Extent of the Farm Tweepunt No. 14 F0360000000001400000 • Portion 3 of the Farm Tweepunt No. 14 F0360000000001400003 • Remaining Extent of the Farm Degrendel No. 67 F0360000000006700000 • Portion 1 of the Farm Degrendel No. 67 F0360000000006700001 • Portion 2 of the Farm Degrendel No. 67 F0360000000006700002 • The Farm Ratpan No. 441 F03600000000044100000 • Portion 3 of the Farm Fraai Uitzicht No. 189 F03600000000018900003 • Portion 2 of the Farm Hormah No. 276 F03600000000027600002
EIA footprint (area assessed for the placement of the	Grid connection corridor of 7km in length and 300m wide, and 2 hectare assessment area for the

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development footprint)

substation.

In terms of the National Environmental Management Act (Act 107 of 1998), with specific reference to Sections 24 and 24D, as read with GNR 324-327, as amended (2017), Environmental Authorisation is required for the grid connection infrastructure proposed.

The technical details of the proposed development are included in Table 2 below.

Table 2: Technical details

Component	Description / dimensions
Type of technology	<ul style="list-style-type: none"> • 2x 132 kV single circuit overhead power lines to enable a loop-in loop-out connection • Substation / switching station
Structure height	<ul style="list-style-type: none"> • Power Line: Up to 32 m • Substation: Up to 10 m
Area of the substation / switching station	Up to 2 ha
Capacity of the substation / switching station	Up to 132 kV
Length of the power line	~7 km
Grid connection corridor width	300 m wide which extends to 800 m in certain areas
Servitude width	~64 m

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

Listed activity as described in GN 327,325 and 324	Description of project activity
<p><u>Activity 11 (i) (GN.R. 327):</u></p> <p><i>"The development of facilities or infrastructure for the transmission and distribution of electricity- (i) outside urban areas or industrial complexes with a capacity of more than 33 but less than 275 kilovolts"</i></p>	<p>Activity 11(i) is triggered since the development of 132kv power lines (2 single circuit power lines to enable a loop-in loop-out connection), and a 132 kV substation / switching substation are required to enable the connection of the authorised Phofu Solar Power Plant to the national grid network. A 300m wide (which extends to 800 m in certain sections) and 7km long grid connection corridor is assessed for the placement of the power lines and substation.</p>
<p><u>Activity 12(ii)(a) (GN.R 327):</u></p> <p><i>"The development of (ii) infrastructure or structures with a physical footprint of 100 squares metres or more where such development occurs (a) within a watercourse."</i></p>	<p>Activity 12(ii)(a) is triggered as an extended section of the grid connection corridor infringes on a wetland flat and depression wetland. Therefore, infrastructure associated with the power line will be placed within these watercourses present within the grid connection corridor.</p>
<p><u>Activity 19 (GN.R 327):</u></p> <p><i>"The infilling or depositing of any material of more than 10 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grid, pebbles or rock of more than 10 cubic metres from a watercourse."</i></p>	<p>Activity 19 is triggered as an extended section of the grid connection corridor infringes on a wetland flat and depression wetland. Therefore, infrastructure associated with the power line will be placed within these watercourses present within the grid connection corridor which will require the infilling and removal of material of more than 10 cubic metres into / from the wetland features present.</p>
<p><u>Activity 27 (GN.R 327):</u></p> <p><i>"The clearance of an area of 1 hectare or</i></p>	<p>Activity 27 is triggered since the extent of the substation to be developed is up to 2 hectares.</p>

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<p><i>more, but less than 20 hectares of indigenous vegetation"</i></p>	
<p><u>Activity 28(ii) (GN.R. 327):</u></p> <p><i>"Residential, mixed, retail, commercial, industrial or institutional developments where such land was used for agriculture or afforestation on or after 1998 and where such development (ii) will occur outside an urban area, where the total land to be developed is bigger than 1 hectare"</i></p>	<p>Activity 28 (ii) is triggered as the Phofu Grid Connection Infrastructure will occur outside an urban area on land used for agricultural purposes. The development of a substation proposed as part of the project will require the clearance of up to 2 hectares of indigenous vegetation.</p>
<p><u>Activity 12 (b)(i)(ii)(iv) (GN.R.324)</u></p> <p><i>"The clearance of an area of 300 square metres or more of indigenous vegetation except where such clearance of indigenous vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan within the (b) Free State, (i) within any critically endangered or endangered ecosystem listed in terms of section 52 of the NEMBA or prior to the publication of such a list, within an area that has been identified as critically endangered in the National Spatial Biodiversity Assessment 2004, (ii) within critical biodiversity areas identified in bioregional plans and within (iv) areas with a watercourse or wetland or within 100 metres from the edge of a watercourse or wetland."</i></p>	<p>Activity 12 (b)(i)(ii)(iv) is triggered since the project is located in the Free State province. The grid connection corridor overlaps with an Endangered Ecosystem. The western end point and middle section of the corridor overlaps with CBA1 areas. Two wetlands (depression and flat) are located within the grid connection corridor.</p>
<p><u>Activity 14 (ii)(a)(b)(i)(ff)(hh) (GN.R.324)</u></p> <p><i>"The development of (ii) infrastructure or structures with a physical footprint of 10</i></p>	<p>Activity 14 (ii)(a)(b)(i)(ff)(hh) is triggered as two wetlands (depression and flat) are located within the grid connection corridor that will be infringed upon by the grid</p>

<p><i>square metres or more where such development occurs (a) within a watercourse, in the (b) Free State, (i) outside urban areas, (ff) within critical biodiversity areas or ecosystem service areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans, and within (hh) Areas within 10 kilometres from national parks or world heritage sites or 5 kilometres from any protected area identified in terms of NEMPAA or from the core area of a biosphere reserve.”</i></p>	<p>infrastructure.</p> <p>The development is located in the Free State Province and outside any urban areas. The western end point and middle section of the corridor overlaps with CBA1 areas.</p> <p>Further to the above, the Mispah Game Farm situated ~5 km north-west of the corridor is listed as a protected area.</p>
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2. FEASIBLE AND REASONABLE ALTERNATIVES

“alternatives”, in relation to a proposed activity, means different means of meeting the general purpose and requirements of the activity, which may include alternatives to—

- (a) the property on which or location where it is proposed to undertake the activity;
- (b) the type of activity to be undertaken;
- (c) the design or layout of the activity;
- (d) the technology to be used in the activity;
- (e) the operational aspects of the activity; and
- (f) the option of not implementing the activity.

Describe alternatives that are considered in this application as required by Appendix 1 (3)(h) of GN 326, Regulation 2014 as amended. Alternatives should include a consideration of all possible means by which the purpose and need of the proposed activity (NOT PROJECT) could be accomplished in the specific instance taking account of the interest of the applicant in the activity. The no-go alternative must in all cases be included in the assessment phase as the baseline against which the impacts of the other alternatives are assessed.

The determination of whether site or activity (including different processes, etc.) or both is appropriate needs to be informed by the specific circumstances of the activity and its environment. After receipt of this report the, competent authority may also request the applicant to assess additional alternatives that could possibly accomplish the purpose and need of the proposed activity if it is clear that realistic alternatives have not been considered to a reasonable extent.

The identification of alternatives should be in line with the Integrated Environmental Assessment Guideline Series 11, published by the DEA in 2004. Should the alternatives include different locations and lay-outs, the co-ordinates of the different alternatives must be provided. The co-ordinates should

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be in degrees, minutes and seconds. The projection that must be used in all cases is the WGS84 spheroid in a national or local projection.

a) Site alternatives

Alternative 1 (preferred alternative)		
Description	Lat (DDMMSS)	Long (DDMMSS)
<p>A 300m wide and 7km long grid connection corridor and 2-hectare assessment area for the substation has been identified and assessed for the placement of the grid connection infrastructure. Associated infrastructure such as access roads and laydown areas have also been considered. The width of the corridor does extend to 800 m in some sections.</p> <p>As the corridor and assessment area are related to the authorised Phofu Solar Power Plant, no other grid connection corridor locations are being considered for the development.</p>	27°04'36.32"S	26°50'48.79"E
Alternative 2		
Description	Lat (DDMMSS)	Long (DDMMSS)
Alternative 3		
Description	Lat (DDMMSS)	Long (DDMMSS)

In the case of linear activities:

Alternative:

Alternative S1 (preferred)

- Starting point of the activity
- Middle/Additional point of the activity
- End point of the activity

Latitude (S):

Longitude (E):

27°02'57.90"S	26°48'42.46"E
27°04'36.32"S	26°50'48.79"E
27°05'19.74"S	26°52'26.45"E

Alternative S2 (if any)

- Starting point of the activity
- Middle/Additional point of the activity
- End point of the activity

Alternative S3 (if any)

- Starting point of the activity
- Middle/Additional point of the activity
- End point of the activity

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

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

b) Lay-out alternatives

Alternative 1 (preferred alternative)		
Description	Lat (DDMMSS)	Long (DDMMSS)
<p>A 300m wide and 7km long grid connection corridor and 2-hectare assessment area for the substation has been identified and assessed for the placement of the grid connection infrastructure. Associated infrastructure such as access roads and laydown areas have also been considered. The width of the corridor does extend to 800 m in some sections.</p> <p>The preferred grid connection corridor is also located in close proximity to the connection point on the national grid. The loop-in loop-out connection to the existing Eskom overhead power line will be constructed within the grid connection corridor.</p> <p>As the corridor and assessment area are related to the authorised Phofu Solar Power Plant, no other grid connection corridor locations are being considered for the development.</p>	27°04'36.32"S	26°50'48.79"E
Alternative 2		
Description	Lat (DDMMSS)	Long (DDMMSS)
Alternative 3		
Description	Lat (DDMMSS)	Long (DDMMSS)

c) Technology alternatives

Alternative 1 (preferred alternative)
<p>The development of two 132 kV overhead distribution lines is the only preferred alternative for the Applicant since overhead power lines are less costly to construct than underground power lines. Overhead distribution lines can be installed relatively quickly</p>

since there is no need to trench and it is easier to identify damages or faults.

Overhead lines allow higher voltage operations, and the surrounding air provides the necessary electrical insulation to earth, whereas underground cables are oil-cooled and are susceptible to groundwater contamination and flooding.

The overall weather conditions in the Free State Province are unlikely to cause damage and faults on the proposed overhead distribution power line.

Furthermore, overhead power lines also provide an opportunity for the avoidance of sensitive environmental features as the overhead lines can span on-ground environmental features to ensure conservation, therefore providing more flexibility in terms of mitigation of the associated on-ground disturbance.

The following alternatives may be considered for the overhead power line:

- Single circuit overhead power line – The use of single circuit overhead power lines to distribute electricity is considered the most appropriate technology and has been designed over many years for the existing environmental conditions and terrain as specified in the Eskom specifications and the international best practise.
- Double circuit overhead power line – the disadvantages of the use of double circuit (placing two powerlines on either side of the same tower structure) is that , 1) when there is a fault or problem on one powerline, the other power line is also disable during maintenance and 2) Taller and larger towers as well as more towers are required for this type of power line.

The Applicant has indicated that the placement of two single-circuit power lines within the grid connection corridor is preferred.

The substation infrastructure proposed is a per the requirements for the evacuation of the generated electricity from the authorised Phofu Solar Power Plant to the national grid and therefore no alternatives are under consideration / assessment.

Alternative 2

Alternative 3

d) Other alternatives (e.g. scheduling, demand, input, scale and design alternatives)

Alternative 1 (preferred alternative)
<p>The choice of pylon structure to be used for the power line will be determined in consultation with Eskom. No defined structure has been confirmed at this stage and will depend on Eskom’s technical requirements. The 132kV line must be constructed according to the authorised standards for a power line approved by Eskom Holdings SoC Ltd. The structure to be utilised for the power line towers will also be informed by the local geotechnical and topographical conditions.</p> <p>A variety of different monopole pylon options could be required, depending on the location of the pylon within the route or at bends and how sharp the bend is.</p>
<i>Alternative 2</i>
<i>Alternative 3</i>

e) No-go alternative

<p>The no-go alternative has been assessed and this assumes that the proposed activity does not proceed and the status quo of the environment associated with the authorised Phofu Solar PV Plant and the proposed grid connection corridor will continue in its current state. The approved Phofu Solar Power Plant (DFFE Ref No: 14/12/16/3/3/1/2543) would not proceed and the assessment area will remain unchanged. The land would continue to be used for agricultural purposes. This alternative can provide the baseline scenario against which other alternatives can be compared. In this case the benefits of the project will be relinquished and the opportunity to provide renewable energy contributing to national targets would not be achieved in this instance. Other benefits such as employment opportunities and local economic growth would also be relinquished.</p>
--

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

PHYSICAL SIZE OF THE ACTIVITY

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

Alternative:

Alternative A1¹ (preferred activity alternative)

Size of the activity:

2,760 000m ² / 276 hectares (size of the grid connection corridor and assessment area)
m ²
m ²

Alternative A2 (if any)

Alternative A3 (if any)

or, for linear activities:

Alternative:

Alternative A1 (preferred activity alternative)

Alternative A2 (if any)

Alternative A3 (if any)

Length of the activity:

Up to 7000m / 7km
m
m

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

Alternative:

Alternative A1 (preferred activity alternative)

Alternative A2 (if any)

Alternative A3 (if any)

Size of the site/servitude:

m ²
m ²
m ²

3. SITE ACCESS

Does ready access to the site exist?

If NO, what is the distance over which a new access road will be built

YES	NO
	m

Describe the type of access road planned:

Access roads authorised as part of the Phofu Solar Power Plant will be utilised for the proposed grid connection infrastructure. The only road that will be developed will be the twin-track service road underneath the power line for construction and operation and maintenance purposes where an existing road is not available for use. Therefore, no new significant access roads will be developed as part of the grid connection infrastructure

¹ "Alternative A.." refer to activity, process, technology or other alternatives.

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

4. LOCALITY MAP

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

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

The locality map is included as Appendix A1

5. LAYOUT/ROUTE PLAN

A detailed site or route plan(s) must be prepared for each alternative site or alternative activity. It must be attached as Appendix A to this document.

The site or route plans must indicate the following:

- the property boundaries and numbers of all the properties within 50 metres of the site;
- the current land use as well as the land use zoning of the site;
- the current land use as well as the land use zoning each of the properties adjoining the site or sites;
- the exact position of each listed activity applied for (including alternatives);
- servitude(s) indicating the purpose of the servitude;
- a legend; and
- a north arrow.

The layout map is included as Appendix A3

6. SENSITIVITY MAP

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

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

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

The sensitivity map is included as Appendix A4

7. SITE PHOTOGRAPHS

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

Site photographs are included as Appendix B

8. FACILITY ILLUSTRATION

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

Not available at this stage of the development as detailed design of the infrastructure within the grid connection corridor has not been completed as yet.

9. ACTIVITY MOTIVATION

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

1. Is the activity permitted in terms of the property's existing land use rights?	YES	NO	Please explain
<p>The land use within the grid corridor is zoned as agriculture, mainly cultivated crops and grazing. The regional road R76 is situated within the corridor and the corridor therefore runs parallel to the R76. Consent has been provided by the relevant affected landowners for the development of the authorised Phofu Solar Power Plant. A rezoning process will be conducted prior to construction to change the land use from agriculture to special land use to ensure the land use rights align with the proposed development and the authorised Phofu Solar Power Plant.</p> <p>Furthermore, it must be noted that the current land use activities can continue with the development of the grid connection infrastructure as the power line is overhead allowing for activity underneath the route and does not require extensive areas of land.</p>			
2. Will the activity be in line with the following?			
(a) Provincial Spatial Development Framework (PSDF)	YES	NO	Please explain
<p>The proposed development of the grid connection infrastructure for the authorised Phofu Solar Plant is expected to enhance economic growth which is a key pillar in the Free State Provincial Growth and Development strategy (Free State PSDF, 2012). One of the principles of the Free State PSDF is, <i>"Long-term viability of economic activities depend on the sustainability of the resource base and the supporting environment"</i>. To this end we can state that renewable energy's impact on economic growth and environmental sustainability is substantial and can be seen to be holistically positive by diversifying the country's energy mix to supply consistent power and provide opportunities for the public and private sectors. In terms of environmentally sustainability, renewable energy represents an energy source that is a key solution to climate change as it emits little to no greenhouse gases or pollutants into the atmosphere during operation. The proposed grid connection and authorised Phofu Solar Power Plant is therefore in line with the framework in terms of the contributions and opportunities presented by a development of this nature.</p>			

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(b) Urban edge / Edge of Built environment for the area	YES	NO	Please explain
The development is located outside of an urban edge.			
(c) Integrated Development Plan (IDP) and Spatial Development Framework (SDF) of the Local Municipality (e.g. would the approval of this application compromise the integrity of the existing approved and credible municipal IDP and SDF?).	YES	NO	Please explain
<p>The Moqhaka Local Municipality Integrated Development Plan (IDP, 2022-2027) reflects that local economic development has been negatively impacted upon by the effects of COVID-19 in the form of unemployment and economic downturn. The overall aim of the municipality is to improve the quality of life for all residents in their area of jurisdiction. With this in mind, an Energy Plan has been developed for inclusion the IDP and the main purpose is to develop initiatives to reduce energy usage in a sustainable way. One of the key objectives stemming from this is <i>"To expand the electrification programme to any remaining areas and roll out solar energy in any identified areas as per the prescribed standard."</i></p> <p>In addition to this, the IDP recognizes the local Department of Economic, Small Business Development, Tourism, and Environmental Affairs initiative to promote renewable energy which began in April 2022.</p> <p>According to the Moqhaka Local Municipality SDF (2019-2020), one of the key objectives is to expand renewable energy and <i>"promote the development of renewable energy supply schemes"</i>.</p> <p>An approval of this application will therefore support the aims and objectives of Moqhaka Local Municipality IDP and SDF by improving economic growth and contributing to the sustainable use of resources by investing in renewable technology.</p>			

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(d) Approved Structure Plan of the Municipality	YES	NO	Please explain
<p>One of the Spatial Development Goals of the Moqhaka Local Municipality is to incorporate <i>“Developments aligned with environmental legislation and policy and cognisant of protecting the environment and the optimisation of natural resources”</i>. This goal speaks to the use of renewable energy as a natural resource that is sustainable because renewable developments emit no harmful emissions in the operational phase.</p> <p>A key challenge faced by the Moqhaka Local Municipality is the effects of climate change on various critical sectors such as agriculture. Their intention is to roll out renewable energy initiatives as a strategy to mitigate the impacts of climate change proves that this development is in line with the approved structure of the Municipality.</p>			
(e) An Environmental Management Framework (EMF) adopted by the Department (e.g. Would the approval of this application compromise the integrity of the existing environmental management priorities for the area and if so, can it be justified in terms of sustainability considerations?)	YES	NO	Please explain
<p>The objectives of the Moqhaka Local Municipality Environmental Management Framework (2013) include, <i>“Contribute to environmentally sustainable development by anticipating potential impacts and by providing early warnings in respect of thresholds, limits, and cumulative impacts, and by identifying existing impacts to be addressed.”</i></p> <p>The development of the Grid Connection Infrastructure for the authorised Phofu Solar Power Plant would not compromise the objective of the EMF.</p>			

(f) Any other Plans (e.g. Guide Plan)	YES	NO	Please explain
<p>The National Development Plan</p>			
<p>The National Development Plan (NDP 2030) aims to “eliminate poverty and reduce inequality by 2030” (RSA, undated). In order to eliminate or reduce inequality, the economy of South Africa needs to grow faster in order to benefit all South Africans. In May 2010 a draft national development plan was drafted, which highlighted the nine (9) key challenges for South Africa. The highest priority areas according to the plan are considered to be the creation of employment opportunities and to improve the quality of national education. In this regard, the plan sets out three (3) priority areas, namely, to raise employment by a faster growing economy, improve the quality of education, and to build the capability of the state in order to play a more developmental and transformative role. One of the key challenges identified was that the economy is unsustainably resource intensive and the acceleration and expansion of renewable energy was identified as a key intervention strategy to address this challenge.</p>			
<p>The development of the proposed grid connection infrastructure along with the authorized Phofu Solar Power Plant will contribute to the intervention strategy as identified within the plan. The proposed grid connection solution will enable the evacuation of the generated electricity from the solar energy facility mentioned above.</p>			
<p>National Infrastructure Plan of South Africa (2012)</p>			
<p>In the year 2012 the South African Government adopted a National Infrastructure Plan (hereafter referred to as the Plan). The aim of this Plan is to transform the economic landscape, while strengthening the delivery of basic services and creating new employment opportunities. This Plan also supports the integration of African communities, and also sets out the challenges and enablers that our country needs in order to respond to the planning and development of infrastructure with regards to fostering economic growth (RSA, 2012). The Plan has developed eighteen (18) strategic integrated projects (further referred to as SIPs). These SIPs stretch over all nine (9) provinces, covering social and economic infrastructure, and projects that enhances development and growth. Of the eighteen (18), five (5) are geographically focused, three (3) spatial, three (3) energy, three (3) social infrastructure, two (2) knowledge, one (1) regional integration, and one (1) water and sanitation focused. The three (3) SIPs according to the Plan, which are energy focused and correlate to the proposed project are as follow:</p>			

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- SIP 8: Green energy in support of the South African economy;
- SIP 9: Electricity generation to support socio-economic development; and
- SIP 10: Electricity transmission and distribution for all.

SIP 8 according to the Plan “support sustainable green energy initiatives on a national scale through a diverse range of clean energy options as envisaged in the IRP 2010 and support bio-fuel production facilities”. The purpose of SIP 9 according to the Plan is to “accelerate the construction of new electricity generation capacity in accordance with the IRP 2010 to meet the needs of the economy and address historical imbalances”. SIP 9 should also monitor the implementation of major projects such as new power stations like Medupi, Kusile and Ingula. Lastly, SIP 10 aims to “expand the transmission and distribution network to address historical imbalances, provide access to electricity for all and support economic development” (RSA, 2012:20).

The proposed Grid Connection Infrastructure for the authorised Phofu Power Plant is in line with this plan as it proposes the generation of renewable energy from the solar resource which supports socio-economic development and will contribute to meeting the electricity demand of the country as set out in this plan. The proposed grid connection solution will enable the evacuation of the generated electricity from the solar energy facility mentioned above.

3. Is the land use (associated with the activity being applied for) considered within the timeframe intended by the existing approved SDF agreed to by the relevant environmental authority (i.e. is the proposed development in line with the projects and programmes identified as priorities within the credible IDP)?	YES	NO	Please explain
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In terms of key performance areas, the Moqhaka Local Municipality IDP(2022-2027) identifies electricity and energy as basic service delivery needs. In the municipality’s electricity programme, a key priority area was identified, and its strategy is to “expand the electrification programme to any remaining areas and roll out solar energy in any identified areas at prescribed standards”.

Therefore, it can be deduced that the IDP of the Moqhaka Local Municipality within which the proposed Phofu Grid Connection Infrastructure and authorised Phofu Solar Power Plant is located supports the development of renewable energy projects and seeks to promote such developments in line with their policies and programmes.

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<p>4. Does the community/area need the activity and the associated land use concerned (is it a societal priority)? (This refers to the strategic as well as local level (e.g. development is a national priority, but within a specific local context it could be inappropriate.)</p>	YES	NO	Please explain
<p>Eskom is currently facing an increased demand for electricity and as a result are forced to implement rolling blackouts (loadshedding) which has severe negative implications for communities and critical sectors of the economy. The municipality's IDP (2022-2027) seeks to change this situation and have implemented strategies to expand its electricity programme to include renewable energy sources. This is also in line with national targets. Diversifying the sources of power in the country represents a solution that also leads to significant positive benefits including sustainable practises as the generation of renewable energy emits no greenhouse gases during the operational phase.</p> <p>In addition, we can state that an effective public participation process is in place to ensure involvement of the affected communities. Engagement will be implemented at all levels to ensure all enquiries or concerns are handled in a manner that is beneficial to all.</p> <p>This project has the potential to increase economic growth by assisting in removing supply constraints experienced by Eskom.</p>			
<p>5. Are the necessary services with adequate capacity currently available (at the time of application), or must additional capacity be created to cater for the development? (Confirmation by the relevant Municipality in this regard must be attached to the final Basic Assessment Report as Appendix I.)</p>	YES	NO	Please explain
<p>Confirmation of services will be sought by the Applicant after from the municipality along with other permitting requirements following the Basic Assessment Process.</p>			
<p>6. Is this development provided for in the infrastructure planning of the municipality, and if not what will the implication be on the infrastructure planning of the municipality (priority and placement of services and opportunity costs)? (Comment by the relevant Municipality in this regard must be attached to the final Basic Assessment Report as Appendix I.)</p>	YES	NO	Please explain
<p>From a local perspective the need for renewable energy development within the municipal area has been specified in the Moqhaka Local Municipality Draft Integrated Development Plan (IDP) 2022/2027, and the SDF (2013). The development of the proposed Phofu Grid Connection Infrastructure for the authorised Phofu Solar Power Plant is required to enable evacuation of the generated electricity to the national grid.</p>			

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7. Is this project part of a national programme to address an issue of national concern or importance?	YES	NO	Please explain
<p>The proposed Grid Connection Infrastructure for the authorised Phofu Solar Power Plant is intended to form part of the Department of Mineral Resources and Energy's (DMREs) Renewable Energy Independent Power Producer Procurement (REIPPP) Programme or any other appropriate energy generation programmes / opportunities. The REIPPP Programme aims to secure 14 725 Megawatts (MW) of new generation capacity from renewable energy sources, while simultaneously diversifying South Africa's electricity mix. The development of the proposed grid connection solution is required to enable evacuation of the generated electricity to the national grid.</p>			
8. Do location factors favour this land use (associated with the activity applied for) at this place? (This relates to the contextualisation of the proposed land use on this site within its broader context.)	YES	NO	Please explain
<p>The proposed grid connection corridor and substation assessment area are considered to be the most feasible option for the location of this infrastructure, taking technical and environmental issues into consideration. The proposed grid connection corridor is approximately 7km long, and the proposed route of the power line is the shortest route from the proposed substation to the existing Eskom overhead power line.</p>			
9. Is the development the best practicable environmental option for this land/site?	YES	NO	Please explain
<p>The preferred grid connection corridor was identified by the Applicant through the consideration of both environmental and technical aspects in order to ensure the most feasible and appropriate connection is development for the evacuation of the generated electricity from the authorised Phofu Solar Power Plant. Three alternative routes were considered prior to the lodging of the Application for Environmental Authorisation and submission of the Basic Assessment Report, however only one route / grid connection corridor has been put forward for assessment which will be based on technical feasibility and environmental sensitivity. The other two alternatives that were considered were discarded due to environmental sensitivity and technical feasibility following the receipt of feedback from Eskom by the Applicant which provided guidance.</p>			

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10. Will the benefits of the proposed land use/development outweigh the negative impacts of it?	YES	NO	Please explain
<p>Renewable energy is an eco-friendly energy source with minimal or no emissions, contributing to the mitigation of climate change's adverse effects. In contrast to coal, renewable energy has a lower water consumption, a crucial factor in water-scarce regions like South Africa. This shift offers numerous advantages, including improved public health, local job opportunities, and combating climate change. The proposed development underscores the principles of sustainable growth, as solar power is recognized as a clean energy source that aids in reducing greenhouse gas emissions and combating global warming.</p> <p>The project's impact is expected to extend far beyond its immediate effects, with significant long-term, indirect social benefits that could reach regional and national levels. The broader implications arise from the use of solar power and the knowledge gained from building and operating the power plant, along with the associated grid infrastructure. This knowledge can be applied to other solar installations throughout South Africa in the future.</p> <p>One of the primary advantages of this proposed development in the region is its aim in employing local businesses and contractors during the construction phase, where such services and skill is available. Additionally, the operational phase will create permanent employment opportunities for local communities in the surrounding areas. This will involve hiring full-time security personnel and general laborers, specifically to support the Phofu Solar Power Plant and the Phofu Grid Connection Infrastructure.</p>			
11. Will the proposed land use/development set a precedent for similar activities in the area (local municipality)?	YES	NO	Please explain
<p>Grid connection infrastructure, such as the Phofu Grid Connection Infrastructure proposed, is present within the local municipality for the transmission and distribution of electricity via the Eskom National Grid. The proposed infrastructure will not set a precedent for similar activities since it is regarded as essential infrastructure to the national grid which has been development within the landscape of extended periods of time.</p>			
12. Will any person's rights be negatively affected by the proposed activity/ies?	YES	NO	Please explain
<p>Affected landowners have been consulted from the outset of the EIA process and have been informed about the availability of the draft basic assessment report (DBAR) and thereby have been provided with an opportunity to raise any concerns that might be significant. To date no significant comments or issues have been raised.</p>			

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13. Will the proposed activity/ies compromise the “urban edge” as defined by the local municipality?	YES	NO	Please explain
<p>Surrounding landowners have been consulted as part of the Public Participation Process (PPP) from the outset of the Basic Assessment process. Comments and responses are included in Appendix E3.</p>			
14. Will the proposed activity/ies contribute to any of the 17 Strategic Integrated Projects (SIPs)?	YES	NO	Please explain
<p>It is expected that the development of the Phofu Grid Connection Infrastructure will contribute to SIP 8 Green energy in support of the South African economy and SIP 9: Electricity generation to support socio-economic development.</p>			
15. What will the benefits be to society in general and to the local communities?	Please explain		
<p>The growing demand for electricity in South Africa has resulted in Eskom not being able to keep up with that demand. This situation manifests itself in the form of rolling blackouts (loadshedding) which negatively impacts on industry and society in general. By diversifying the sources of power, supply will increase, thereby placing less pressure on the reliance on fossil fuels.</p> <p>The proposed project will contribute to local economic growth by supporting industry development in line with provincial and regional goals and ensuring advanced skills are drawn to the Free State province. The project will likely encounter widespread support from government, civil society, and businesses, all of whom see potential opportunities for revenues, employment and business opportunities locally. The development of the authorised Phofu Solar Power Plant and the proposed grid connection infrastructure will in turn lead to growth for local municipalities.</p> <p>An increase in the number of solar facilities commissioned will eventually reduce the cost of the power generated through solar facilities. This will contribute to the country’s objective of utilising more renewable energy and less fossil fuel-based power sources.</p>			

The additional power supplied through solar energy, proposed to be evacuated to the national grid via the proposed grid connection infrastructure, will reduce the reliance on the combustion of fossil fuels to produce power. The South African electricity grid is predominantly coal-fired and therefore GHG emissions intensive. The reduction of GHG emissions as a result of the project implementation will be achieved due to a reduction of CO₂ emissions from combustion of fossil fuel which would likely be built in the absence of the project activity.

The project activity (the authorised Phofu Solar Power Plant and proposed grid connection infrastructure) is likely to have significant long-term, indirect positive social impacts that may extend to a regional and even national scale. The larger scale impacts are to be derived in the utilisation of solar power and the experience gained through the construction and operation of the power plant (including the grid connection infrastructure). In future, this experience can be employed at other similar solar installations in the local area as well as South Africa as a whole.

The main benefit of the proposed development operating in the area is that local companies or contractors will be hired for the duration of the construction period, where the required services, products and skills are available. The operational phase will provide permanent job opportunities to the local communities from the surrounding area since security guards and general labourers will be required on a full-time basis for the operation of the authorised Phofu Solar Power Plant. The benefits of the proposed grid connection infrastructure are therefore directly linked to the benefits associated with the authorised Phofu Solar Power Plant.

16. Any other need and desirability considerations related to the proposed activity?	Please explain
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On a global scale, the project will contribute to greenhouse gas emission reduction and therefore contribute toward climate change mitigation.

The increase in the demand for services such as accommodation, transportation, security, general maintenance and catering will generate additional indirect socio-economic benefits for the local community members.

The proposed development in this specific area will generate alternative land use income through rental, which will have a positive impact on agriculture. It will provide the farming enterprise with increased cash flow and therefore improvement in agricultural practices.

17. How does the project fit into the National Development Plan for 2030?	Please explain
<p>The National Development Plan aims to “eliminate poverty and reduce inequality by 2030” (RSA, undated). In order to eliminate or reduce inequality, the economy of South Africa needs to grow faster in order to benefit all South Africans. In May 2010 a draft national development plan was drafted, which highlighted the nine (9) key challenges for South Africa. The highest priority areas according to the plan are considered to be the creation of employment opportunities and to improve the quality of national education. In this regard, the plan sets out three (3) priority areas, namely, to raise employment by a faster growing economy, improve the quality of education, and to build the capability of the state in order to play a more developmental and transformative role. One of the key challenges identified was that the economy is unsustainably resource intensive and the acceleration and expansion of renewable energy was identified as a key intervention strategy to address this challenge.</p> <p>The development of the grid connection infrastructure to connect the authorised Phofu Solar Power Plant will contribute to the intervention strategy as identified within the plan, albeit to a limited extent.</p>	
18. Please describe how the general objectives of Integrated Environmental Management as set out in section 23 of NEMA have been taken into account.	
<p>The objectives listed in Section 23 of NEMA have been considered and met through:</p> <ul style="list-style-type: none"> • Identifying, predicting and evaluating the potential positive and negative impacts on the environment associated with the proposed Phofu Grid Connection Infrastructure as part of this Basic Assessment process. • Undertaking of independent specialist studies to inform the impact assessment, including impacts on the biophysical, visual and heritage/cultural environments. • Consideration has been given to the mitigation hierarchy which has led the Applicant to assessing the preferred alternative from an environmental and technical perspective. • A public participation process has been undertaken as per the requirements of the EIA Regulations in order to ensure all I&APs and stakeholders are afforded the opportunity to participate in decisions that affect their environment. <p>The Environmental Management Programmes provide appropriate mitigation measures for the reduction of the negative impact significance to acceptable levels. Refer to Appendix G of this report.</p>	

19. Please describe how the principles of environmental management as set out in section 2 of NEMA have been taken into account.

Principles of section 2 of NEMA have been considered through this Basic Assessment process in order to ensure that the proposed development will be appropriate from both an environmental and social perspective and that the proposed Phofu Grid Connection Infrastructure will be sustainable without having a detrimental impact on the biophysical and social environments.

10. APPLICABLE LEGISLATION, POLICIES AND/OR GUIDELINES

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

Title of legislation, policy or guideline	Applicability to the project	Administering authority	Date
The Constitution of South Africa (Act No. 108 of 1996)	The Constitution is the supreme law of the Republic, and all law and conduct must be consistent with the Constitution. The Chapter on the Bill of Rights contains a number of provisions, which are relevant to securing the protection of the environment. Section 24 states that "everyone has the right to (a) an environment that is not harmful to their health or well-being and (b) to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that – (i) prevent pollution and ecological degradation; (ii) promote conservation; and (iii) secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development. The Constitution, therefore, compels government to give effect to the people’s environmental right and places government under a legal duty to act as a responsible custodian of the country’s environment. It compels government to pass legislation and use other measures to protect the environment, to prevent pollution and ecological degradation, promote	National Government	1996

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	<p>conservation and secure sustainable development.</p> <p>The development of the Phofu Solar Power Plant, and the proposed Phofu Grid Connection Infrastructure, and the aspects related thereto considers the creation of an environment which is not harmful or degraded through the implementation of appropriate mitigation measures.</p>		
<p>The National Environmental Management Act (Act No. 107 of 1998)</p>	<p>NEMA provides for co-operative governance by establishing principles and procedures for decision-makers on matters affecting the environment. An important function of the Act is to serve as an enabling Act for the promulgation of legislation to effectively address integrated environmental management. Some of the principles in the Act are accountability; affordability; cradle to grave management; equity; integration; open information; polluter pays; subsidiary; waste avoidance and minimisation; co-operative governance; sustainable development; and environmental protection and justice.</p> <p>The mandate for EIA lays with the National Environmental Management Act (107 of 1998) and the EIA Regulations No. 324, 325, 326, and 327 promulgated in terms of Section 24 of NEMA. The EIA Regulations determine that an Environmental Authorisation is required for certain listed</p>	<p>The National Department of Forestry, Fisheries, and the Environment (DFFE), and the Free State Province Department of Economic, Small Business Development, Tourism and Environmental Affairs (DESTEA)</p>	<p>1998</p>

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	<p>activities, which might have a detrimental effect on the environment.</p> <p>The Basic Assessment process undertaken for the Phofu Grid Connection Infrastructure, as per Regulation 11, is in-line with the requirements of NEMA for the Application for Environmental Authorisation.</p>		
The National Energy Act (Act No. 34 of 2008)	<p>One of the objectives of the National Energy Act was to promote diversity of supply of energy and its sources. In this regard, the preamble makes direct reference to renewable resources, including solar: "To ensure that diverse energy resources are available, in sustainable quantities, and at affordable prices, to the South African economy, in support of economic growth and poverty alleviation, taking into account environmental management requirements (...); to provide for (...) increased generation and consumption of renewable energies..." (Preamble).</p> <p>Considering that the Phofu Solar Power Plant is proposed to make use of PV technology and the solar resource for the generation of electricity, the proposed project is in-line with the Act. The proposed Phofu Grid Connection Infrastructure will cater for the solar power plant and will enable the evacuation of the generated electricity to the national grid.</p>	Department of Mineral Resources and Energy	2008
Electricity Regulation Act (Act No. 4 of	The Act provides a national regulatory framework for the electricity supply industry. The Act requires registration and licensing of anyone wanting to	National Energy Regulator of South	2006

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<p>2006) (as amended)</p>	<p>generate, transmit, reticulate, distribute, trade, or import and export electricity.</p> <p>One of the requirements for the REIPPPP is for the Proponent to obtain an environmental authorisation for the proposed project. The REIPPPP is guided by the National Energy Act, one of the purposes of which is to promote sustainable development of renewable energy infrastructure.</p>	<p>Africa (NERSA)</p>	
<p>The National Water Act (Act No. 36 of 1998)</p>	<p>Sustainability and equity are identified as central guiding principles in the protection, use, development, conservation, management and control of water resources. The intention of the Act is to promote the equitable access to water and the sustainable use of water, redress past racial and gender discrimination, and facilitate economic and social development. The Act provides the rights of access to basic water supply and sanitation, and environmentally, it provides for the protection of aquatic and associated ecosystems, the reduction and prevention of pollution and degradation of water resources.</p> <p>As this Act is founded on the principle that National Government has overall responsibility for and authority over water resource management, including the equitable allocation and beneficial use of water in the public interest, a</p>	<p>Department of Water and Sanitation</p>	<p>1998</p>

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	<p>person can only be entitled to use water if the use is permissible under the Act. Chapter 4 of the Act lays the basis for regulating water use.</p> <p>The Freshwater Ecology Compliance Statement (Appendix D2) identified the presence of wetlands (wetland flatt and depression wetland) within the grid connection corridor. The relevant water use licensing (WULA or General Authorisation) will need to be applied for, as relevant. The National Water Act will be applicable in terms of obtaining the relevant license.</p>		
National Environmental Management: Biodiversity Act (10 of 2004) (NEMBA)	<p><i>"The Act calls for the management of all biodiversity within South Africa. The 2007 Threatened or Protected Species Regulations (GN R150, as amended) provides protection through a permit system as well as through the identification of restricted activities. If required, the relevant permits will be applied for."</i></p> <p>The Act also provides for duty of care with regards to control of alien species.</p>	Department of Forestry, Fisheries and the Environment (DFFE)	2004
National Environmental Management: Waste Act (Act No. 59 of	NEMWA has been developed as part of the law reform process enacted through the White Paper on Integrated Pollution and Waste Management and the National Waste Management Strategy (NWMS). The objectives of the Act relate to the provision of measures to protect health, well-being and the environment, to ensure that people are aware of the impact of waste on	Department of Forestry, Fisheries and the Environment)	2008

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2008)	<p>their health, well-being and the environment, to provide for compliance with the measures, and to give effect to section 24 of the Constitution in order to secure an environment that is not harmful to health and well-being.</p> <p>Regulations No. R921 (of 2013) promulgated in terms of Section 19(1) of the National Environmental Management: Waste Act (59 of 2008) determines that no person may commence, undertake or conduct a waste management activity listed in this schedule unless a license is issued in respect of that activity. It is not envisaged that a waste permit will be required for the proposed development as no listed activities in terms of waste management are expected to be triggered.</p>		
National Environment Management: Air Quality Act (Act No. 39 of 2004)	<p>The object of this Act is to protect the environment by providing reasonable measures for the protection and enhancement of the quality of air in the Republic; the prevention of air pollution and ecological degradation; and securing ecologically sustainable development while promoting justifiable economic and social development.</p> <p>Regulations No. R248 (of 31 March 2010) promulgated in terms of Section 21(1)(a) of the National Environmental Management Act: Air Quality Act (39 of 2004) determine that an Atmospheric Emission License (AEL) is required for certain listed activities, which result in atmospheric emissions which have or may have a detrimental effect on the environment. The Regulation also</p>	Department of Forestry, Fisheries and the Environment (DFFE)	2004

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	<p>sets out the minimum emission standards for the listed activities. It is not envisaged that an Atmospheric Emission License will be required for the proposed development.</p>		
<p>The National Heritage Resources Act (Act No. 25 of 1999)</p>	<p>The Act aims to introduce an integrated and interactive system for the management of heritage resources, to promote good governance at all levels, and empower civil society to nurture and conserve heritage resources so that they may be bequeathed to future generations and to lay down principles for governing heritage resources management throughout the Republic. It also aims to establish the South African Heritage Resources Agency together with its Council to co-ordinate and promote the management of heritage resources, to set norms and maintain essential national standards and to protect heritage resources, to provide for the protection and management of conservation-worthy places and areas by local authorities, and to provide for matters connected therewith.</p> <p>The Act protects and manages certain categories of heritage resources in South Africa. For the purposes of the Heritage Resources Act, a “heritage resource” includes any place or object of cultural significance. In this regard the Act makes provision for a person undertaking an activity listed in Section 28 of the Act to notify the resources authority. The resources authority may request that a heritage impact assessment be conducted if</p>	<p>South African Heritage Resources Agency (SAHRA)</p>	<p>1999</p>

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	<p>there is reason to believe that heritage resources will be affected.</p> <p>A case file has been opened on SAHRIS for the Phofu Grid Connection Infrastructure and the relevant documents have been submitted for their comments and approval. The Heritage Impact Assessment undertaken for the project is included as Appendix D5. The Heritage Impact Assessment considers and assesses the impact of the development on archaeology, palaeontology and cultural heritage. The specialist has recommended specific mitigation measures that needs to be adhered.</p>		
<p>Conservation of Agricultural Resources Act (Act No. 85 of 1983)</p>	<p>The objective of the Act is to provide control over the utilisation of the natural agricultural resources of the Republic in order to promote the conservation of the soil, the water sources and the vegetation and the combating of weeds and invader plants; and for matters connected therewith.</p> <p>Consent will be required from the Department of Agriculture, Forestry and Fisheries (now known as the Department of Forestry, Fisheries and the Environment) in order to confirm that the proposed developments are not located on high potential agricultural land and to approve the long-term lease agreement.</p>	<p>National and Provincial Government</p>	<p>1983</p>

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	A Soils and Agricultural Compliance statement has been undertaken for the Phofu Grid Connection Infrastructure and is included as Appendix D3.		
Subdivision of Agricultural Land Act (70 of 1970) (SALA)	The purpose of this Act is to control the subdivision of agricultural land and, in connection therewith, the use of agricultural land. Applications are lodged with Department of Agriculture, Land Reform and Rural Development (DALRRD) to allow for the subdivision of agricultural land, as well as other prohibited actions in terms of the Act. In order to limit the potential threat that solar energy development could pose to agricultural production and to the agricultural economy, DALRRD created the 10% rule to inform the decision of whether a solar energy development on agricultural land should be approved or not. This rule states that a solar energy facility may not utilise more than 10% of the surface area of a farm. Its aim was to ensure that each farm unit remained predominantly agricultural rather than certain farms abandoning agricultural production in favour of renewable energy generation.	Department of Agriculture, Land Reform and Rural Development (DALRRD)	1970
Spatial Planning and Land Use Management Act, 2013 (Act 16 of 2013) (SPLUMA)	This suite of legislation provides the framework for spatial planning and regulates the use and development of land.	Provincial Authority	2013

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<p>The National Forests Act, 1998 (Act 84 of 1998)</p>	<p>The purposes of this Act are to:</p> <ul style="list-style-type: none"> (a) promote the sustainable management and development of forests for the benefit of all; (b) create the conditions necessary to restructure forestry in State forests; (c) provide special measures for the protection of certain forests and trees: (d) promote the sustainable use of forests for environmental, economic, educational, recreational, cultural, health and spiritual purposes. (e) promote community forestry; (f) promote greater participation in all aspects of forestry and the forest products industry by persons disadvantaged by unfair discrimination. <p>Section 12(1) read with s15(1) of the NFA stated that the Minister may declare a particular tree, group of trees, woodland; or trees belonging to a particular species, to be a protected tree, group of trees, woodland or species. A list of protected tree species was gazetted in GN 635 of 6 December 2019. The effect of the declaration is that no person may (a) cut, disturb, damage or destroy; or (b) possess, collect, remove, transport, export, purchase, sell, donate or in any other manner acquire</p>	<p>Department of Forestry, Fisheries and the Environment (DFFE)</p>	<p>1998</p>
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	<p>or dispose of any protected tree, or any forest product derived from a protected tree, except under a license granted by the Minister; or in terms of an exemption published by the Minister in the Gazette.</p> <p>A Terrestrial Biodiversity Compliance Statement has been undertaken for the Phofu Grid Connection and is included in Appendix D1.</p>		
National Road Traffic Act (Act 93 of 1996) (NRTA)	<p>Certain vehicles and loads cannot be moved on public roads without exceeding the limitations in terms of the dimensions and/or mass as prescribed in the Regulations of the NRTA. Due to the large size of some of the facility's component, they will need to be transported via "abnormal loads".</p> <p>The grid connection corridor is directly adjacent to the R76 therefore providing easy access from national roads. The access roads authorised as part of the Phofu Solar Power Plant will be utilised for the construction of the proposed grid connection infrastructure. A twin-track service road will be placed under the power line, where such roads are not readily available in the grid connection corridor.</p>	Department Roads and Public Works	1996
The White Paper on the Energy Policy of	The White Paper on the Energy Policy of the Republic of South Africa establishes the international and national policy context for the energy sector, and identifies	Department of Mineral Resources	1998

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<p>the Republic of South Africa</p>	<p>the following energy policy objectives:</p> <ul style="list-style-type: none"> • Increasing access to affordable energy services • Improving energy governance • Stimulating economic development • Managing energy-related environmental and health impacts • Securing supply through diversity • Energy policy priorities <p>The White Paper sets out the advantages of renewable energy and states that Government believes that renewables can in many cases provide the least cost energy service, particularly when social and environmental costs are included. The White Paper acknowledges that South Africa has neglected the development and implementation of renewable energy applications, despite the fact that the country's renewable energy resource base is extensive, and many appropriate applications exist.</p> <p>The White Paper notes that renewable energy applications have specific characteristics that need to be considered. Advantages include:</p> <ul style="list-style-type: none"> • Minimal environmental impacts in operation in comparison with traditional supply technologies; and 	<p>and Energy</p>	
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	<ul style="list-style-type: none"> • Generally lower running costs, and high labour intensities. <p>Disadvantages include:</p> <ul style="list-style-type: none"> • Higher capital costs in some cases; • Lower energy densities; and • Lower levels of availability, depending on specific conditions, especially with sun and wind-based systems. <p>The Phofu Solar Power Plant is in line with this policy as it proposes the generation of renewable energy from the solar resource. The Phofu Grid Connection Infrastructure will enable the evacuation of the generated electricity to the national grid from the authorised solar power plant.</p>		
<p>The White Paper on Renewable Energy</p>	<p>This White Paper on Renewable Energy supplements the White Paper on Energy Policy, which recognises that the medium and long-term potential of renewable energy is significant. This Paper sets out Government’s vision, policy principles, strategic goals and objectives for promoting and implementing renewable energy in South Africa.</p> <p>The White Paper notes that while South Africa is well-endowed with renewable energy resources that have the potential to become sustainable alternatives to fossil fuels, these have thus far remained largely untapped. Government’s long-term goal is the establishment of a renewable energy industry producing modern energy carriers that will offer in future years a sustainable, fully non-subsidised</p>	<p>Department of Mineral Resources and Energy</p>	<p>2003</p>

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	<p>alternative to fossil fuels. The medium-term (10-year) target set in the White Paper is: 10 000 GWh (0.8 Mtoe) renewable energy contribution to final energy consumption by 2013, to be produced mainly from biomass, wind, solar and small-scale hydro. The renewable energy is to be utilised for power generation and non-electric technologies such as solar water heating and bio-fuels. This is approximately 4% (1667 MW) of the projected electricity demand for 2013 (41539 MW) (Executive Summary, ix).</p> <p>The Phofu Solar Power Plant is in line with this paper as it proposes the generation of renewable energy from the solar resource. The Phofu Grid Connection Infrastructure will enable the evacuation of the generated electricity to the national grid.</p>		
<p>Integrated Resource Plan (IRP) for South Africa</p>	<p>The Integrated Resource Plan for Electricity for South Africa of 2010–2030 (further referred to as the IRP) is a “living plan” which is expected to be revised and updated continuously as necessary due to changing circumstances. According to the Summary of the plan the current IRP for South Africa, which was originally initiated by the Department of Energy (DoE) in June 2010 (the Department is now known as Department of Mineral Resources and Energy), led to the Revised Balanced Scenarios (RBS) for the period 2010–2030.</p> <p>The IRP recommends that an accelerated roll-out in renewable energy options should be allowed with regards to the benefits of the localization in renewable energy technologies (RSA, 2011a). It is however important to take note that since</p>	<p>Department of Mineral Resources and Energy</p>	<p>2010-2030</p>

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	<p>the release of the IRP in 2011 there has been a number of developments in the energy sector of South Africa. Therefore, the IRP was updated and was open for comments until March of 2017. The new IRP of 2019 was formally published in October 2019. For the revision scenario, analysis was conducted. The results revealed that for the period ending 2030 that: “The committed Renewable Energy Independent Power Producers Programme, including the 27 signed projects and Eskom capacity rollout ending with the last unit of Kusile in 2022, will provide more than sufficient capacity to cover the projected demand and decommissioning of plants up to approximately 2025”; “Imposing annual build limits on renewable energy will not affect the total cumulative capacity and the energy mix for the period up to 2030”; and “the scenario without renewable energy annual build limits provides the least-cost option by 2030” (RSA, 2018:34).</p> <p>In the final IRP of 2019 key considerations were taken into account together with required actions to be taken for the IRP of 2019 to be credible. In terms of renewable energy technologies like solar and wind, the IRP stated that “The application of renewable build limits ‘smoothes out’ the capacity allocations for wind and solar PV which provides a constant pipeline of projects to investment; this addresses investor confidence”. The decision stated against this key consideration is to “retain the current annual build limits on renewables (wind and PV) pending the finalization of a just transition plan” (RSA, 2019:46). Hereby the</p>		
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	<p>IRP also recognises renewable technologies’ potential to diversify the electricity mix, create new industries and job opportunities and localize across the value chain (RSA, 2019:13).</p> <p>The Phofu Solar Power Plant is in line with this plan as it proposes the generation of renewable energy from the solar resource and will contribute to the energy mix of the country as set out in this plan. The Phofu Grid Connection Infrastructure will enable the evacuation of the generated electricity to the national grid from the authorised solar power plant.</p>		
National Development Plan of 2030	<p>The National Development Plan aims to “eliminate poverty and reduce inequality by 2030” (RSA, undated). In order to eliminate or reduce inequality, the economy of South Africa needs to grow faster in order to benefit all South Africans. In May 2010 a draft national development plan was drafted, which highlighted the nine (9) key challenges for South Africa. The highest priority areas according to the plan are considered to be the creation of employment opportunities and to improve the quality of national education. In this regard, the plan sets out three (3) priority areas, namely, to raise employment by a faster growing economy, improve the quality of education, and to build the capability of the state in order to play a more developmental and transformative role. One of the key challenges identified was that the economy is unsustainably resource intensive and the acceleration and expansion of renewable energy was identified as a key intervention strategy to</p>	The Presidency: National Planning Commission	-

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	<p>address this challenge.</p> <p>The development of the Phofu Solar Power Plant will contribute to the intervention strategy as identified within the plan. The Phofu Grid Connection Infrastructure will enable the evacuation of the generated electricity to the national grid.</p>		
National Infrastructure Plan of South Africa	<p>In the year 2012 the South African Government adopted a National Infrastructure Plan (hereafter referred to as the Plan). The aim of this Plan is to transform the economic landscape, while strengthening the delivery of basic services and creating new employment opportunities. This Plan also supports the integration of African communities, and also sets out the challenges and enablers that our country needs in order to respond to the planning and development of infrastructure with regards to fostering economic growth (RSA, 2012). The Plan has developed eighteen (18) strategic integrated projects (further referred to as SIPs). These SIPs stretch over all nine (9) provinces, covering social and economic infrastructure, and projects that enhances development and growth. Of the eighteen (18), five (5) are geographically focused, three (3) spatial, three (3) energy, three (3) social infrastructure, two (2) knowledge, one (1) regional integration, and one (1) water and sanitation focussed. The three (3) SIPs according to the Plan, which are energy focused and correlate to the proposed project are as follow:</p> <ul style="list-style-type: none"> - SIP 8: Green energy in support of the South African economy; - SIP 9: Electricity generation to support socio-economic development; 	Presidential Infrastructure Coordinating Commission	2012

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	<p style="text-align: center;">and</p> <ul style="list-style-type: none"> - SIP 10: Electricity transmission and distribution for all. <p>SIP 8 according to the Plan <i>“support sustainable green energy initiatives on a national scale through a diverse range of clean energy options as envisaged in the IRP 2010 and support bio-fuel production facilities”</i>. The purpose of SIP 9 according to the Plan is to <i>“accelerate the construction of new electricity generation capacity in accordance with the IRP 2010 to meet the needs of the economy and address historical imbalances”</i>. SIP 9 should also monitor the implementation of major projects such as new power stations like Medupi, Kusile and Ingula. Lastly, SIP 10 aims to <i>“expand the transmission and distribution network to address historical imbalances, provide access to electricity for all and support economic development”</i> (RSA, 2012:20).</p> <p>The development of the Phofu Solar Power Plant is in line with this plan as it proposes the generation of renewable energy from the solar resource which supports socio-economic development and will contribute to meeting the electricity demand of the country as set out in this plan. The Phofu Grid Connection Infrastructure will enable the evacuation of the generated electricity to the national grid from the authorised Phofu Solar Power Plant.</p>		
New Growth Path	The New Growth Path was developed after 16 years of South Africa’s democracy,	Department	of -

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<p>Framework</p>	<p>to respond to emerging opportunities and risks while building on policies. This framework provides a dynamic vision on how to collectively achieve a more developed, equitable and democratic society and economy. This framework mainly reflects the commitment of the South African Government to create employment opportunities for its people in all economic policies (RSA, 2011b).</p> <p>This framework sets out the markers for job creation and growth and also identify where there are viable changes in the character and structure of production, in order to create a more inclusive, greener economy in the long-term. It is stated in the framework that in order for this framework to reach its objectives, the Government is committed to:</p> <ul style="list-style-type: none"> - Identify the possible areas of employment creation; and - Develop a policy to facilitate employment creation especially with regards to social equity, sustainable employment and growth in the creation of employment activities (RSA, 2011b). <p>This framework also identifies investments in five key areas, one of which is energy. This framework also states that the green economy is a priority area, which includes the construction of and investment in renewable energy technologies like solar (RSA, 2011b). In this regard it will also assist creating employment opportunities over the medium- and long-term.</p> <p>Considering that the construction of and investment in renewable energy is a key area identified within the framework, the development of the Phofu Solar Power</p>	<p>Economic Development</p>	
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	<p>Plant is considered to be in-line with the framework. The Phofu Grid Connection Infrastructure will enable the evacuation of the generated electricity to the national grid from the authorised Phofu Solar Power Plant.</p>		
<p>Climate Change Bill</p>	<p>On 08 June 2018 the Minister of Environmental Affairs published the Climate Change Bill (“the Bill”) for public comment. The Bill provides a framework for climate change regulation in South Africa aimed at governing South Africa’s sustainable transition to a climate resilient, low carbon economy and society. The Bill provides a procedural outline that will be developed through the creation of frameworks and plans. The following objectives are set within the Bill:</p> <ul style="list-style-type: none"> • Provide for the coordinated and integrated response to climate change and its impacts by all spheres of government in accordance with the principles of cooperative governance; • Provide for the effective management of inevitable climate change impacts through enhancing adaptive capacity, strengthening resilience and reducing vulnerability to climate change, with a view to building social, economic, and environmental resilience and an adequate national adaptation response in the context of the global climate change response; • Make a fair contribution to the global effort to stabilise greenhouse gas concentrations in the atmosphere at a level that avoids dangerous anthropogenic interference with the climate system within a timeframe and 	<p>National Department of Forestry, Fisheries and the Environment (DFFE)</p>	<p>2018</p>

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	<p>in a manner that enables economic, employment, social and environmental development to proceed in a sustainable manner.</p> <p>The Phofu Solar Power Plant comprises the development of a renewable energy generation facility and would not result in the generation or release of emissions during its operation. The Phofu Grid Connection Infrastructure will enable the evacuation of the generated electricity to the national grid.</p>		
Climate Change Bill	<p>The Department of Forestry, Fisheries and the Environment has published a new Climate Change Bill for public comment. The bill notes that climate change represents an urgent threat to human societies and the planet, and requires an effective, progressive and incremental response from both government and citizens.</p> <p>It recognises that South Africa has a global responsibility to reduce greenhouse gasses and that the anticipated impacts arising as a result of climate change have the potential to undermine achieving of the country's developmental goals.</p> <p>The main objective of the bill is to enable the development of an effective climate change response and the long-term, just transition to a climate-resilient and lower-carbon economy and society, and to provide for matters connected therewith.</p> <p>The Phofu Solar Power Plant comprises the development of a renewable energy generation facility and would not result in the generation or release of emissions</p>	National Department of Forestry, Fisheries and the Environment (DFFE)	2021

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	during its operation. The Phofu Grid Connection Infrastructure will enable the evacuation of the generated electricity to the national grid from the authorised solar power plant.		
Strategic Integrated Projects (SIPs)	<p>The Presidential Infrastructure Coordinating Committee (PICC) is integrating and phasing investment plans across 18 Strategic Infrastructure Projects (SIPs) which have five core functions: to unlock opportunity, transform the economic landscape, create new jobs, strengthen the delivery of basic services and support the integration of African economies. A balanced approach is being fostered through greening of the economy, boosting energy security, promoting integrated municipal infrastructure investment, facilitating integrated urban development, accelerating skills development, investing in rural development and enabling regional integration. SIP 8 and 9 of the energy SIPs supports the development of the solar energy facility:</p> <ul style="list-style-type: none"> • SIP 8: Green energy in support of the South African economy: Support sustainable green energy initiatives on a national scale through a diverse range of clean energy options as envisaged in the Integrated Resource Plan (IRP 2010 – 2030) and supports bio-fuel production facilities. • SIP 9: Electricity generation to support socio-economic development: The proposed Phofu Solar Power Plant is a potential SIP 9 Project as electricity will be generated and social and economic upliftment, development and 	The Presidential Infrastructure Coordinating Committee	2010-2030

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	<p>growth will take place within the surrounding communities. It would become a SIP 9 project if selected as Preferred Bidder projects by the Department of Mineral Resources and Energy. SIP 9 supports the acceleration of the construction of new electricity generation capacity in accordance with the IRP 2010 to meet the needs of the economy and address historical imbalances.</p> <p>The Phofu Grid Connection Infrastructure will enable the evacuation of the generated electricity to the national grid which is considered to be green energy.</p>		
<p>Strategic Environmental Assessment (SEA) for wind and solar PV Energy in South Africa</p>	<p>The then Department of Environmental Affairs (DEA) has committed to contribute to the implementation of the National Development Plan and National Infrastructure Plan by undertaking Strategic Environmental Assessments (SEAs) to identify adaptive processes that integrate the regulatory environmental requirements for Strategic Integrated Projects (SIPs) while safeguarding the environment. The wind and solar photovoltaic (PV) SEA were accordingly commissioned by DEA in support of SIP 8, which aims to facilitate the implementation of sustainable green energy initiatives.</p> <p>This SEA identifies areas where large scale wind and solar PV energy facilities can be developed in terms of SIP 8 and in a manner that limits significant negative impacts on the environment, while yielding the highest possible socio-economic</p>	<p>National Department of Forestry, Fisheries and the Environment (DFFE)</p>	<p>2014</p>

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	<p>benefits to the country. These areas are referred to as Renewable Energy Development Zones (REDZs).</p> <p>The REDZs also provide priority areas for investment into the electricity grid. Currently one of the greatest challenges to renewable energy development in South Africa is the saturation of existing grid infrastructure and the difficulties in expanding the grid. Proactive investment in grid infrastructure is the likely to be the most important factor determining the success of REDZs. Although it is intended for the SEA to facilitate proactive grid investment in REDZs, such investment should not be limited to these areas. Suitable wind and solar PV development should still be promoted across the country and any proposed development must be evaluated on its own merit.</p> <p>The authorised Phofu Solar Power Plant and proposed Phofu Grid Connection Infrastructure are located within the central corridor of the Strategic Transmission Corridors and the Klerksdorp Renewable Energy Development Zone.</p>		
Free State Provincial Spatial Development Framework (PSDF)	The Free State PSDF is a policy document that promotes a 'developmental state' in accordance with national and provincial legislation and directives. It aligns with the Free State Provincial Growth and Development Strategy which has committed the Free State to 'building a prosperous, sustainable and growing provincial economy which reduces poverty and improves social development'.	Free State Provincial Government	2012

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	<p>The PSDF includes comprehensive plans and strategies that collectively indicate which type of land-use should be promoted in the Province, where such land-use should take place, and how it should be implemented and managed. In broad terms, the PSDF:</p> <ul style="list-style-type: none">• Indicates the spatial implications of the core development objectives of the Free State Provincial Growth and Development Strategy.• Serves as a spatial plan that facilitates local economic development.• Lays down strategies, proposals and guidelines as it relates to sustainable development.• Facilitates cross-boundary co-operation between municipalities, adjoining provinces, and bordering countries.• Serves as a manual for integration and standardisation of the planning frameworks of all spheres of government in the Province. <p>The Free State Provincial Growth and Development Strategy states that sustainable economic development is the only effective means by which the most significant challenge of the Free State, namely poverty, can be addressed is. The PSDF gives practical effect to sustainable development, which is defined as development that meets the needs of the present generation without compromising the ability of future generations to meet their own needs.</p>		
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	<p>The PSDF is prepared in accordance with bioregional planning principles that were adapted to suit the site-specific requirements of the Free State. It incorporates and complies with the relevant protocols, conventions, agreements, legislation and policy at all applicable levels of planning, ranging from the international to the local.</p> <p>The PSDF builds upon achievements and learns from mistakes of the past, reacts to the challenges of our time, incorporates the traditional knowledge of the people of the Free State, and builds upon international best-practice and technology.</p> <p>The development of the Phofu Solar Power Plant is in-line with the framework based on the contributions and opportunities presented by development of this nature. The Phofu Grid Connection Infrastructure will enable the evacuation of the generated electricity to the national grid.</p>		
<p>Moqhaka Local Municipality Integrated Development Plan (IDP) 2022-2027</p>	<p>The Moqhaka Local Municipality’s Integrated Development Plan (IDP, 2022-2027) reflects that local economic development has been negatively impacted upon by the effects of COVID-19 in the form of unemployment and economic downturn. The overall aim of the municipality is to improve the quality of life for all residents in their area of jurisdiction. With this in mind, an Energy Plan has been developed for inclusion the IDP and the main purpose is to develop initiatives to reduce energy usage in a sustainable way. One of the key objectives stemming from this is</p>	<p>Moqhaka Local Municipality</p>	<p>2022</p>

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	<p>“To expand the electrification programme to any remaining areas and roll out solar energy in any identified areas as per the prescribed standard.”</p> <p>In addition to this, the IDP recognizes the local Department of Economic, Small Business Development, Tourism, and Environmental Affairs initiative to promote renewable energy which began in April 2022.</p> <p>According to the Moqhaka local municipality’s SDF (2019-2020), one of the key objectives is to expand renewable energy and “promote the development of renewable energy supply schemes”.</p> <p>The IDP of the municipality therefore supports the development of renewable energy generation and seeks to promote such developments as part of improved energy sustainability. The development of the already authorised Phofu Solar Power Plant and proposed Phofu Grid Connection Infrastructure will therefore contribute to the objectives of the Local Municipality, albeit to a limited extent.</p>		
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11. WASTE, EFFLUENT, EMISSION AND NOISE MANAGEMENT

a) Solid waste management

Will the activity produce solid construction waste during the construction/initiation phase?

YES	NO
Unknown	

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

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

All solid waste collected will be disposed of at registered/licensed landfill sites. Skip waste containers and waste collection bins will be maintained on site and the contractor will arrange for them to be collected regularly and transported to the landfill site. Records of all disposals must be kept as proof. Under no circumstances may waste be burned or buried on site, only appropriate disposal must be undertaken.

Hazardous materials and contaminants will be stored carefully in bunded areas in suitable containers to prevent contamination until being disposed of at a licensed landfill site.

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

All solid waste will be disposed of at licensed/registered landfill sites. Where a registered waste site is not available close to the construction site, the Contractor shall provide a method statement with regard to the appropriate waste management and disposal thereof.

Will the activity produce solid waste during its operational phase?

YES	NO
N/A	

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

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

N/A

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

N/A

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

N/A

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

Can any part of the solid waste be classified as hazardous in terms of the NEM:WA?

YES	NO
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 If YES, inform the competent authority and request a change to an application for scoping and EIA. An application for a waste permit in terms of the NEM:WA must also be submitted with this application.

Is the activity that is being applied for a solid waste handling or treatment facility?

YES	NO
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 If YES, then the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA. An application for a waste permit in terms of the NEM:WA must also be submitted with this application.

b) Liquid effluent

Will the activity produce effluent, other than normal sewage, that will be disposed of in a municipal sewage system?

YES	NO
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 If YES, what estimated quantity will be produced per month?

N/A

 Will the activity produce any effluent that will be treated and/or disposed of on site?

YES	NO
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If YES, the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

Will the activity produce effluent that will be treated and/or disposed of at another facility?

YES	NO
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If YES, provide the particulars of the facility:

Facility name:	N/A	
Contact person:		
Postal address:		
Postal code:		
Telephone:	Cell:	
E-mail:	Fax:	

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

Wastewater will not be generated by the proposed grid connection infrastructure, and therefore no measures are applicable.

c) Emissions into the atmosphere

Will the activity release emissions into the atmosphere other than exhaust emissions and dust associated with construction phase activities?

YES	NO
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 If YES, is it controlled by any legislation of any sphere of government?

N/A

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

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

Other than exhaust emissions and dust generated which is associated with construction phase activities, the activity will not release emissions into the atmosphere.

d) Waste permit

Will any aspect of the activity produce waste that will require a waste permit in terms of the NEM:WA?

YES	NO
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If YES, please submit evidence that an application for a waste permit has been submitted to the competent authority

e) Generation of noise

Will the activity generate noise?

YES	NO
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If YES, is it controlled by any legislation of any sphere of government?

YES	NO
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Describe the noise in terms of type and level:

The construction phase activities will generate temporary and limited noise pollution and might lead to disturbance to the nearby landowners and travellers passing along the R76. This can be mitigated by limiting the construction hours to cause minimal disturbance to the surrounding residents and farming community and ensuring the use of equipment which is in a good and maintained condition.

During the operational phase no noise is expected to be generated by the grid connection infrastructure. However, some maintenance activities may create limited noise, where such activities are required to be undertaken.

12. WATER USE

Please indicate the source(s) of water that will be used for the activity by ticking the appropriate box(es):

Municipal	Water board	Groundwater	River, stream, dam or lake	Other – see below	The activity will not use water
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As the Phofu Grid Connection Infrastructure will cater for the authorised Phofu Solar Power Plant, water for the construction phase will be obtained from the water resources of the solar facility. Water for the authorised Phofu Solar Power Plant will most likely be obtained from ground water resources or alternatively collected with

water trucks from an authorized water service provider and stored on site. The final water resource for the Phofu Solar Power Plant will be confirmed by the Applicant in the near future.

If water is to be extracted from groundwater, river, stream, dam, lake or any other natural feature, please indicate the volume that will be extracted per month:

N/A	
YES	NO

Does the activity require a water use authorisation (general authorisation or water use license) from the Department of Water Affairs?

If YES, please provide proof that the application has been submitted to the Department of Water Affairs.

A water use license will be required in terms of the National Water Act as construction needs to take place inside / near any of the wetlands present within the grid connection corridor.

13. ENERGY EFFICIENCY

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

The activity in itself is considered to be energy efficient as the authorised Phofu Solar Power Plant, that the proposed Phofu Grid Connection Corridor will cater for, will use solar energy as a resource for the generation of electricity. Furthermore, energy saving light bulbs will be utilised during the construction and operation phases to further increase the energy efficiency of the solar power plant development.

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

The activity in itself provides the opportunity for the use of alternative energy sources and enables the evacuation of an alternative energy source to the national grid as the Phofu Solar Power Plant will use solar energy as a resource for the generation of electricity which will be evacuated through the development and operation of the proposed Phofu Grid Connection Infrastructure.

SECTION B: SITE/AREA/PROPERTY DESCRIPTION

Important notes:

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

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

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

3. Has a specialist been consulted to assist with the completion of this section?
If YES, please complete the form entitled "Details of specialist and declaration of interest" for each specialist thus appointed and attach it in Appendix I. All specialist reports must be contained in Appendix D.

BASIC ASSESSMENT REPORT

Property description/physical address:

Province	Free State
District Municipality	Fezile Dabi District Municipality
Local Municipality	Moqhaka Local Municipality
Ward Number(s)	21 and 22
Farm name and number	<p><u>Proposed substation for the authorised Phofu Solar Power Plant:</u></p> <ul style="list-style-type: none"> • Portion 3 of the Farm Tweepunt No.14 <p><u>Grid Connection Corridor:</u></p> <ul style="list-style-type: none"> • Remaining Extent, Portion 1, Portion 2 and Portion 3 of the Farm Marseilles No. 24 • Remaining Extent and Portion 3 of the Farm Tweepunt No. 14 • Remaining Extent, Portion 1 and Portion 2 of the Farm Degrendel No. 67 • The Farm Ratpan No. 441 • Portion 3 of the Farm Fraai Uitzicht No. 189 • Portion 2 of the Farm Hormah No. 276 <p><u>Access Road:</u></p> <ul style="list-style-type: none"> • R76 regional road
SG Code	<p><u>Substation for the Authorised Phofu Solar Power Plant:</u></p> <ul style="list-style-type: none"> • Portion 3 of Farm Tweepunt No.14 F03600000000001400003

BASIC ASSESSMENT REPORT

	<p><u>Grid Connection Corridor:</u></p> <ul style="list-style-type: none">• Remaining Extent of the Farm Marseilles No. 24 F03600000000002400000• Portion 1 of the Farm Marseilles No.24 F03600000000002400001• Portion 2 of the Farm Marseilles No.24 F03600000000002400002• Portion 3 of the Farm Marseilles No.24 F03600000000002400003• Remaining Extent of the Farm Tweepunt No. 14 F03600000000001400000• Portion 3 of the Farm Tweepunt No. 14 F03600000000001400003• Remaining Extent of the Farm Degrendel No. 67 F03600000000006700000• Portion 1 of the Farm Degrendel No. 67 F03600000000006700001• Portion 2 of the Farm Degrendel No. 67 F03600000000006700002• The Farm Ratpan No. 441 F03600000000044100000• Portion 3 of the Farm Fraai Uitzicht No. 189 F03600000000018900003• Portion 2 of the Farm Hormah No. 276 F03600000000027600002
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Where a large number of properties are involved (e.g. linear activities), please attach a full list to this application including the same information as indicated above.

BASIC ASSESSMENT REPORT

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

Agriculture

In instances where there is more than one current land-use zoning, please attach a list of current land use zonings that also indicate which portions each use pertains to, to this application.

Is a change of land-use or a consent use application required?

YES	NO
------------	---------------

1. GRADIENT OF THE SITE

Indicate the general gradient of the site.

Alternative S1:

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

Alternative S2 (if any):

Flat	1:50 – 1:20	1:20 – 1:15	1:15 – 1:10	1:10 – 1:7,5	1:7,5 – 1:5	Steeper than 1:5
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Alternative S3 (if any):

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

2. LOCATION IN LANDSCAPE

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

2.1 Ridgeline <input type="checkbox"/>	2.4 Closed valley <input type="checkbox"/>	2.7 Undulating plain / low hills <input type="checkbox"/>
2.2 Plateau <input checked="" type="checkbox"/>	2.5 Open valley <input type="checkbox"/>	2.8 Dune <input type="checkbox"/>
2.3 Side slope of hill/mountain <input type="checkbox"/>	2.6 Plain <input type="checkbox"/>	2.9 Seafront <input checked="" type="checkbox"/>
2.10 At sea <input type="checkbox"/>		

3. GROUNDWATER, SOIL AND GEOLOGICAL STABILITY OF THE SITE

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

	Alternative S1:	Alternative S2 (if any):	Alternative S3 (if any):						
Shallow water table (less than 1.5m deep)	<table border="1" style="border-collapse: collapse;"><tr><td style="padding: 2px 10px;">YES</td><td style="padding: 2px 10px;">NO</td></tr></table>	YES	NO	<table border="1" style="border-collapse: collapse;"><tr><td style="padding: 2px 10px;">YES</td><td style="padding: 2px 10px;">NO</td></tr></table>	YES	NO	<table border="1" style="border-collapse: collapse;"><tr><td style="padding: 2px 10px;">YES</td><td style="padding: 2px 10px;">NO</td></tr></table>	YES	NO
YES	NO								
YES	NO								
YES	NO								
Dolomite, sinkhole or doline areas	<table border="1" style="border-collapse: collapse;"><tr><td style="padding: 2px 10px;">YES</td><td style="padding: 2px 10px;">NO</td></tr></table>	YES	NO	<table border="1" style="border-collapse: collapse;"><tr><td style="padding: 2px 10px;">YES</td><td style="padding: 2px 10px;">NO</td></tr></table>	YES	NO	<table border="1" style="border-collapse: collapse;"><tr><td style="padding: 2px 10px;">YES</td><td style="padding: 2px 10px;">NO</td></tr></table>	YES	NO
YES	NO								
YES	NO								
YES	NO								
Seasonally wet soils (often close to water bodies)	<table border="1" style="border-collapse: collapse;"><tr><td style="padding: 2px 10px;">YES</td><td style="padding: 2px 10px;">NO</td></tr></table>	YES	NO	<table border="1" style="border-collapse: collapse;"><tr><td style="padding: 2px 10px;">YES</td><td style="padding: 2px 10px;">NO</td></tr></table>	YES	NO	<table border="1" style="border-collapse: collapse;"><tr><td style="padding: 2px 10px;">YES</td><td style="padding: 2px 10px;">NO</td></tr></table>	YES	NO
YES	NO								
YES	NO								
YES	NO								
Unstable rocky slopes or steep slopes with loose soil	<table border="1" style="border-collapse: collapse;"><tr><td style="padding: 2px 10px;">YES</td><td style="padding: 2px 10px;">NO</td></tr></table>	YES	NO	<table border="1" style="border-collapse: collapse;"><tr><td style="padding: 2px 10px;">YES</td><td style="padding: 2px 10px;">NO</td></tr></table>	YES	NO	<table border="1" style="border-collapse: collapse;"><tr><td style="padding: 2px 10px;">YES</td><td style="padding: 2px 10px;">NO</td></tr></table>	YES	NO
YES	NO								
YES	NO								
YES	NO								
Dispersive soils (soils that dissolve in water)	<table border="1" style="border-collapse: collapse;"><tr><td style="padding: 2px 10px;">YES</td><td style="padding: 2px 10px;">NO</td></tr></table>	YES	NO	<table border="1" style="border-collapse: collapse;"><tr><td style="padding: 2px 10px;">YES</td><td style="padding: 2px 10px;">NO</td></tr></table>	YES	NO	<table border="1" style="border-collapse: collapse;"><tr><td style="padding: 2px 10px;">YES</td><td style="padding: 2px 10px;">NO</td></tr></table>	YES	NO
YES	NO								
YES	NO								
YES	NO								

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Soils with high clay content (clay fraction more than 40%)
 Any other unstable soil or geological feature
 An area sensitive to erosion

YES	NO
YES	NO
YES	NO

YES	NO
YES	NO
YES	NO

YES	NO
YES	NO
YES	NO

If you are unsure about any of the above or if you are concerned that any of the above aspects may be an issue of concern in the application, an appropriate specialist should be appointed to assist in the completion of this section. Information in respect of the above will often be available as part of the project information or at the planning sections of local authorities. Where it exists, the 1:50 000 scale Regional Geotechnical Maps prepared by the Council for Geo Science may also be consulted.

4. GROUNDCOVER

Indicate the types of groundcover present on the site. The location of all identified rare or endangered species or other elements should be accurately indicated on the site plan(s).

Natural veld - good condition^E	Natural veld with scattered aliens^E	Natural veld with heavy alien infestation^F	Veld dominated by alien species^E	Gardens
Sport field	Cultivated land	Paved surface	Building or other structure	Bare soil

If any of the boxes marked with an “^E” is ticked, please consult an appropriate specialist to assist in the completion of this section if the environmental assessment practitioner doesn’t have the necessary expertise.

5. SURFACE WATER

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

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

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

BASIC ASSESSMENT REPORT

A site inspection was conducted on the 6th and 14th of June 2023. During the site visit, two hydrogeomorphic (HGM) types were identified, comprising several units. The wetland types were classified as wetland flats (HGM 1) and several depressions (HGM 2). The proposed corridor and associated overhead power line will traverse the wetland flat and avoids the delineated depression systems. Based on this, the functional assessment has only been completed for the wetland flat.

The most abundant and most conspicuous plant species is hygrophilous grasses such as *Andropogon eucomis*, *Hyparrhenia tamba*, *Eragrostis gummiflua* and *Setaria sphacelata*. Other plants associated with the wetland flat are *Juncus effusus*, *Schoenoplectus corymbosus*, *Verbena bonariensis* and various *Cyperaceae*.

Refer to Appendix D2 for the Freshwater Ecology Compliance Statement.

6. LAND USE CHARACTER OF SURROUNDING AREA

Indicate land uses and/or prominent features that currently occur within a 500m radius of the site and give description of how this influences the application or may be impacted upon by the application:

Natural area	Dam or reservoir	Polo fields
Low density residential	Hospital/medical centre	Filling station ^H
Medium density residential	School	Landfill or waste treatment site
High density residential	Tertiary education facility	Plantation
Informal residential ^A	Church	Agriculture
Retail commercial & warehousing	Old age home	River, stream or wetland
Light industrial	Sewage treatment plant ^A	Nature conservation area
Medium industrial ^{AN}	Train station or shunting yard ^N	Mountain, koppie or ridge
Heavy industrial ^{AN}	Railway line ^N	Museum
Power station	Major road (4 lanes or more) ^N	Historical building
Office/consulting room	Airport ^N	Protected Area
Military or police base/station/compound	Harbour	Graveyard
Spoil heap or slimes dam ^A	Sport facilities	Archaeological site
Quarry, sand or borrow pit	Golf course	Other land uses (describe)

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

N/A

BASIC ASSESSMENT REPORT

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

N/A

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

N/A

Does the proposed site (including any alternative sites) fall within any of the following:

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

If the answer to any of these questions was YES, a map indicating the affected area must be included in Appendix A.

Refer to Appendix A7 and Appendix A8.

7. CULTURAL/HISTORICAL FEATURES

Are there any signs of culturally or historically significant elements, as defined in section 2 of the National Heritage Resources Act, 1999, (Act No. 25 of 1999), including Archaeological or paleontological sites, on or close (within 20m) to the site? If YES, explain:

YES	NO
Uncertain	

N/A – Refer to Appendix D5 for the Heritage Impact Assessment. Please note the following points in this regard:

- The area is characterized by extensive cultivation that would have obliterated any surface indicators of heritage resources and is considered to be of low archaeological potential.
- This was confirmed during the survey and recorded heritage resources were limited to a burial site (PF001), and foundations of recent past structures (PF002). The recorded features are located well away from the corridor and no impact is expected.
- According to the South African Heritage Resource Authority (SAHRA) Paleontological sensitivity map the study area is moderate sensitivity and an independent study was commissioned for the project. A protocol for finds is included in the Heritage Impact Assessment.

If uncertain, conduct a specialist investigation by a recognised specialist in the field (archaeology or palaeontology) to establish whether there is such a feature(s) present on or close to the site. Briefly explain the findings of the specialist:

N/A

Will any building or structure older than 60 years be affected in any way?

Is it necessary to apply for a permit in terms of the National Heritage Resources Act, 1999 (Act 25 of 1999)?

YES	NO
YES	NO

If YES, please provide proof that this permit application has been submitted to SAHRA or the relevant provincial authority.

8. SOCIO-ECONOMIC CHARACTER

a) Local Municipality

Please provide details on the socio-economic character of the local municipality in which the proposed site(s) are situated.

Level of unemployment:

The Moqhaka Local Municipality Integrated Development Plan (IDP) (2022-2027) indicates that the municipal area is faced with development backlogs and a high poverty and unemployment rate.

The IDP provides the following numbers in terms of employment within the municipal

area:

- Employed: 36 040
- Unemployed: 19 554
- Discouraged work-seekers: 51 074
- Other not economically active parties: no data available

Economic profile of local municipality:

The Moqhaka Local Municipality Integrated Development Plan (IDP) (2022-2027) indicates that various economic activities / sectors are present within the municipal area. These include agriculture, mining, manufacturing, electricity, construction, trade, transport, finance and community services.

The following has been noted in terms of the economic sectors that operate within the municipal area:

- Agriculture - Kroonstad is the center of a large agricultural community that plays an important role in the economy of the district. However, the recent past months saw many agricultural sectors in the whole province hit by severe drought that resulted in fewer crops and many people also lost their job. In terms of current plans underway within the Local Municipality, supported by the Fezile Dabi District, initiatives have been prioritized to grow the agriculture sector such as diversification of agricultural products; and introduction of high value crops.
- Mining - Mining remains one of the primary economic sectors within the local municipality through both De Beers and Lace Mine diamond are located within 15KM from Kroonstad CBD. Both mines are now non-operational and their closure brought about huge unemployment within the municipality. This negative impact might be somehow reduced by programs related to the rehabilitation of that area.
- Manufacturing - manufacturing through locally based small enterprises in for example agriculture has been identified as critical in growing the national export base necessary to grow the economy. The Free State has identified areas within agriculture machinery to grow and strengthen the manufacturing sector within Moqhaka.
- Electricity - Moqhaka has a power station. However, is not at present generating electricity. Investigations are underway for its optimum utilisation. A metering system for water and electricity is in place and operational.
- Construction - Many SMMES continue to benefit in the construction sector through capital projects such as housing and road infrastructures. The council also need have the list of artisans and trades to support public infrastructure projects, the entities of

BASIC ASSESSMENT REPORT

which should be strengthened to access further opportunities within the private sector.

- Transport Services and Logistics - The Council provides public transport infrastructure through grant allocation for such facilities as taxi ranks, street furniture etc. The council is also however not engaged in provision of public transport services. There is however a commuter rail line that has historically been one of the main sources of employment within the municipal jurisdiction. Opportunities exist for upgrade of the rail line with PRASA for especially freight goods associated with agriculture.
- Studies are currently underway to look into the feasibility of establishing an airport or a facility that can be used to service airplanes.
- Community services - job opportunities associated with the offices of the Department of Correctional Services and the School of Engineer's Military bases situated in Kroonstad play a huge role as contributors in this sector.
- Tourism - Moqhaka is located within the northern part of the Free State Province, which is being promoted as one of the primary domestic tourism destination for especially the "week-enders". Existing tourism products that would have to be further developed to achieve maximum value include those around the existing municipal nature conservation and heritage sites such as the Vals River, Bloemhoek and Serfontein Dams renowned for water sports and the Vredefort Dome.

Level of education:

The level of education within the Moqhaka Local Municipality can be described as follows (aged 20+):

- No schooling – 3.8%
- Matric – 31.5%
- Higher education – 6.7%

b) Socio-economic value of the activity

The socio-economic value of the activity is linked to the authorised Phofu Solar Power Plant and therefore the values associated with the Phofu Grid Connection Infrastructure is not available.

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

What is the expected yearly income that will be generated by or as a result of the activity?

Will the activity contribute to service infrastructure?

Is the activity a public amenity?

R	
R	
YES	NO
YES	NO

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How many new employment opportunities will be created in the development and construction phase of the activity/ies?	
What is the expected value of the employment opportunities during the development and construction phase?	R
What percentage of this will accrue to previously disadvantaged individuals?	%
How many permanent new employment opportunities will be created during the operational phase of the activity?	
What is the expected current value of the employment opportunities during the first 10 years?	R
What percentage of this will accrue to previously disadvantaged individuals?	%

9. BIODIVERSITY

Please note: The Department may request specialist input/studies depending on the nature of the biodiversity occurring on the site and potential impact(s) of the proposed activity/ies. To assist with the identification of the biodiversity occurring on site and the ecosystem status consult <http://bgis.sanbi.org> or BGIShelp@sanbi.org. Information is also available on compact disc (cd) from the Biodiversity-GIS Unit, Ph (021) 799 8698. This information may be updated from time to time and it is the applicant/EAP's responsibility to ensure that the latest version is used. A map of the relevant biodiversity information (including an indication of the habitat conditions as per (b) below) and must be provided as an overlay map to the property/site plan as Appendix D to this report.

- a) **Indicate the applicable biodiversity planning categories of all areas on site and indicate the reason(s) provided in the biodiversity plan for the selection of the specific area as part of the specific category)**

Systematic Biodiversity Planning Category				If CBA or ESA, indicate the reason(s) for its selection in biodiversity plan
Critical Biodiversity Area (CBA)	Ecological Support Area (ESA)	Other Natural Area (ONA)	No Natural Area Remaining (NNR)	No reason is provided on the 2015 Free State Biodiversity Plan CBA Map available on SANBI.

- b) **Indicate and describe the habitat condition on site**

Habitat Condition	Percentage of habitat condition class (adding up to 100%)	Description and additional Comments and Observations (including additional insight into condition, e.g. poor land management practises, presence of quarries, grazing, harvesting regimes etc).
Natural	50%	Disturbed grassland contains natural habitat with the potential to support species of conservation concern. Only narrow corridors of good habitat connectivity

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		is still present. Mostly minor current negative ecological impacts are present, with some major impacts and a few signs of minor past disturbance.
Near Natural (includes areas with low to moderate level of alien invasive plants)	0%	-
Degraded (includes areas heavily invaded by alien plants)	50%	No natural habitat remains and several minor and major current negative ecological impacts are present.
Transformed (includes cultivation, dams, urban, plantation, roads, etc)	0%	-

c) Complete the table to indicate:

- (i) the type of vegetation, including its ecosystem status, present on the site; and
- (ii) whether an aquatic ecosystem is present on site.

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

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

A Terrestrial Ecology Compliance Statement (Appendix D1) has been undertaken for the proposed grid connection infrastructure. The information provided below discusses the results of the field survey that was undertaken. Various sample points were surveyed within the grid connection corridor and areas of low, medium and high sensitivity were identified.

Areas of high sensitivity:

- *Survey point within water resource habitat type:* Wetland dominated by hydrophytes. More information on this non-terrestrial habitat type can be found in the accompanying Freshwater Ecology Compliance Statement (Appendix D2), refer to the row below. No fauna or flora species of conservation concern (SCC) were recorded or are expected.

Areas of medium sensitivity:

- *Survey points within disturbed grassland habitat type:* Current impacts include grazing by livestock, fences, nearby agricultural practices, roads and invasions by the alien species, *Erigeron bonariensis* and *Bidens pilosa*, and alien invasive plant (AIP) species, *Eucalyptus camaldulensis* and *Verbena bonariensis*. Dominant indigenous grass species include, *Eragrostis curvula*, *Hyparrhenia hirta*, *Cynodon dactylon*, and *Aristida congesta*. Other dominant flora species include, *Gomphocarpus fruticosus*, *Asparagus larycinus*, *Stoebe plumosum* and *Selago densiflora*. No fauna or flora SCC were recorded or are expected.

Areas of low sensitivity:

- *Survey points within disturbed grassland habitat type:* Current impacts include grazing by livestock, fences, nearby agricultural practices, roads and invasions by the alien species, *Erigeron bonariensis*, and alien invasive plant (AIP) species, *Cirsium vulgare* and *Verbena bonariensis*. Dominant indigenous grass species include, *Eragrostis curvula*, *Hyparrhenia hirta*, *Cynodon dactylon*, and *Aristida congesta*. Other dominant species include, *Gomphocarpus fruticosus*, *Nidorella hottentotica*, *Stoebe plumosum*, *Senecio inaequidens* and *Selago densiflora*. No fauna or flora SCC were recorded or are expected. This habitat unit no longer represents a CBA.

Areas of very low sensitivity:

- *Survey points within modified habitat type:* This habitat unit includes all areas that maintain little to no native vegetation and/or where anthropogenic and agricultural activity has substantially modified an area's primary ecological functions and species composition. This habitat unit no longer maintains its functional integrity and does not contribute significantly to ecosystem services. No fauna or flora SCC were recorded or are expected.

This indicates that the findings of this assessment are contrary to the Screening Tool (Appendix J1) with respect to the Combined Terrestrial, Plant and Animal Species Theme sensitivity. The specialist has indicated that the habitat within the grid connection corridor under assessment is highly fragmented and exists in a disturbed state. SCC were not recorded and are not expected. The CBA is no longer representative of a CBA. Impacts associated with the project are low.

The proposed project area will have an acceptable negative impact on the terrestrial biodiversity of the area. Due to the limited footprint disturbance of the powerline, and the 'Very Low' to 'Medium' sensitivity for the habitats pre-mitigation, and overall 'Low' sensitivity post-mitigation, the proposed development can be favourably considered for authorisation.

A **Freshwater Ecology Compliance Statement** (Appendix D2) has been undertaken for the proposed grid connection infrastructure. The information provided below discusses the results of the field survey that was undertaken.

A site inspection was conducted on the 6th and 14th of June 2023. During the site visit, two hydrogeomorphic (HGM) types were identified, comprising several units. The wetland types were classified as wetland flats (HGM 1) and several depressions (HGM 2). The proposed power line will traverse the wetland flat and avoids the delineated depression systems. Based on this, the functional assessment has only been completed for the wetland flat.

The most abundant and most conspicuous plant species is hygrophilous grasses such as *Andropogon eucomis*, *Hyparrhenia tamba*, *Eragrostis gummiflua* and *Setaria sphacelata*. Other plants associated with the wetland flat are *Juncus effusus*, *Schoenoplectus corymbosus*, *Verbena bonariensis* and various *Cyperaceae*.

Wetland flats are typically found on valley floors where the landscape does not allow high energy flows. Wetland flats, according to SANBI are similar to depressions in all aspects except for the depressional features of a depression. Wetland flats therefore do not have enclosing topographical features and would allow for diffuse flow out of the system. Furthermore, these systems would have a similar functionality to that of depressions.

The integrity of the wetland flats system was determined to be a class "C – Moderately Modified". The proximity of agricultural activities has led to modifications in the wetland's natural features while offering valuable insights into the interaction between human land use and environmental preservation.

The wetland's hydrology has been significantly impacted, with shifts in water flow patterns due to runoff from farming practices. The development of the catchment and encroachment of cultivation has altered the hydrology of the system. The wetland's topography and soil composition have experienced moderate modifications. Proximal farming and infrastructure development has fragmented the ecosystem, disrupting its spatial dynamics and connectivity. Soil compaction and erosion, attributed to agricultural machinery and infrastructure, have further transformed the landscape. The wetland's vegetation has undergone discernible changes, including the establishment of agricultural weeds and escaped crops.

The Importance and Sensitivity for the delineated wetland flat has been calculated to be "Low". It is further confirmed by the specialist that linear activity impacts are temporary and the land can be returned to the current state within two years of the completion of the construction phase.

The National Web based Environmental Screening Tool Report (Appendix J1) has characterised the aquatic theme sensitivity of the project area as predominantly “Low”, with several depression units classified with a “Very High” sensitivity. The site survey confirmed the presence of wetland flats and several depressions for the project. The overall aquatic biodiversity theme for the project is determined to be “Low”.

The project poses limited risks to water resources and may be considered favourably for authorisation. In terms of Government Notice 509 of 2016, due to the negligible risks posed to water resources within the regulated area, a General Authorisation in terms of Section 21 (c) and/or (i) of the National Water Act is deemed necessary for the project.

The specialist has confirmed that the grid connection corridor will have an acceptable negative impact on the aquatic biodiversity of the area. Due to the limited footprint disturbance of the powerline, the hydrology of the systems will remain largely unaltered. The proposed development can be favourably considered for authorisation.

SECTION C: PUBLIC PARTICIPATION

1. ADVERTISEMENT AND NOTICE

Publication name	Klerksdorp Rekord	
Date published	30 June 2023	
Site notice position	Latitude	Longitude
	27°2'59.42"S	26°48'46.19" E
	27°4'7.20"S	26°50'16.48"E
	27°5'20.74"S	26°51'45.53"E
Date placed	15 June 2023	

Include proof of the placement of the relevant advertisements and notices in Appendix E1.

Proof of placement of advertisements and notices are included in Appendix E1.

2. DETERMINATION OF APPROPRIATE MEASURES

Provide details of the measures taken to include all potential I&APs as required by Regulation 41(2)(e) and 41(6) of GN 326

The following measures were taken to include all potential I&APs:

- Existing databases were consulted to source information for all surrounding landowners to the affected property.
- The database of the Phofu Solar Power Plant was provided by the Applicant for the sourcing of the relevant stakeholder information.
- An advert was placed in a local newspaper published in the affected area and site notices were erected at the boundary of the affected property to notify the general public and potential I&APs of the proposed development and also provide the details of how I&APs can become involved in the BA process and register on the project I&AP database.

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Key stakeholders (other than organs of state) identified in terms of Regulation 41(2)(b) of GN 326

Title, Name and Surname	Affiliation/ key stakeholder status	Contact details (tel number or e-mail address)
Hansie Muller Voerkraal Trust	Affected Landowner	Information not included as per the POPI Act. The contact information has been provided to the Competent Authority accordingly as Appendix E5 of this report.
Cobus Botha Trust No II	Affected Landowner	
Jerome Family Trust	Affected Landowner	
Ruitjiespan (Pty) Ltd	Affected Landowner	
Johannes Andries Pretorius	Affected Landowner	
Alic Gossayn (Pty) Ltd	Affected Landowner	
Elana du Toit Trust	Affected Landowner	
All adjacent landowners have also been identified.		

Include proof that the key stakeholder received written notification of the proposed activities as Appendix E2. This proof may include any of the following:

- e-mail delivery reports;
- registered mail receipts;
- courier waybills;
- signed acknowledgements of receipt; and/or
- or any other proof as agreed upon by the competent authority.

Proof of correspondence is included in Appendix E2

3. ISSUES RAISED BY INTERESTED AND AFFECTED PARTIES

No significant comments or issues have been received to date on the proposed development. The main issues raised by I&APs during the 30-day review period of the draft BA Report will be summarized here and responded to accordingly, where such comments are raised.

Summary of main issues raised by I&APs	Summary of response from EAP

4. COMMENTS AND RESPONSE REPORT

The practitioner must record all comments received from I&APs and respond to each comment before the Draft BAR is submitted. The comments and responses must be captured in a comments and response report as prescribed in the EIA regulations and be attached to the Final BAR as Appendix E3.

Comments and Responses Report is included in Appendix E3. This report includes all comments raised prior to the release of the draft Basic Assessment Report to the registered I&APs.

5. AUTHORITY PARTICIPATION

Authorities and organs of state identified as key stakeholders:

Authority/Organ of State	Contact person (Title, Name and Surname)
Fezile Dabi District Municipality	Mr Andre Van Zyl
Moghaka Local Municipality	Municipal Manager: S.M Moqwathi
Department of Forestry, Fisheries and the Environment (DFFE): Biodiversity and Conservation Directorate	Deputy Director: Seoka Lekota
Department of Forestry, Fisheries and the Environment (DFFE): Protected Areas Directorate	Mr. Thivhulawi Nethononda
Department of Water and Sanitation (DWS)	Director General: Dr Sean Phillips Director - Water Allocation: MrSipho Skosana Deputy Director - Compulsory Licensing: Ms Thokozani Mazibuko Deputy Director - Allocation Equity: Mr Siboniso Mkhaliphi Acting Director - Water Abstraction and Instream Use: Ms Nosie Mazwi
Department of Agriculture, Land Reform and Rural Development (DALRRD)	Mr Thoko Buthelezi Ms Anneliza Collett Land Claims: Nomfundo Ntloko-Gobodo Director General: Mr Mooketsa Ramasodi
Department of Mineral Resources and Energy (DMRE)	Mr Sunday Mabaso Mr Kalipa Kewuti Acting Project Manager - Renewable

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	energy Initiatives: Ms Pheladi Masipa Ms Enid Babuseng Nomawethu Qase
Department of Public Enterprises	Chief Director: Donald Nkadimeng
Department of Transport	Director General Office - Personal Assistant: Ms Michelle Phenya
Department of Science and Technology	Mere Kgampe
South African Department of Defence	SO1 Military Integrated Environment Management (MIEM) Governance: Lt. Cnl. Kebasenosi Zondi
South African National Defence Force	Chief of Logistics - Renewable Energy Applications: JR Kennny
South African Civil Aviation Authority (CAA)	Ms Lizelle Stroh Mr Pappie Maja Mr. Themba Thabethe
South African Radio Astronomy Observatory (SARAO)	Mr Angelo Syce Mr Thato Nape Mr Adrian Tiplady Mr Matlhane Selaelo
South African Weather Services	Puseletso Mofokeng Rydall Jardine Webster Ngoepe Zamikhaya Magogotya
Air Traffic and Navigation Services (ATNS)	Manager - Sustainability and Environment: Johanna Morobane Obstacle Evaluator: Simphiwe Masilela
South African National Roads Agency (SANRAL)	Mr Fanie-andrew can Aardt Ms Nicole Abrahams Ms Victoria Botha Mr Shaun Dyers
Transnet SA SoC Limited	-
Eskom Holdings SoC Ltd	'Senior Environmental Advisor: Mr John Geeringh Ms Debbie Harding Ms Lianne Muller Mr Lungi Motsis Mr Nolan Dominick Mr Nondwe Khanye

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National Energy Regulator of South Africa (NERSA)	Renewable Energy Specialist: Ms Andile Gxasheka Ms Izanne Martin
Sentech Ltd	Mr Marius Venter Mr Serame Motlhake
Telkom SA SoC Ltd	Lehlohonolo Roesto
South African Heritage Resources Agency (SAHRA)	Mr Phillip Hine Ms Natasha Higgitt
BirdLife South Africa	Birds and Renewable Energy Manager: Ms Samantha Ralston-Paton Head of Conservation: Ms Hanneline Smit-Robinson Policy and Advocacy Manager: Ms Melissa Lewis
VULPRO	Ms Kerri Wolter
African Farmer Association of South Africa (AFASA)	President: Mr Vuyo Mahlati
Endangered Wildlife Trust (EWT)	Programme Manager: Mr Constant Hoogstad Ms Mandy Poole Mr Yolán Friedmann Mr Kish Chetty Mr Ian Little
Wildlife and Environment Society of South Africa (WESSA)	Mr John Wesson Ms Morgan Griffiths
South African National Parks	Senior General Manager: Peter Novellie
World Wide Fund South Africa	Morne du Plessis
National Khoisan Council	Chairman: Cecil Le Fleur
Independent Communications Authority of South Africa (ICASA)	Praneel Ruplal
Free State Department of Economic, Small Business Development, Tourism and Environmental Affairs (DESTEA)	Ms Grace Mkhosana
Free State Department of Water and Sanitation (DWS)	Dr TP Ntli Ms Dwan Jaca Mr Fikile Lerata Mr Vernon Blair
Department of Rural Development and	Chief Director - Land Restitution Support:

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Land Reform	Ms Liezel Naran Acting Director: Max de Kock
Free State Department of Agriculture and Rural Development	Ms Agnes Sebo Mr Schalk Burger
Free State Provincial Heritage Resources Agency (PHRA)	Ms T. Mbatha Ms Malintja Molahloe
Free State Department of Community Safety, Roads and Transport	Acting Director - Monitoring and Evaluation: Mr Albereto Myburgh Chief Director - Transport Operations: Mr Teboho Ubane Chief Director - Roads Infrastructure: Mr Freddy Tokwe Acting Director - Road Safety: Mr Andrew Ramutsindela
Free State Department of Mineral Resources	Regional Manager: Mr Azwihangwisi Mulaudzi Ms Tebogo Mangaba Regional Manager: Ms Kalipa Kewuti
Eskom SoC Ltd - Free State	Ms Katlego Motlha Mr Valmon Muller Ms Hope Masango Mr Ronald Marais Ms Mahlatse Moeng
Agri SA – Free State Agriculture	Mr Jack Armour Ms Elize Spence
Free State Tourism Authority	-

Include proof that the Authorities and Organs of State received written notification of the proposed activities as appendix E2.

In the case of renewable energy projects, Eskom and the SKA Project Office must be included in the list of Organs of State.

It must be noted that SKA is now known as the South African Radio Astronomy Observatory (SARAO) that has been included in the I&AP database since the commencement of the Basic Assessment Process.

6. CONSULTATION WITH OTHER STAKEHOLDERS

Note that, for any activities (linear or other) where deviation from the public participation requirements may be appropriate, the person conducting the public participation process may deviate from the

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requirements of that sub-regulation to the extent and in the manner as may be agreed to by the competent authority.

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

A list of registered I&APs must be included as appendix E5.

Copies of any correspondence and minutes of any meetings held must be included in Appendix E6.

All registered I&APs are included in Appendix E5

Copies of correspondence and minutes will included on Appendix E6 should any meetings be held during the 30-day review and comment period of the draft BA Report.

SECTION D: IMPACT ASSESSMENT

The assessment of impacts must adhere to the minimum requirements in the EIA Regulations, 2014 as amended and should take applicable official guidelines into account. The issues raised by interested and affected parties should also be addressed in the assessment of impacts.

1. IMPACTS THAT MAY RESULT FROM THE PLANNING AND DESIGN, CONSTRUCTION, OPERATIONAL, DECOMMISSIONING AND CLOSURE PHASES AS WELL AS PROPOSED MANAGEMENT OF IDENTIFIED IMPACTS AND PROPOSED MITIGATION MEASURES

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

Activity	Impact summary	Significance	Proposed mitigation
Alternative 1 (preferred alternative)			
Impacts to terrestrial biodiversity and avifauna	Direct impacts: Disturbance to areas where natural vegetation is still present	Low	There are no additional mitigation measures required, over and above what has already been included in the Generic Environmental Management Programmes (EMPr's) for the Development and Expansion for Overhead Electricity Transmission and Distribution Infrastructure and of Substation Infrastructure for the Transmission and Distribution of Electricity as per Government Notice 435, which was published in Government Gazette 42323 on 22 March 2019.
	Indirect impacts: None identified	N/A	
	Cumulative impacts: None identified	N/A	

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Activity	Impact summary	Significance	Proposed mitigation
Impacts to Freshwater Ecology	Direct impacts: Disturbance to wetland features	Low	There are no additional mitigation measures required, over and above what has already been included in the Generic Environmental Management Programmes (EMPr's) for the Development and Expansion for Overhead Electricity Transmission and Distribution Infrastructure and of Substation Infrastructure for the Transmission and Distribution of Electricity as per Government Notice 435, which was published in Government Gazette 42323 on 22 March 2019.
	Indirect impacts: Indirect disturbance / impacts to wetland features	Low	
	Cumulative impacts: None identified	N/A	
Impacts to soil and agriculture	Direct impacts: Disturbance to soil including erosion	Low	There are no additional mitigation measures required, over and above what has already been included in the Generic Environmental Management Programmes (EMPr's) for the Development and Expansion for Overhead Electricity Transmission and Distribution Infrastructure and of Substation Infrastructure for the Transmission and Distribution of Electricity as per Government Notice 435, which was published in Government Gazette 42323 on 22 March 2019.
	Indirect impacts: None identified	Low	
	Cumulative impacts: None identified	N/A	

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Activity	Impact summary	Significance	Proposed mitigation
			435, which was published in Government Gazette 42323 on 22 March 2019.
Visual impacts during construction and operation	<p>Direct impacts:</p> <ul style="list-style-type: none"> • Visual impact of construction activities on sensitive visual receptors and a rural landscape • Visual impact of industrial operational infrastructure on sensitive visual receptors, landscape and scenic resources • Change in the sense of place of the local area 	Low and Medium	<ul style="list-style-type: none"> • Retain and maintain natural vegetation immediately adjacent to the development footprint. • No unnecessary removal of vegetation. • Reduce vegetation clearance through planning of laydown areas and construction equipment camps. • Restrict the activities and movement of construction workers and vehicles to the immediate construction site and existing access roads. • Ensure that rubble, litter, etc. are appropriately stored (if it can't be removed daily) and then disposed of regularly at a licenced waste site. • Reduce and control dust during by utilising dust suppression measures.

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Activity	Impact summary	Significance	Proposed mitigation
			<ul style="list-style-type: none"> • Limit construction activities between 07:00 and 18:00, to reduce the impacts of lighting. • Rehabilitate all disturbed areas immediately after the completion of construction. • Where insufficient natural vegetation exists next to the property, a 'screen' can be planted if the landowner requests additional mitigation. This can be done using endemic, fast growers that are water efficient. • Maintain general appearance of the facility.
	<p>Indirect impacts: None identified</p>	N/A	N/A
	<p>Cumulative impacts: Cumulative visual impacts of proposed project</p>	High	<ul style="list-style-type: none"> • Retain and maintain natural vegetation immediately adjacent to the development footprint.
Impacts to heritage resources	<p>Direct impacts: Impacts to burial site PF001</p>	Low	<ul style="list-style-type: none"> • The burial site must be avoided with a 30 m buffer zone.

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Activity	Impact summary	Significance	Proposed mitigation
			<ul style="list-style-type: none"> • Implementation of a chance find procedure. • Final pylon positions must be assessed prior to construction
	Indirect impacts: None identified	N/A	-
	Cumulative impacts: Impacts to burial site PF001	Low	<ul style="list-style-type: none"> • The burial site must be avoided with a 30 m buffer zone. • Implementation of a chance find procedure. • Final pylon positions must be assessed prior to construction.
Alternative 2			
	Direct impacts:		
	Indirect impacts:		
	Cumulative impacts:		
Alternative 3			
	Direct impacts:		
	Indirect impacts:		
	Cumulative impacts:		
No-go option			
The option of not developing the proposed development	Direct impacts: Loss of ability of the Phofu Solar Power Plant to evacuate the generated electricity	High	The proposed infrastructure is required for the operation of the Phofu Solar Power Plant.
	Indirect impacts: Loss of the uptake of	Medium	The proposed infrastructure is required for

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Activity	Impact summary	Significance	Proposed mitigation
	renewable energy electricity as part of the energy mix for use by the national grid or private off-taker		the operation of the Phofu Solar Power Plant.
	Cumulative impacts: Loss of the uptake of renewable energy electricity as part of the energy mix for use by the national grid or private off-taker	Medium	The proposed infrastructure is required for the operation of the Phofu Solar Power Plant.

A complete impact assessment in terms of Regulation 19(3) of GN 326 must be included as Appendix F.

2. ENVIRONMENTAL IMPACT STATEMENT

Taking the assessment of potential impacts into account, please provide an environmental impact statement that summarises the impact that the proposed activity and its alternatives may have on the environment after the management and mitigation of impacts have been taken into account, with specific reference to types of impact, duration of impacts, likelihood of potential impacts actually occurring and the significance of impacts.

Alternative A (preferred alternative)

Before submitting the Application for Environmental Authorisation and the Basic Assessment Report, three different corridors were under consideration. However, only one route/grid connection corridor has been selected for evaluation, based on its technical feasibility and environmental sensitivity. The other two options were discarded due to their environmental impact and technical feasibility, following feedback from Eskom, which provided guidance.

Regarding the impact assessment of the proposed Phofu Grid Connection Infrastructure for connecting the authorised Phofu Solar Power Plant, it is confirmed that all impacts associated with the project across its various phases (construction, operation, and decommissioning) can be reduced to acceptable levels through the implementation of recommended mitigation measures. After these measures are applied, all expected impacts will have a medium or low level of significance, and no highly significant negative direct impacts are anticipated. However, there is one notable high cumulative impact,

which is the visual cumulative impact. Despite its significance, the specialist indicate that this impact will still be acceptable.

During the construction phase, short-term direct and temporary impacts are expected, with a high likelihood of occurrence in most cases. During operation, long-term direct and indirect impacts are expected, with a probable and definite likelihood of occurrence in most cases. The impacts anticipated during the decommissioning phase are also direct and temporary, resembling those during the construction phase. It is important to note that the extent of the proposed grid connection infrastructure is limited, and it poses limited disturbance within the landscape.

Considering the siting and location of the assessed grid connection corridor and proposed development footprint, it is confirmed that the chosen connection is the shortest and most technically viable route from the authorised Phofu Solar Power Plant to the National Grid.

In light of the above findings, the Environmental Assessment Practitioner (EAP) confirms that the development of the proposed grid connection solution to link the authorised Phofu Solar Power Plant is environmentally suitable and is not expected to have any detrimental impacts on the environment. No fatal flaws have been identified. As a result, this alternative is considered the preferred option from an environmental suitability perspective.

Alternative B

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Alternative C

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No-go alternative (compulsory)

This alternative presents the possibility of maintaining the current status quo of the environment, often referred to as the 'do-nothing' approach, which involves keeping the grid connection corridor, substation/switching station development area, and the surrounding regions designated for agricultural purposes. In the event that the proposed project does not proceed, the land's existing use for agriculture will remain unaffected.

The primary objective of the proposed 132kV power lines and substation/switching station is to establish a connection between the authorised Phofu Solar Power Plant and the National Grid by implementing a consolidated grid connection solution. If status quo

were to be maintained in its current state, it is crucial to recognise that this would entail missed opportunities and potential costs. Without the power lines and substation/switching station, the solar power plant would be unable to function, leading to job losses and a decline in economic growth within the region, along with a decrease in renewable energy adoption and uptake.

Given these considerations, it becomes evident that the 'no-go' alternative is not the preferred course of action. Choosing to maintain the current state would result in the loss of the positive impacts associated with the development, such as economic growth and renewable energy resource utilisation.

SECTION E. RECOMMENDATION OF PRACTITIONER

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

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

N/A

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

<p>The independent Environmental Assessment Panel (EAP) confirms based on the results of the Basic Assessment that the suggested development will yield a net positive effect on the local area. This positive outcome will be instrumental in optimising the renewable energy resource utilisation, primarily by facilitating the operations of the authorised Phofu Solar Power Plant. All adverse environmental impacts can be adequately addressed through the implementation of the recommended mitigation measures, resulting in the reduction of the impacts to either a medium or low level of significance. In light of the information provided in the report, the proposition is made to grant an environmental authorisation. This authorisation, which includes several general conditions, encompasses the approval of the proposed grid connection infrastructure, comprising two single-circuit power lines and a substation, along with the associated infrastructure, contingent upon the following stipulations:</p> <ul style="list-style-type: none"> • Implementation of the proposed mitigation measures set out in the EMPr(s). • Implementation of the proposed mitigation measures set out in the specialist studies. • The proposed grid connection infrastructure must comply with all relevant national environmental laws and regulations. • All actions and task allocated in the EMPr(s) should not be neglected and a copy of the EMPr should be made available onsite at all times. • The National Water Act must be complied with including obtaining of the relevant water licensing for the wetlands present within the grid connection corridor. • Should archaeologically sites or graves be exposed during construction work, it must immediately be reported to a heritage practitioner so that an investigation and evaluation of the finds can be made.
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- A Heritage walk-through of the final pylon placements and power line routes must be undertaken prior to the commencement of construction.
- The period for which the Environmental Authorisation is required is 10 years.

The Applicant is requesting that the full extent of the grid connection corridor and the assessment area for the substation be authorised so that the Applicant may place the infrastructure within the larger areas, however subject to avoidance of any sensitive environmental features and areas present within the corridor and assessment area, where required. This will provide flexibility to allow the grid infrastructure to be placed so as to accommodate the final layouts of the authorised Phofu Solar Power Plant. Therefore, the assessed corridor and assessment area are presented as the layout for approval to the Department for decision-making.

Is an EMPr attached?

YES

~~NO~~

The EMPr must be attached as Appendix G.

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

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

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

Marelle Botha

NAME OF EAP



SIGNATURE OF EAP

27 October 2023

DATE

SECTION F: APPENDIXES

The following appendixes must be attached:

Appendix A: Maps

Appendix B: Photographs

Appendix C: Facility illustration(s) – *Not available at this stage*

Appendix D: Specialist reports (including terms of reference)

Appendix E: Public Participation

Appendix F: Impact Assessment

Appendix G: Environmental Management Programme (EMPr)

Appendix H: Details of EAP and expertise

Appendix I: Specialist's declaration of interest

Appendix J: Additional Information