Holland & Associates
Environmental Consultants
*Impact Assessments - Environmental Management Programs - Compliance Monitoring - Process Review*

Johann Lanz

30 March 2022

*Per Email:* johann@johannlanz.co.za

**Attention:** Johann Lanz

Dear Johann,

**BASIC ASSESSMENT FOR THE PROPOSED PAARDE VALLEY PV2 GRID CONNECTION TO VETLAAGTE MAIN TRANSMISSION SUBSTATION (MTS), AND APPLICATION FOR AMENDMENT OF THE ENVIRONMENTAL AUTHORISATION FOR THE PAARDE VALLEY PV2 PHOTOVOLTAIC SOLAR ENERGY FACILITY (DFFE REF NO.: 12/12/20/2500/AM5), NEAR DE AAR IN THE NORTHERN CAPE PROVINCE**

**Agricultural Specialist Assessment for the Basic Assessment Process &**
**Agricultural Specialist input into the Application for Amendment of the EA**

The purpose of this letter it to provide you with a Terms of Reference to compile a specialist impact assessment for the proposed grid connection from the authorised Paarde Valley PV2 facility to Vetlaagte Main Transmission Substation (MTS), which forms the subject of an Application for Environmental Authorisation (through a Basic Assessment process). This Terms of Reference also includes an assessment of the Paarde Valley PV2 site to inform an Application for Amendment of the Environmental Authorisation (EA) for the authorised Paarde Valley PV2 solar photovoltaic project.

The background to the environmental authorisation process for the authorised Paarde Valley PV2 project, the proposed amendments to the EA, the proposed grid connection, and the Terms of Reference for your specialist inputs, are provided in Sections 1 – 4 below.

## 1. Background

Environmental Authorisation (EA) for 150 MW Paarde Valley PV2 was granted by the Department of Environmental Affairs (DEA) (now known as the Department of Forestry, Fisheries and the Environment (DFFE)) on 7 September 2012, in terms of the NEMA EIA Regulations (2010). The authorised project includes the construction of a PV solar energy facility to generate approximately 75 – 150 MW on the aforementioned farm, as well as 132 kV / 220 kV overhead transmission lines and associated infrastructure (access roads, water supply infrastructure, stormwater infrastructure, internal access roads, buildings and fencing).

An amendment to the EA was issued on 13 March 2013, amending the name of the holder of the EA from Mulilo Renewable Energy (Pty) Ltd to Paarde Valley PV2 (Pty) Ltd.

On 15 June 2015 an amendment to the EA was issued (12/12/20/2500/AM2), which amended the property description in the EA, and extended the validity period of the EA until 7 September 2017.

On 20 July 2017 an amendment to the EA was issued (12/12/20/2500/AM3), amending the Applicants contact details as well as amending the validity period of the EA for an additional three (03) years, i.e. until 7 September 2020.

On 27 August 2020, an amendment to the EA was granted by DFFE (12/12/20/2500/AM4), to extend the validity period of the EA by an additional 2 years, i.e. the EA currently expires on 7 September 2022.

The currently authorised 132kV/ 220kV grid connection for Paarde Valley PV2 is routed from the Paarde Valley PV2 facility to the De Aar substation. However, Eskom has grid capacity constraints in the Northern Cape, and at certain lines and on certain substations. Eskom does not have capacity for the Paarde Valley PV2 to connect at the De Aar substation, accordingly the Applicant wishes to amend the authorised grid connection (realignment and termination point) and create a separate EA for the ESKOM's self-build components (substation & gridline), as outlined in Section 2 below.

## 2. Proposed Grid Connection from Paarde Valley PV2 to Vetlaagte Main Transmission Substation (MTS)

Paarde Valley PV2 (Pty) Ltd (hereafter referred to as the Applicant) proposes the construction of a 132 kV overhead powerline (OHPL) grid connection from the authorised on-site substation at Paarde Valley PV2 to Vetlaagte Main Transmission Station (MTS) (which is currently undergoing its own EA application process). The OHPL is proposed to be approximately 12.7 km in length, and is located in the Strategic Transmission Central Corridor[1]. A 200 m corridor (100 m of each side of the line) is to be assessed, as per the provided kml. The final OHPL servitude will be registered as 31 m but during the design development process a corridor of 200 meters is required to allow for minor tower position adjustments. The exact pylon locations will be determined by the outcome of the specialist's investigations, and engineering considerations. On average there will be 4 - 5 towers per km, so that the route will consist of an approximately 40 towers. The teams constructing the OHPL often use cranes and these will fit into an area with a maximum radius of approximately 30 m around the base of each tower, with the final footprint being relatively small. The line will have a capacity of > 150MVA and will make use of either steel monopole or steel lattice structure in line with Eskom required specifications.
A monopole self-supporting structure has a maximum base of 5 m in diameter above the ground. In some situations the structures have stays. These would fall into the area with a maximum radius of 30 meters, but the stays themselves are hardly exposed at ground level, with only small steel

[1]No. 113 of Government Gazette No. 41445 published 16 February 2018

rods protruding from the ground. Lattice towers have a bigger footprint as each has four legs that are a maximum of 15 m apart so that the final footprint would be approximately 15 m x 15 m. The height of either pylon structure will be up to 32 m.

The project will also include the switching station component of the authorised Paarde Valley PV2 on-site substation, with an approximate footprint area of 100 m x 100m, and a capacity of 132 kV, as this needs to be handed over to Eskom with the grid connection once constructed.

In summary, the infrastructure associated with the proposed Grid Connection works for the Paarde Valley PV2 project (and to be handed back to Eskom following construction), includes the following:

- A 132kV Overhead Power Line (OHPL) from the SwS connecting to the proposed Vetlaagte Main Transmission Substation (MTS)
- Onsite Switching Station (SwS), adjacent to the IPP collector substations (SS). Approximate footprint area of 100m x 100m

The technical details include:

- Height of pylons Up to 32m
- Type of poles/ pylons to be used. The alternatives under consideration and to be assessed include Steel lattice or Monopole structures in line with Eskom required specifications
- Transmission line capacity 132kV
- Area occupied by both permanent and construction laydown areas +-4 Hectares (for grid works only)
- Area occupied by buildings +-1.0 Hectares
- Length of service road(s) – Twin tracked service road following line route
- Width of service road(s) 6 m (8 m if including V-drains) to access the Eskom switching station from the nearest road.
- Height of fencing 2m
- Type of fencing Palisade + farmers fencing for temporary works
- Capacity of on-site substation 132kv

The OHPL and Switching station are required to connect the Paarde Valley PV2 Solar farm to the Eskom National Grid. The route selected follows boundary lines and / or existing OHPL routes so as to limit disruption to current farming activities as much as possible.

## 3. Proposed amendments to the Environmental Authorisation for the Paarde Valley PV2.

### a. Extension of the Validity Period

Paarde Valley PV2 (Pty) Ltd wishes to extend the validity of the Environmental Authorisation (dated 2012) by 18 months, until 7 March 2023, to allow bidding to a private off-taker.

**b. Amend the Project Description of the EA to remove half of the authorised substation**

The Applicant wishes to exclude the switching station component of the authorised on-site substation from the existing Environmental Authorisation. The excluded half (the switching station) would be included as part of the environmental authorisation for the grid connection, being applied for in the above-mentioned BAR process. Once environmental authorisation for the grid connection and switching station has been obtained, the Applicant intends to hand the grid connection EA over to Eskom.

**c. The inclusion of erroneously omitted Listed Activities into the EA**

When the original EA was granted in 2012, it is apparent that certain Listed Activities (in terms of the **2010** EIA Regulations) were erroneously omitted. This Amendment Application will include a motivation to include the erroneously omitted 2010 EIA listed activities (and similarly listed 2014 EIA Regulations, as amended, listed activities), into the EA.

Holland & Associates Environmental Consultants has been appointed to undertake the requisite application for environmental authorisation for the proposed grid connection, as well as the application for amendment of the Environmental Authorisation (EA) for the proposed Paarde Valley PV2 project, in accordance with the National Environmental Management Act (NEMA) (No. 107 of 1998) EIA Regulations (2014), as amended. The application for environmental authorisation and the application for amendment of the EA will require an assessment of the proposed grid connection corridor and potential impacts associated with the proposed amendments for the Paarde Valley PV2 project, respectively.

## 4. Terms of Reference

### 4.1 Basic Assessment Report for the proposed Grid Connection to Vetlaagte MTS

- Undertake a site inspection to the study area (if considered necessary) and produce a Site Sensitivity Verification Report (which can be included within your report) that confirms or disputes the sensitivity identified in the National Web-based Screening Tool (Annexure 1) for agriculture[2], and indicate if a Compliance Statement or a Full Specialist Impact Assessment report will be required.
- Conduct any necessary fieldwork and compile a specialist impact assessment report or Compliance Statement in line with the relevant gazetted protocol for agriculture, and include a checklist of content requirements relevant to the specialist report, within your report;

[2] GN 320 of 20 March 2020

- Should a specialist impact assessment report be required, the report must comply with the requirements detailed in Section 2.7 of the *Protocol for the Specialist Assessment and Minimum Report Content Requirements for Environmental Impacts on Agricultural Resources* (attached as Annexure 3). This includes, *inter alia*:
  - A description of the direct, indirect, residual (if any), and cumulative impacts (both before and after mitigation) and an assessment of the significance of the impacts (for the proposed project and "No Go" alternative) (on a nominal scale of Neutral, Negligible, Very Low, Low, Medium, High) by evaluating: (**a) nature of the impacts** (positive/ negative), **(b) extent of the impacts** (zero/ site specific/local/ regional/ national), **(c) magnitude of the impacts** (Zero/ Very Low/ Low/ Medium/High), **(d) duration of the impacts** (none/ short/ medium/ long term) and **(e) probability of occurrence of the impacts** (none/ unlikely/ possible/ probable/ definite). In addition, **(f) the level of confidence in findings** relating to potential impacts**, (g) reversibility of potential impacts** (i.e. the degree to which the impact can be reversed (Zero/ Low/Medium/ High)); and **(h) the degree to which the impact may cause irreplaceable loss of resources** (Zero/ Low/ Medium/ High).
  - An indication of the **degree to which the impacts can be mitigated** (Low/ Medium/ High), a description of the measures to mitigate any impacts, and an indication of whether or not the measures (if implemented) would change the significance of the impact, for the construction, operational and decommissioning (if relevant) phases of the project;
  - An indication of the **degree to which the impact can be avoided** (Low/ Medium/ High) and the **degree to which the impact can be managed** (Low/ Medium/ High).
  - The assessment must take into account and address public comments received during the Public Participation Process (PPP) relating to your area of expertise.
  - The report must include an impact summary table outlining the findings of the assessment in terms of the above-mentioned assessment criteria using the Impact Assessment Methodology and Table Template provided in Annexure 2.
  - If any specific environmental sensitivities relevant to your field of expertise are present on the site which require specific impact management outcomes, and impact management actions, not included in the '*Generic EMPr for the development and expansion of substation infrastructure for the transmission and distribution of electricity*'[3], then the report must include those **impact management outcomes** and **impact management actions** presented in the format of the pre-approved generic EMPr template.
- Should a specialist compliance statement be required, the statement must comply with the requirements detailed in Section 3 of the *Protocol for the Specialist Assessment and Minimum Report Content Requirements for Environmental Impacts on Agricultural Resources* (attached as Annexure 3).

In relation to the Terms of Reference outlined above, the following deliverables are applicable for the Basic Assessment of the proposed Grid Connection:

- A Site Sensitivity Verification Report for the agricultural theme, and

[3] No. 435 in Government Gazette No 42323 of 22 March 2019

- An Agricultural Compliance Statement or Specialist Assessment Report, depending on the outcome of the site inspection.

**4.2 Part 1 EA Amendment Application**

*Note: The original report of your area of expertise is attached as Annexure 4.*

- Undertake a site visit (if deemed necessary) to the authorised Paarde Valley PV2 Site and compile a specialist comment/ statement (on letterhead) addressing the following:
  - The implications of the proposed amendments, if any, in terms of the potential impacts within your area of expertise;
  - An investigation to determine if the baseline environment has changed significantly since the original assessment, which was conducted approximately 10 years ago. This will be required for the proposed amendment to extend the validity period of the EA.
  - A statement as to whether or not the proposed amendments will result in an increased level or change in the nature of the impact, which was initially assessed and considered when application was made for the environmental authorisation. (Note: If any of the proposed amendments will result in an increased level or change in the nature of impacts, then a Part 2 process will need to be followed, and these Terms of Reference will be revised).

In relation to the Terms of Reference outlined above, the following deliverables are applicable for the Amendment Application for the Paarde Valley PV2 Environmental Authorisation:

- A specialist statement/ comment (on letterhead)

**4.3. Timeframes**

In this regard, please confirm your capacity to submit the deliverables listed under 4.1) and 4.2) by 22 April 2022.

Should you have any queries, please contact Anja Albertyn (anja@hollandandassociates.net).

Yours sincerely,

**NICOLE HOLLAND** (*Pr.Sci.Nat.)* **ANJA ALBERTYN** *(Pr.Sci.Nat.)*

**For: Holland & Associates - Environmental Consultants**

Holland & Associates
Environmental Consultants
*Impact Assessments - Environmental Management Programs - Compliance Monitoring - Process Review*

ASHA Consulting (Pty) Ltd

30 March 2022

*Per Email:* jayson@asha-consulting.co.za

**Attention:** Jayson Orton

Dear Jayson,

**BASIC ASSESSMENT FOR THE PROPOSED PAARDE VALLEY PV2 GRID CONNECTION TO VETLAAGTE MAIN TRANSMISSION SUBSTATION (MTS), AND APPLICATION FOR AMENDMENT OF THE ENVIRONMENTAL AUTHORISATION FOR THE PAARDE VALLEY PV2 PHOTOVOLTAIC SOLAR ENERGY FACILITY (DFFE REF NO.: 12/12/20/2500/AM5), NEAR DE AAR IN THE NORTHERN CAPE PROVINCE**

**Heritage Specialist Assessments for the Basic Assessment Process & Heritage Specialist input into the Application for Amendment of the EA**

The purpose of this letter is to provide you with a Terms of Reference to compile a specialist impact assessment for the proposed grid connection from the authorised Paarde Valley PV2 facility to Vetlaagte Main Transmission Substation (MTS), which forms the subject of an Application for Environmental Authorisation (through a Basic Assessment process). This Terms of Reference also includes an assessment of the Paarde Valley PV2 site to inform an Application for Amendment of the Environmental Authorisation (EA) for the authorised Paarde Valley PV2 solar photovoltaic project.

The background to the environmental authorisation process for the authorised Paarde Valley PV2 project, the proposed amendments to the EA, the proposed grid connection, and the Terms of Reference for your specialist inputs, are provided in Sections 1 – 4 below.

## 1. Background

Environmental Authorisation (EA) for 150 MW Paarde Valley PV2 was granted by the Department of Environmental Affairs (DEA) (now known as the Department of Forestry, Fisheries and the Environment (DFFE)) on 7 September 2012, in terms of the NEMA EIA Regulations (2010). The authorised project includes the construction of a PV solar energy facility to generate approximately 75 – 150 MW on the aforementioned farm, as well as 132 kV / 220 kV overhead transmission lines and associated infrastructure (access roads, water supply infrastructure, stormwater infrastructure, internal access roads, buildings and fencing).

An amendment to the EA was issued on 13 March 2013, amending the name of the holder of the EA from Mulilo Renewable Energy (Pty) Ltd to Paarde Valley PV2 (Pty) Ltd.

On 15 June 2015 an amendment to the EA was issued (12/12/20/2500/AM2), which amended the property description in the EA, and extended the validity period of the EA until 7 September 2017.

On 20 July 2017 an amendment to the EA was issued (12/12/20/2500/AM3), amending the Applicants contact details as well as amending the validity period of the EA for an additional three (03) years, i.e. until 7 September 2020.

On 27 August 2020, an amendment to the EA was granted by DFFE (12/12/20/2500/AM4), to extend the validity period of the EA by an additional 2 years, i.e. the EA currently expires on 7 September 2022.

The currently authorised 132kV/ 220kV grid connection for Paarde Valley PV2 is routed from the Paarde Valley PV2 facility to the De Aar substation. However, Eskom has grid capacity constraints in the Northern Cape, and at certain lines and on certain substations. Eskom does not have capacity for the Paarde Valley PV2 to connect at the De Aar substation, accordingly the Applicant wishes to amend the authorised grid connection (realignment and termination point) and create a separate EA for the ESKOM's self-build components (substation & gridline), as outlined in Section 2 below.

## 2. Proposed Grid Connection from Paarde Valley PV2 to Vetlaagte Main Transmission Substation (MTS)

Paarde Valley PV2 (Pty) Ltd (hereafter referred to as the Applicant) proposes the construction of a 132 kV overhead powerline (OHPL) grid connection from the authorised on-site substation at Paarde Valley PV2 to Vetlaagte Main Transmission Station (MTS) (which is currently undergoing its own EA application process). The OHPL is proposed to be approximately 12.7 km in length, and is located in the Strategic Transmission Central Corridor[1]. A 200 m corridor (100 m of each side of the line) is to be assessed, as per the provided kml. The final OHPL servitude will be registered as 31 m but during the design development process a corridor of 200 meters is required to allow for minor tower position adjustments. The exact pylon locations will be determined by the outcome of the specialist's investigations, and engineering considerations. On average there will be 4 - 5 towers per km, so that the route will consist of an approximately 40 towers. The teams constructing the OHPL often use cranes and these will fit into an area with a maximum radius of approximately 30 m around the base of each tower, with the final footprint being relatively small. The line will have a capacity of > 150MVA and will make use of either steel monopole or steel lattice structure in line with Eskom required specifications.
A monopole self-supporting structure has a maximum base of 5 m in diameter above the ground. In some situations the structures have stays. These would fall into the area with a maximum radius of 30 meters, but the stays themselves are hardly exposed at ground level, with only small steel

[1]No. 113 of Government Gazette No. 41445 published 16 February 2018

rods protruding from the ground. Lattice towers have a bigger footprint as each has four legs that are a maximum of 15 m apart so that the final footprint would be approximately 15 m x 15 m. The height of either pylon structure will be up to 32 m.

The project will also include the switching station component of the authorised Paarde Valley PV2 on-site substation, with an approximate footprint area of 100 m x 100m, and a capacity of 132 kV, as this needs to be handed over to Eskom with the grid connection once constructed.

In summary, the infrastructure associated with the proposed Grid Connection works for the Paarde Valley PV2 project (and to be handed back to Eskom following construction), includes the following:

- A 132kV Overhead Power Line (OHPL) from the SwS connecting to the proposed Vetlaagte Main Transmission Substation (MTS)
- Onsite Switching Station (SwS), adjacent to the IPP collector substations (SS). Approximate footprint area of 100m x 100m

The technical details include:

- Height of pylons Up to 32m
- Type of poles/ pylons to be used. The alternatives under consideration and to be assessed include Steel lattice or Monopole structures in line with Eskom required specifications
- Transmission line capacity 132kV
- Area occupied by both permanent and construction laydown areas +-4 Hectares (for grid works only)
- Area occupied by buildings +-1.0 Hectares
- Length of service road(s) – Twin tracked service road following line route
- Width of service road(s) 6 m (8 m if including V-drains) to access the Eskom switching station from the nearest road.
- Height of fencing 2m
- Type of fencing Palisade + farmers fencing for temporary works
- Capacity of on-site substation 132kv

The OHPL and Switching station are required to connect the Paarde Valley PV2 Solar farm to the Eskom National Grid. The route selected follows boundary lines and / or existing OHPL routes so as to limit disruption to current farming activities as much as possible.

## 3. Proposed amendments to the Environmental Authorisation for the Paarde Valley PV2.

### a. Extension of the Validity Period

Paarde Valley PV2 (Pty) Ltd wishes to extend the validity of the Environmental Authorisation (dated 2012) by 18 months, until 7 March 2023, to allow bidding to a private off-taker.

**b. Amend the Project Description of the EA to remove half of the authorised substation**

The Applicant wishes to exclude the switching station component of the authorised on-site substation from the existing Environmental Authorisation. The excluded half (the switching station) would be included as part of the environmental authorisation for the grid connection, being applied for in the above-mentioned BAR process. Once environmental authorisation for the grid connection and switching station has been obtained, the Applicant intends to hand the grid connection EA over to Eskom.

**c. The inclusion of erroneously omitted Listed Activities into the EA**

When the original EA was granted in 2012, it is apparent that certain Listed Activities (in terms of the **2010** EIA Regulations) were erroneously omitted. This Amendment Application will include a motivation to include the erroneously omitted 2010 EIA listed activities (and similarly listed 2014 EIA Regulations, as amended, listed activities), into the EA.

Holland & Associates Environmental Consultants has been appointed to undertake the requisite application for environmental authorisation for the proposed grid connection, as well as the application for amendment of the Environmental Authorisation (EA) for the proposed Paarde Valley PV2 project, in accordance with the National Environmental Management Act (NEMA) (No. 107 of 1998) EIA Regulations (2014), as amended. The application for environmental authorisation and the application for amendment of the EA will require an assessment of the proposed grid connection corridor and potential impacts associated with the proposed amendments for the Paarde Valley PV2 project, respectively.

## 4. Terms of Reference

### 4.1 Basic Assessment Report for the proposed Grid Connection to Vetlaagte MTS

- Undertake a site inspection to the study area and produce a Site Sensitivity Verification Report (which can be included within your report) that confirms or disputes the land use and sensitivity identified in the National Web-based Screening Tool (Annexure 1) for the heritage theme in line with the Gazetted General Requirement Assessment protocol[2] which confirms or disputes the current use of the land.
- Conduct the necessary fieldwork and compile a specialist impact assessment report, in line with Appendix 6 of the EIA Regulations 2014, as amended which includes a checklist of content requirements relevant to the specialist report, within your reports;
- A specialist impact assessment report must address the following:

[2] GN 320 of 20 March 2020 in Government Gazette 43110

- A description of the direct, indirect, residual (if any), and cumulative impacts (both before and after mitigation) and an assessment of the significance of the impacts (for the proposed project and "No Go" alternative) (on a nominal scale of Neutral, Negligible, Very Low, Low, Medium, High) by evaluating: (**a) nature of the impacts** (positive/ negative), **(b) extent of the impacts** (zero/ site specific/local/ regional/ national), **(c) magnitude of the impacts** (Zero/ Very Low/ Low/ Medium/High), **(d) duration of the impacts** (none/ short/ medium/ long term) and **(e) probability of occurrence of the impacts** (none/ unlikely/ possible/ probable/ definite). In addition, **(f) the level of confidence in findings** relating to potential impacts**, (g) reversibility of potential impacts** (i.e. the degree to which the impact can be reversed (Zero/ Low/Medium/ High)); and **(h) the degree to which the impact may cause irreplaceable loss of resources** (Zero/ Low/ Medium/ High).
- An indication of the **degree to which the impacts can be mitigated** (Low/ Medium/ High), a description of the measures to mitigate any impacts, and an indication of whether or not the measures (if implemented) would change the significance of the impact, for the construction, operational and decommissioning (if relevant) phases of the project;
- An indication of the **degree to which the impact can be avoided** (Low/ Medium/ High) and the **degree to which the impact can be managed** (Low/ Medium/ High).
- The assessment must take into account and address public comments received during the Public Participation Process (PPP) relating to your area of expertise.
- The report must include an impact summary table outlining the findings of the assessment in terms of the above-mentioned assessment criteria using the Impact Assessment Methodology and Table Template provided in Annexure 2.
- If any specific environmental sensitivities relevant to your field of expertise are present on the site which require specific impact management outcomes, and impact management actions, not included in the '*Generic EMPr for the development and expansion of substation infrastructure for the transmission and distribution of electricity*'[3], then the report must include those **impact management outcomes** and **impact management actions** presented in the format of the pre-approved generic EMPr template.

In relation to the Terms of Reference outlined above, the following deliverables are applicable for the Basic Assessment of the proposed Grid Connection:

- A Site Sensitivity Verification Report for the heritage theme, and
- A Heritage Specialist Assessment Report

### 4.2 Part 1 EA Amendment Application

- Undertake a site visit to the authorised Paarde Valley PV2 Site and compile a specialist comment/ statement (on letterhead) addressing the following:
  - The implications of the proposed amendments, if any, in terms of the potential impacts within your area of expertise;

[3] No. 435 in Government Gazette No 42323 of 22 March 2019

- An investigation to determine if the baseline environment has changed significantly since the original assessment, which was conducted approximately 10 years ago. This will be required for the proposed amendment to extend the validity period of the EA.
- A statement as to whether or not the proposed amendments will result in an increased level or change in the nature of the impact, which was initially assessed and considered when application was made for the environmental authorisation. (Note: If any of the proposed amendments will result in an increased level or change in the nature of impacts, then a Part 2 process will need to be followed, and these Terms of Reference will be revised).

In relation to the Terms of Reference outlined above, the following deliverables are applicable for the Amendment Application for the Paarde Valley PV2 Environmental Authorisation:

- A specialist statement/ comment (on letterhead)

**4.3. Timeframes**

In this regard, please confirm your capacity to submit the deliverables listed under 4.1) and 4.2) by 22 April 2022.

Should you have any queries, please contact Anja Albertyn (anja@hollandandassociates.net).

Yours sincerely,

**NICOLE HOLLAND** (*Pr.Sci.Nat.)* **ANJA ALBERTYN** *(Pr.Sci.Nat.)*

**For: Holland & Associates - Environmental Consultants**

Holland & Associates
Environmental Consultants
*Impact Assessments - Environmental Management Programs - Compliance Monitoring - Process Review*

Quinton Lawson & Bernard Oberholzer

30 March 2022

*Per Email:* Bernard.bola@gmail.com & quinton@openmail.co.za

**Attention:** Quinton Lawson & Bernard Oberholzer

Dear Quinton & Bernard

**BASIC ASSESSMENT FOR THE PROPOSED PAARDE VALLEY PV2 GRID CONNECTION TO VETLAAGTE MAIN TRANSMISSION SUBSTATION (MTS), AND APPLICATION FOR AMENDMENT OF THE ENVIRONMENTAL AUTHORISATION FOR THE PAARDE VALLEY PV2 PHOTOVOLTAIC SOLAR ENERGY FACILITY (DFFE REF NO.: 12/12/20/2500/AM5), NEAR DE AAR IN THE NORTHERN CAPE PROVINCE**

**Visual Specialist Impact Assessment for the Basic Assessment Process &**
**Visual Specialist input into the Application for Amendment of the EA**

The purpose of this letter is to provide you with a Terms of Reference to compile specialist impact assessments for the proposed grid connection from the authorised Paarde Valley PV2 facility to Vetlaagte Main Transmission Substation (MTS), which forms the subject of an Application for Environmental Authorisation (through a Basic Assessment process). This Terms of Reference also includes an assessment of the Paarde Valley PV2 site to inform an Application for Amendment of the Environmental Authorisation (EA) for the authorised Paarde Valley PV2 solar photovoltaic project.

The background to the environmental authorisation process for the authorised Paarde Valley PV2 project, the proposed amendments to the EA, the proposed grid connection, and the Terms of Reference for your specialist inputs, are provided in Sections 1 – 4 below.

## 1. Background

Environmental Authorisation (EA) for 150 MW Paarde Valley PV2 was granted by the Department of Environmental Affairs (DEA) (now known as the Department of Forestry, Fisheries and the Environment (DFFE)) on 7 September 2012, in terms of the NEMA EIA Regulations (2010). The authorised project includes the construction of a PV solar energy facility to generate approximately 75 – 150 MW on the aforementioned farm, as well as 132 kV / 220 kV overhead transmission lines and associated infrastructure (access roads, water supply infrastructure, stormwater infrastructure, internal access roads, buildings and fencing).

An amendment to the EA was issued on 13 March 2013, amending the name of the holder of the EA from Mulilo Renewable Energy (Pty) Ltd to Paarde Valley PV2 (Pty) Ltd.

On 15 June 2015 an amendment to the EA was issued (12/12/20/2500/AM2), which amended the property description in the EA, and extended the validity period of the EA until 7 September 2017.

On 20 July 2017 an amendment to the EA was issued (12/12/20/2500/AM3), amending the Applicants contact details as well as amending the validity period of the EA for an additional three (03) years, i.e. until 7 September 2020.

On 27 August 2020, an amendment to the EA was granted by DFFE (12/12/20/2500/AM4), to extend the validity period of the EA by an additional 2 years, i.e. the EA currently expires on 7 September 2022.

The currently authorised 132kV/ 220kV grid connection for Paarde Valley PV2 is routed from the Paarde Valley PV2 facility to the De Aar substation. However, Eskom has grid capacity constraints in the Northern Cape, and at certain lines and on certain substations. Eskom does not have capacity for the Paarde Valley PV2 to connect at the De Aar substation, accordingly the Applicant wishes to amend the authorised grid connection (realignment and termination point) and create a separate EA for the ESKOM's self-build components (substation & gridline), as outlined in Section 2 below.

## 2. Proposed Grid Connection from Paarde Valley PV2 to Vetlaagte Main Transmission Substation (MTS)

Paarde Valley PV2 (Pty) Ltd (hereafter referred to as the Applicant) proposes the construction of a 132 kV overhead powerline (OHPL) grid connection from the authorised on-site substation at Paarde Valley PV2 to Vetlaagte Main Transmission Station (MTS) (which is currently undergoing its own EA application process). The OHPL is proposed to be approximately 12.7 km in length, and is located in the Strategic Transmission Central Corridor[1]. A 200 m corridor (100 m of each side of the line) is to be assessed, as per the provided kml. The final OHPL servitude will be registered as 31 m but during the design development process a corridor of 200 meters is required to allow for minor tower position adjustments. The exact pylon locations will be determined by the outcome of the specialist's investigations, and engineering considerations. On average there will be 4 - 5 towers per km, so that the route will consist of approximately 40 towers. The teams constructing the OHPL often use cranes and these will fit into an area with a maximum radius of approximately 30 m around the base of each tower, with the final footprint being relatively small. The line will have a capacity of >150MVA and will make use of either steel monopole or steel lattice structure in line with Eskom required specifications.

A monopole self-supporting structure has a maximum base of 5 m in diameter above the ground. In some situations the structures have stays. These would fall into the area with a maximum radius

[1]No. 113 of Government Gazette No. 41445 published 16 February 2018

of 30 meters, but the stays themselves are hardly exposed at ground level, with only small steel rods protruding from the ground. Lattice towers have a bigger footprint as each has four legs that are a maximum of 15 m apart so that the final footprint would be approximately 15 m x 15 m. The height of either pylon structure will be up to 32 m.

The project will also include the switching station component of the authorised Paarde Valley PV2 on-site substation, with an approximate footprint area of 100 m x 100m, and a capacity of 132 kV, as this needs to be handed over to Eskom with the grid connection once constructed.

In summary, the infrastructure associated with the proposed Grid Connection works for the Paarde Valley PV2 project (and to be handed back to Eskom following construction), includes the following:

- A 132kV Overhead Power Line (OHPL) from the SwS connecting to the proposed Vetlaagte Main Transmission Substation (MTS)
- On-site Switching Station (SwS), adjacent to the IPP collector substations (SS). Approximate footprint area of 100 m x 100 m

The technical details include:

- Height of pylons Up to 32m
- Type of poles/ pylons to be used. The alternatives under consideration and to be assessed include Steel lattice or Monopole structures in line with Eskom required specifications
- Transmission line capacity 132kV
- Area occupied by both permanent and construction laydown areas +-4 Hectares (for grid works only)
- Area occupied by buildings +-1.0 Hectares
- Length of service road(s) – Twin tracked service road following line route
- Width of service road(s) 6 m (8 m if including V-drains) to access the Eskom switching station from the nearest road.
- Height of fencing 2m
- Type of fencing Palisade + farmers fencing for temporary works
- Capacity of on-site substation 132kv

The OHPL and Switching station are required to connect the Paarde Valley PV2 Solar farm to the Eskom National Grid. The route selected follows boundary lines and / or existing OHPL routes so as to limit disruption to current farming activities as much as possible.

## 3. Proposed amendments to the Environmental Authorisation for the Paarde Valley PV2.

### a. Extension of the Validity Period

Paarde Valley PV2 (Pty) Ltd wishes to extend the validity of the Environmental Authorisation (dated 2012) by 18 months, until 7 March 2023, to allow bidding to a private off-taker.

**b. Amend the Project Description of the EA to remove half of the authorised substation**

The Applicant wishes to exclude the switching station component of the authorised on-site substation from the existing Environmental Authorisation. The excluded half (the switching station) would be included as part of the environmental authorisation for the grid connection, being applied for in the above-mentioned BAR process. Once environmental authorisation for the grid connection and switching station has been obtained, the Applicant intends to hand the grid connection EA over to Eskom.

**c. The inclusion of erroneously omitted Listed Activities into the EA**

When the original EA was granted in 2012, it is apparent that certain Listed Activities (in terms of the **2010** EIA Regulations) were erroneously omitted. This Amendment Application will include a motivation to include the erroneously omitted 2010 EIA listed activities (and similarly listed 2014 EIA Regulations, as amended, listed activities), into the EA.

Holland & Associates Environmental Consultants has been appointed to undertake the requisite application for environmental authorisation for the proposed grid connection, as well as the application for amendment of the Environmental Authorisation (EA) for the proposed Paarde Valley PV2 project, in accordance with the National Environmental Management Act (NEMA) (No. 107 of 1998) EIA Regulations (2014), as amended. The application for environmental authorisation and the application for amendment of the EA will require an assessment of the proposed grid connection corridor and potential impacts associated with the proposed amendments for the Paarde Valley PV2 project, respectively.

## 4. Terms of Reference

### 4.1 Basic Assessment Report for the proposed Grid Connection to Vetlaagte MTS

- Undertake a site inspection to the study area and produce a Site Sensitivity Verification Report (which can be included within your report) that confirms or disputes the land use and sensitivity identified in the National Web-based Screening Tool (Annexure 1) for landscape / visual, in line with the Gazetted General Requirement Assessment protocol[2] which confirms or disputes the current use of the land.
- Conduct the necessary fieldwork and compile a specialist impact assessment report, in line with Appendix 6 of the EIA Regulations, 2014, as amended, which includes a checklist of the content requirements relevant to the specialist report, within your reports;

[2] GNo 320 of 20 March 2020 in Government Gazette 43110

- A specialist impact assessment report must address the following:
  - A description of the direct, indirect, residual (if any), and cumulative impacts (both before and after mitigation) and an assessment of the significance of the impacts (for the proposed project and "No Go" alternative) (on a nominal scale of Neutral, Negligible, Very Low, Low, Medium, High) by evaluating: (**a) nature of the impacts** (positive/ negative), **(b) extent of the impacts** (zero/ site specific/local/ regional/ national), **(c) magnitude of the impacts** (Zero/ Very Low/ Low/ Medium/High), **(d) duration of the impacts** (none/ short/ medium/ long term) and **(e) probability of occurrence of the impacts** (none/ unlikely/ possible/ probable/ definite). In addition, **(f) the level of confidence in findings** relating to potential impacts**, (g) reversibility of potential impacts** (i.e. the degree to which the impact can be reversed (Zero/ Low/Medium/ High)); and **(h) the degree to which the impact may cause irreplaceable loss of resources** (Zero/ Low/ Medium/ High).
  - An indication of the **degree to which the impacts can be mitigated** (Low/ Medium/ High), a description of the measures to mitigate any impacts, and an indication of whether or not the measures (if implemented) would change the significance of the impact, for the construction, operational and decommissioning (if relevant) phases of the project;
  - An indication of the **degree to which the impact can be avoided** (Low/ Medium/ High) and the **degree to which the impact can be managed** (Low/ Medium/ High).
  - The assessment must take into account and address public comments received during the Public Participation Process (PPP) relating to your area of expertise.
  - The report must include an impact summary table outlining the findings of the assessment in terms of the above-mentioned assessment criteria using the Impact Assessment Methodology and Table Template provided in Annexure 2.
  - If any specific environmental sensitivities relevant to your field of expertise are present on the site which require specific impact management outcomes, and impact management actions, not included in the '*Generic EMPr for the development and expansion of substation infrastructure for the transmission and distribution of electricity*'[3], then the report must include those **impact management outcomes** and **impact management actions** presented in the format of the pre-approved generic EMPr template.

In relation to the Terms of Reference outlined above, the following deliverables are applicable for the Basic Assessment of the proposed Grid Connection:

- A Site Sensitivity Verification Report for the landscape / visual theme.
- A Landscape / Visual Specialist Assessment Report

### 4.2 Part 1 EA Amendment Application

- Undertake a site visit to the authorised Paarde Valley PV2 Site and compile a specialist comment/ statement (on letterhead) addressing the following:
  - The implications of the proposed amendments, if any, in terms of the potential impacts within your area of expertise;

[3] No. 435 in Government Gazette No 42323 of 22 March 2019

- An investigation to determine if the baseline environment has changed significantly since the original assessment, which was conducted approximately 10 years ago. This will be required for the proposed amendment to extend the validity period of the EA.
- A statement as to whether or not the proposed amendments will result in an increased level or change in the nature of the impact, which was initially assessed and considered when application was made for the environmental authorisation. (Note: If any of the proposed amendments will result in an increased level or change in the nature of impacts, then a Part 2 process will need to be followed, and these Terms of Reference will be revised).
- The site visit should cover site work needing to be conducted, should an extension to the validity of the EA not be granted, and a new EA process for the PV plant be required.

In relation to the Terms of Reference outlined above, the following deliverables are applicable for the Amendment Application for the Paarde Valley PV2 Environmental Authorisation:

- A specialist statement/ comment (on letterhead)

**4.3. Timeframes**

In this regard, please confirm your capacity to submit the deliverables listed under 4.1) and 4.2) by 22 April 2022.

Should you have any queries, please contact Anja Albertyn (anja@hollandandassociates.net).

Yours sincerely,

**NICOLE HOLLAND** (*Pr.Sci.Nat.)* **ANJA ALBERTYN** *(Pr.Sci.Nat.)*

**For: Holland & Associates - Environmental Consultants**

Holland & Associates
Environmental Consultants
*Impact Assessments - Environmental Management Programs - Compliance Monitoring - Process Review*

Banzai Environmental (Pty) Ltd

30 March 2022

*Per Email:* info@banzai-group.com

**Attention:** Elize Butler

Dear Elize,

**BASIC ASSESSMENT FOR THE PROPOSED PAARDE VALLEY PV2 GRID CONNECTION TO VETLAAGTE MAIN TRANSMISSION SUBSTATION (MTS), AND APPLICATION FOR AMENDMENT OF THE ENVIRONMENTAL AUTHORISATION FOR THE PAARDE VALLEY PV2 PHOTOVOLTAIC SOLAR ENERGY FACILITY (DFFE REF NO.: 12/12/20/2500/AM5), NEAR DE AAR IN THE NORTHERN CAPE PROVINCE**

**Palaeontology Specialist Assessments for the Basic Assessment Process & Palaeontology Specialist input into the Application for Amendment of the EA**

The purpose of this letter is to provide you with a Terms of Reference to compile a specialist impact assessment for the proposed grid connection from the authorised Paarde Valley PV2 facility to Vetlaagte Main Transmission Substation (MTS), which forms the subject of an Application for Environmental Authorisation (through a Basic Assessment process). This Terms of Reference also includes an assessment of the Paarde Valley PV2 site to inform an Application for Amendment of the Environmental Authorisation (EA) for the authorised Paarde Valley PV2 solar photovoltaic project.

The background to the environmental authorisation process for the authorised Paarde Valley PV2 project, the proposed amendments to the EA, the proposed grid connection, and the Terms of Reference for your specialist inputs, are provided in Sections 1 – 4 below.

## 1. Background

Environmental Authorisation (EA) for 150 MW Paarde Valley PV2 was granted by the Department of Environmental Affairs (DEA) (now known as the Department of Forestry, Fisheries and the Environment (DFFE)) on 7 September 2012, in terms of the NEMA EIA Regulations (2010). The authorised project includes the construction of a PV solar energy facility to generate approximately 75 – 150 MW on the aforementioned farm, as well as 132 kV / 220 kV overhead transmission lines and associated infrastructure (access roads, water supply infrastructure, stormwater infrastructure, internal access roads, buildings and fencing).

An amendment to the EA was issued on 13 March 2013, amending the name of the holder of the EA from Mulilo Renewable Energy (Pty) Ltd to Paarde Valley PV2 (Pty) Ltd.

On 15 June 2015 an amendment to the EA was issued (12/12/20/2500/AM2), which amended the property description in the EA, and extended the validity period of the EA until 7 September 2017.

On 20 July 2017 an amendment to the EA was issued (12/12/20/2500/AM3), amending the Applicants contact details as well as amending the validity period of the EA for an additional three (03) years, i.e. until 7 September 2020.

On 27 August 2020, an amendment to the EA was granted by DFFE (12/12/20/2500/AM4), to extend the validity period of the EA by an additional 2 years, i.e. the EA currently expires on 7 September 2022.

The currently authorised 132kV/ 220kV grid connection for Paarde Valley PV2 is routed from the Paarde Valley PV2 facility to the De Aar substation. However, Eskom has grid capacity constraints in the Northern Cape, and at certain lines and on certain substations. Eskom does not have capacity for the Paarde Valley PV2 to connect at the De Aar substation, accordingly the Applicant wishes to amend the authorised grid connection (realignment and termination point) and create a separate EA for the ESKOM's self-build components (substation & gridline), as outlined in Section 2 below.

## 2. Proposed Grid Connection from Paarde Valley PV2 to Vetlaagte Main Transmission Substation (MTS)

Paarde Valley PV2 (Pty) Ltd (hereafter referred to as the Applicant) proposes the construction of a 132 kV overhead powerline (OHPL) grid connection from the authorised on-site substation at Paarde Valley PV2 to Vetlaagte Main Transmission Station (MTS) (which is currently undergoing its own EA application process). The OHPL is proposed to be approximately 12.7 km in length, and is located in the Strategic Transmission Central Corridor[1]. A 200 m corridor (100 m of each side of the line) is to be assessed, as per the provided kml. The final OHPL servitude will be registered as 31 m but during the design development process a corridor of 200 meters is required to allow for minor tower position adjustments. The exact pylon locations will be determined by the outcome of the specialist's investigations, and engineering considerations. On average there will be 4 - 5 towers per km, so that the route will consist of an approximately 40 towers. The teams constructing the OHPL often use cranes and these will fit into an area with a maximum radius of approximately 30 m around the base of each tower, with the final footprint being relatively small. The line will have a capacity of > 150MVA and will make use of either steel monopole or steel lattice structure in line with Eskom required specifications.
A monopole self-supporting structure has a maximum base of 5 m in diameter above the ground. In some situations the structures have stays. These would fall into the area with a maximum radius of 30 meters, but the stays themselves are hardly exposed at ground level, with only small steel

[1]No. 113 of Government Gazette No. 41445 published 16 February 2018

rods protruding from the ground. Lattice towers have a bigger footprint as each has four legs that are a maximum of 15 m apart so that the final footprint would be approximately 15 m x 15 m. The height of either pylon structure will be up to 32 m.

The project will also include the switching station component of the authorised Paarde Valley PV2 on-site substation, with an approximate footprint area of 100 m x 100m, and a capacity of 132 kV, as this needs to be handed over to Eskom with the grid connection once constructed.

In summary, the infrastructure associated with the proposed Grid Connection works for the Paarde Valley PV2 project (and to be handed back to Eskom following construction), includes the following:

- A 132kV Overhead Power Line (OHPL) from the SwS connecting to the proposed Vetlaagte Main Transmission Substation (MTS)
- Onsite Switching Station (SwS), adjacent to the IPP collector substations (SS). Approximate footprint area of 100m x 100m

The technical details include:

- Height of pylons Up to 32m
- Type of poles/ pylons to be used. The alternatives under consideration and to be assessed include Steel lattice or Monopole structures in line with Eskom required specifications
- Transmission line capacity 132kV
- Area occupied by both permanent and construction laydown areas +-4 Hectares (for grid works only)
- Area occupied by buildings +-1.0 Hectares
- Length of service road(s) – Twin tracked service road following line route
- Width of service road(s) 6 m (8 m if including V-drains) to access the Eskom switching station from the nearest road.
- Height of fencing 2m
- Type of fencing Palisade + farmers fencing for temporary works
- Capacity of on-site substation 132kv

The OHPL and Switching station are required to connect the Paarde Valley PV2 Solar farm to the Eskom National Grid. The route selected follows boundary lines and / or existing OHPL routes so as to limit disruption to current farming activities as much as possible.

## 3. Proposed amendments to the Environmental Authorisation for the Paarde Valley PV2.

### a. Extension of the Validity Period

Paarde Valley PV2 (Pty) Ltd wishes to extend the validity of the Environmental Authorisation (dated 2012) by 18 months, until 7 March 2023, to allow bidding to a private off-taker.

**b. Amend the Project Description of the EA to remove half of the authorised substation**

The Applicant wishes to exclude the switching station component of the authorised on-site substation from the existing Environmental Authorisation. The excluded half (the switching station) would be included as part of the environmental authorisation for the grid connection, being applied for in the above-mentioned BAR process. Once environmental authorisation for the grid connection and switching station has been obtained, the Applicant intends to hand the grid connection EA over to Eskom.

**c. The inclusion of erroneously omitted Listed Activities into the EA**

When the original EA was granted in 2012, it is apparent that certain Listed Activities (in terms of the **2010** EIA Regulations) were erroneously omitted. This Amendment Application will include a motivation to include the erroneously omitted 2010 EIA listed activities (and similarly listed 2014 EIA Regulations, as amended, listed activities), into the EA.

Holland & Associates Environmental Consultants has been appointed to undertake the requisite application for environmental authorisation for the proposed grid connection, as well as the application for amendment of the Environmental Authorisation (EA) for the proposed Paarde Valley PV2 project, in accordance with the National Environmental Management Act (NEMA) (No. 107 of 1998) EIA Regulations (2014), as amended. The application for environmental authorisation and the application for amendment of the EA will require an assessment of the proposed grid connection corridor and potential impacts associated with the proposed amendments for the Paarde Valley PV2 project, respectively.

## 4. Terms of Reference

### 4.1 Basic Assessment Report for the proposed Grid Connection to Vetlaagte MTS

- Undertake a site inspection to the study area and produce a Site Sensitivity Verification Report (which can be included within your report) that confirms or disputes the land use and sensitivity identified in the National Web-based Screening Tool (Annexure 1) for the heritage theme in line with the Gazetted General Requirement Assessment protocol[2] which confirms or disputes the current use of the land.
- Conduct the necessary fieldwork and compile a specialist impact assessment report, in line with Appendix 6 of the EIA Regulations 2014, as amended, and include a checklist of content requirements relevant to the specialist report, within your reports;
- A specialist impact assessment report must address the following:

[2] GN 320 of 20 March 2020 in Government Gazette 43110

- A description of the direct, indirect, residual (if any), and cumulative impacts (both before and after mitigation) and an assessment of the significance of the impacts (for the proposed project and "No Go" alternative) (on a nominal scale of Neutral, Negligible, Very Low, Low, Medium, High) by evaluating: (**a) nature of the impacts** (positive/ negative), **(b) extent of the impacts** (zero/ site specific/local/ regional/ national), **(c) magnitude of the impacts** (Zero/ Very Low/ Low/ Medium/High), **(d) duration of the impacts** (none/ short/ medium/ long term) and **(e) probability of occurrence of the impacts** (none/ unlikely/ possible/ probable/ definite). In addition, **(f) the level of confidence in findings** relating to potential impacts**, (g) reversibility of potential impacts** (i.e. the degree to which the impact can be reversed (Zero/ Low/Medium/ High)); and **(h) the degree to which the impact may cause irreplaceable loss of resources** (Zero/ Low/ Medium/ High).
- An indication of the **degree to which the impacts can be mitigated** (Low/ Medium/ High), a description of the measures to mitigate any impacts, and an indication of whether or not the measures (if implemented) would change the significance of the impact, for the construction, operational and decommissioning (if relevant) phases of the project;
- An indication of the **degree to which the impact can be avoided** (Low/ Medium/ High) and the **degree to which the impact can be managed** (Low/ Medium/ High).
- The assessment must take into account and address public comments received during the Public Participation Process (PPP) relating to your area of expertise.
- The report must include an impact summary table outlining the findings of the assessment in terms of the above-mentioned assessment criteria using the Impact Assessment Methodology and Table Template provided in Annexure 2.
- If any specific environmental sensitivities relevant to your field of expertise are present on the site which require specific impact management outcomes, and impact management actions, not included in the '*Generic EMPr for the development and expansion of substation infrastructure for the transmission and distribution of electricity*'[3], then the report must include those **impact management outcomes** and **impact management actions** presented in the format of the pre-approved generic EMPr template.

In relation to the Terms of Reference outlined above, the following deliverables are applicable for the Basic Assessment of the proposed Grid Connection:

- A Site Sensitivity Verification Report for the palaeontology theme, and
- A Palaeontology Specialist Assessment Report.

### 4.2 Part 1 EA Amendment Application

- Undertake a site visit to the authorised Paarde Valley PV2 Site and compile a specialist comment/ statement (on letterhead) addressing the following:
  - The implications of the proposed amendments, if any, in terms of the potential impacts within your area of expertise;

[3] No. 435 in Government Gazette No 42323 of 22 March 2019

- An investigation to determine if the baseline environment has changed significantly since the original assessment, which was conducted approximately 10 years ago. This will be required for the proposed amendment to extend the validity period of the EA.
- A statement as to whether or not the proposed amendments will result in an increased level or change in the nature of the impact, which was initially assessed and considered when application was made for the environmental authorisation. (Note: If any of the proposed amendments will result in an increased level or change in the nature of impacts, then a Part 2 process will need to be followed, and these Terms of Reference will be revised).

In relation to the Terms of Reference outlined above, the following deliverables are applicable for the Amendment Application for the Paarde Valley PV2 Environmental Authorisation:

- A specialist statement/ comment (on letterhead)

**4.3. Timeframes**

In this regard, please confirm your capacity to submit the deliverables listed under 4.1) and 4.2) by 22 April 2022.

Should you have any queries, please contact Anja Albertyn (anja@hollandandassociates.net).

Yours sincerely,

**NICOLE HOLLAND** (*Pr.Sci.Nat.)* **ANJA ALBERTYN** *(Pr.Sci.Nat.)*

**For: Holland & Associates - Environmental Consultants**

**P O Box 31108, Tokai, 7966, South Africa**
**Mobile 0834645246 ~ Fax 086 7626126 ~ e-mail: info@hollandandassociates.net**
**Web: www.hollandandassociates.net**

Holland & Associates
Environmental Consultants
*Impact Assessments - Environmental Management Programs - Compliance Monitoring - Process Review*

David Hoare Consulting (Pty) Ltd

29 March 2022

*Per Email:* dhoare@lantic.net

**Attention:** David Hoare

Dear David,

**BASIC ASSESSMENT FOR THE PROPOSED PAARDE VALLEY PV2 GRID CONNECTION TO VETLAAGTE MAIN TRANSMISSION SUBSTATION (MTS), AND APPLICATION FOR AMENDMENT OF THE ENVIRONMENTAL AUTHORISATION FOR THE PAARDE VALLEY PV2 PHOTOVOLTAIC SOLAR ENERGY FACILITY (DFFE REF NO.: 12/12/20/2500/AM5), NEAR DE AAR IN THE NORTHERN CAPE PROVINCE**

**Terrestrial Biodiversity, Terrestrial Plant Species and Terrestrial Animal Species Specialist Assessments for the Basic Assessment Process &**
**Specialist input into the Application for Amendment of the EA**

The purpose of this letter it to provide you with a Terms of Reference to compile specialist impact assessments for the proposed grid connection from the authorised Paarde Valley PV2 facility to Vetlaagte Main Transmission Substation (MTS), which forms the subject of an Application for Environmental Authorisation (through a Basic Assessment process). This Terms of Reference also includes an assessment of the Paarde Valley PV2 site to inform an Application for Amendment of the Environmental Authorisation (EA) for the authorised Paarde Valley PV2 solar photovoltaic project.

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## 1. Background

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transmission lines and associated infrastructure (access roads, water supply infrastructure, stormwater infrastructure, internal access roads, buildings and fencing).

An amendment to the EA was issued on 13 March 2013, amending the name of the holder of the EA from Mulilo Renewable Energy (Pty) Ltd to Paarde Valley PV2 (Pty) Ltd.

On 15 June 2015 an amendment to the EA was issued (12/12/20/2500/AM2), which amended the property description in the EA, and extended the validity period of the EA until 7 September 2017.

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The currently authorised 132kV/ 220kV grid connection for Paarde Valley PV2 is routed from the Paarde Valley PV2 facility to the De Aar substation. However, Eskom has grid capacity constraints in the Northern Cape, and at certain lines and on certain substations. Eskom does not have capacity for the Paarde Valley PV2 to connect at the De Aar substation, accordingly the Applicant wishes to amend the authorised grid connection (realignment and termination point) and create a separate EA for the ESKOM's self-build components (substation & gridline), as outlined in Section 2 below.

## 2. Proposed Grid Connection from Paarde Valley PV2 to Vetlaagte Main Transmission Substation (MTS)

Paarde Valley PV2 (Pty) Ltd (hereafter referred to as the Applicant) proposes the construction of a 132 kV overhead powerline (OHPL) grid connection from the authorised on-site substation at Paarde Valley PV2 to Vetlaagte Main Transmission Station (MTS) (which is currently undergoing its own EA application process). The OHPL is proposed to be approximately 12.7 km in length, and is located in the Strategic Transmission Central Corridor[1]. A 200 m corridor (100 m of each side of the line) is to be assessed, as per the provided kml. The final OHPL servitude will be registered as 31 m but during the design development process a corridor of 200 meters is required to allow for minor tower position adjustments. The exact pylon locations will be determined by the outcome of the specialist's investigations, and engineering considerations. On average there will be 4 - 5 towers per km, so that the route will consist of an approximately 40 towers. The teams constructing the OHPL often use cranes and these will fit into an area with a maximum radius of approximately 30 m around the base of each tower, with the final footprint being relatively small. The line will have a capacity of > 150MVA and will make use of either steel monopole or steel lattice structure in line with Eskom required specifications.

[1]No. 113 of Government Gazette No. 41445 published 16 February 2018

A monopole self-supporting structure has a maximum base of 5 m in diameter above the ground. In some situations the structures have stays. These would fall into the area with a maximum radius of 30 meters, but the stays themselves are hardly exposed at ground level, with only small steel rods protruding from the ground. Lattice towers have a bigger footprint as each has four legs that are a maximum of 15 m apart so that the final footprint would be approximately 15 m x 15 m. The height of either pylon structure will be up to 32 m.

The project will also include the switching station component of the authorised Paarde Valley PV2 on-site substation, with an approximate footprint area of 100 m x 100m, and a capacity of 132 kV, as this needs to be handed over to Eskom with the grid connection once constructed.

In summary, the infrastructure associated with the proposed Grid Connection works for the Paarde Valley PV2 project (and to be handed back to Eskom following construction), includes the following:

- A 132kV Overhead Power Line (OHPL) from the SwS connecting to the proposed Vetlaagte Main Transmission Substation (MTS)
- Onsite Switching Station (SwS), adjacent to the IPP collector substations (SS). Approximate footprint area of 100m x 100m

The technical details include:

- Height of pylons Up to 32m
- Type of poles/ pylons to be used. The alternatives under consideration and to be assessed include Steel lattice or Monopole structures in line with Eskom required specifications
- Transmission line capacity 132kV
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- Area occupied by buildings +-1.0 Hectares
- Length of service road(s) – Twin tracked service road following line route
- Width of service road(s) 6 m (8 m if including V-drains) to access the Eskom switching station from the nearest road.
- Height of fencing 2m
- Type of fencing Palisade + farmers fencing for temporary works
- Capacity of on-site substation 132kv

The OHPL and Switching station are required to connect the Paarde Valley PV2 Solar farm to the Eskom National Grid. The route selected follows boundary lines and / or existing OHPL routes so as to limit disruption to current farming activities as much as possible.

## 3. Proposed amendments to the Environmental Authorisation for the Paarde Valley PV2.

### a. Extension of the Validity Period

Paarde Valley PV2 (Pty) Ltd wishes to extend the validity of the Environmental Authorisation (dated 2012) by 18 months, until 7 March 2023, to allow bidding to a private off-taker.

**b. Amend the Project Description of the EA to remove half of the authorised substation**

The Applicant wishes to exclude the switching station component of the authorised on-site substation from the existing Environmental Authorisation. The excluded half (the switching station) would be included as part of the environmental authorisation for the grid connection, being applied for in the above-mentioned BAR process. Once environmental authorisation for the grid connection and switching station has been obtained, the Applicant intends to hand the grid connection EA over to Eskom.

**c. The inclusion of erroneously omitted Listed Activities into the EA**

When the original EA was granted in 2012, it is apparent that certain Listed Activities (in terms of the **2010** EIA Regulations) were erroneously omitted. This Amendment Application will include a motivation to include the erroneously omitted 2010 EIA listed activities (and similarly listed 2014 EIA Regulations, as amended, listed activities), into the EA.

Holland & Associates Environmental Consultants has been appointed to undertake the requisite application for environmental authorisation for the proposed grid connection, as well as the application for amendment of the Environmental Authorisation (EA) for the proposed Paarde Valley PV2 project, in accordance with the National Environmental Management Act (NEMA) (No. 107 of 1998) EIA Regulations (2014), as amended. The application for environmental authorisation and the application for amendment of the EA will require an assessment of the proposed grid connection corridor and potential impacts associated with the proposed amendments for the Paarde Valley PV2 project, respectively.

## 4. Terms of Reference

### 4.1 Basic Assessment Report for the proposed Grid Connection to Vetlaagte MTS

- Undertake a site inspection to the study area and produce a Site Sensitivity Verification Report that confirms or disputes the land use and sensitivity identified in the National Web-based Screening Tool (Annexure 1) for terrestrial biodiversity[2], the terrestrial animal species theme[3] (excluding the taxon Aves) and the terrestrial plant species theme[2] and indicate if a

[2] GN 320 of 20 March 2020
[3] GN 1150 of 30 October 2020

Compliance Statement or a Full Specialist Impact Assessment report will be required for each.

- Conduct the necessary fieldwork and compile a specialist impact assessment report or Compliance Statement for each, in line with the relevant gazetted protocol for terrestrial biodiversity, terrestrial plant species and terrestrial animal species (excluding the taxon Aves) and include a checklist of content requirements relevant to the specialist report, within your reports;
- A specialist impact assessment report must address the following:
  - The local and regional context of the vegetation communities and plant species within the affected areas, taking cognizance of the relevant biodiversity plans, bioregional planning documents, Environmental Management Frameworks, etc.
  - Confirm whether the proposed development and its alternatives will have an impact on CBAs or ESAs. If the proposed project will impact on CBA's or ESA's, please explain, and include a description of how the proposed development will influence the quantitative values (hectares/percentage) of the categories on the CBA/ESA map. The reasons provided in the WCBSP (2017) for the designation of any CBA/ ESA areas must be provided, as well as how the ground-truthing relates to the reasons provided.
  - The ecosystem status and conservation value of the vegetation communities, including whether the potentially affected areas comprise critically endangered or endangered ecosystem(s) listed in terms of section 52 of the NEMBA;
  - Any rare or endangered species, or species of conservation concern encountered or likely to be or have been present;
  - The presence of and proximity of the proposed site to protected area(s) identified in terms of NEMPAA and proximity to a Biosphere Reserve (where relevant) (within, at least, a 20 km radius of the site).
  - A description of the direct, indirect, residual (if any), and cumulative impacts (both before and after mitigation) and an assessment of the significance of the impacts (for the proposed project and "No Go" alternative) (on a nominal scale of Neutral, Negligible, Very Low, Low, Medium, High) by evaluating: (**a) nature of the impacts** (positive/ negative), **(b) extent of the impacts** (zero/ site specific/local/ regional/ national), **(c) magnitude of the impacts** (Zero/ Very Low/ Low/ Medium/High), **(d) duration of the impacts** (none/ short/ medium/ long term) and **(e) probability of occurrence of the impacts** (none/ unlikely/ possible/ probable/ definite). In addition, **(f) the level of confidence in findings** relating to potential impacts**, (g) reversibility of potential impacts** (i.e. the degree to which the impact can be reversed (Zero/ Low/Medium/ High)); and **(h) the degree to which the impact may cause irreplaceable loss of resources** (Zero/ Low/ Medium/ High).
  - An indication of the **degree to which the impacts can be mitigated** (Low/ Medium/ High), a description of the measures to mitigate any impacts, and an indication of whether or not the measures (if implemented) would change the significance of the impact, for the construction, operational and decommissioning (if relevant) phases of the project;
  - An indication of the **degree to which the impact can be avoided** (Low/ Medium/ High) and the **degree to which the impact can be managed** (Low/ Medium/ High).
  - Delineate the vegetation communities and sensitive areas from a floristic perspective using GPS to fix locations, and overlay onto a site map (i.e. create a vegetation sensitivity map of the project area);

- Confirm the approximate area (in $m^2$) of "indigenous vegetation" (as defined in the NEMA EIA Regulations) that would be cleared or inundated by the proposed project.
- In terms of biodiversity, identify all relevant legislation, permits, standards or licensing requirements that would apply to the proposed project;
- The assessment must take into account and address public comments received during the Public Participation Process (PPP) relating to your area of expertise.
- The report must include an impact summary table outlining the findings of the assessment in terms of the above-mentioned assessment criteria using the Impact Assessment Methodology and Table Template provided in Annexure 2.
- If any specific environmental sensitivities relevant to your field of expertise are present on the site which require specific impact management outcomes, and impact management actions, not included in the '*Generic EMPr for the development and expansion of substation infrastructure for the transmission and distribution of electricity*'[4], then the report must include those **impact management outcomes** and **impact management actions** presented in the format of the pre-approved generic EMPr template.

In relation to the Terms of Reference outlined above, the following deliverables are applicable for the Basic Assessment of the proposed Grid Connection:

- A Site Sensitivity Verification Report for the terrestrial biodiversity, terrestrial plant and terrestrial animal species theme (excluding avian species) for the
- A Terrestrial Biodiversity Specialist Assessment Report
- A Plant Species Compliance Statement or Specialist Assessment Report, depending on the outcome of the site inspection.
- An Animal Species Specialist Assessment Report (in the event that potentially occurring terrestrial SCC are identified during the site inspection, that were not identified by the Screening Tool).

### 4.2 Part 1 EA Amendment Application

*Note: The original report of your area of expertise is attached as Annexure 4.*

- Undertake a site visit to the authorised Paarde Valley PV2 Site and compile a specialist comment/ statement (on letterhead) addressing the following:
  - The implications of the proposed amendments, if any, in terms of the potential impacts within your area of expertise;
  - An investigation to determine if the baseline environment has changed significantly since the original assessment, which was conducted approximately 10 years ago. This will be required for the proposed amendment to extend the validity period of the EA.
  - A statement as to whether or not the proposed amendments will result in an increased level or change in the nature of the impact, which was initially assessed and considered when application was made for the environmental authorisation. (Note: If any of the proposed amendments will result in an increased level or change in the nature of impacts,

[4] No. 435 in Government Gazette No 42323 of 22 March 2019

then a Part 2 process will need to be followed, and these Terms of Reference will be revised).

In relation to the Terms of Reference outlined above, the following deliverables are applicable for the Amendment Application for the Paarde Valley PV2 Environmental Authorisation:

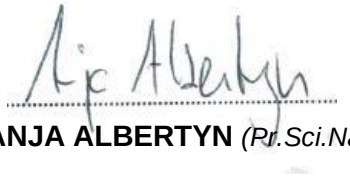
- A specialist statement/ comment (on letterhead)

**4.3. Timeframes**

In this regard, please confirm your capacity to submit the deliverables listed under 4.1) and 4.2) by 22 April 2022.

Should you have any queries, please contact Anja Albertyn (anja@hollandandassociates.net).

Yours sincerely,



**NICOLE HOLLAND** (*Pr.Sci.Nat.)* **ANJA ALBERTYN** *(Pr.Sci.Nat.)*

**For: Holland & Associates - Environmental Consultants**

**P O Box 31108, Tokai, 7966, South Africa**
**Mobile 0834645246 ~ Fax 086 7626126 ~ e-mail: info@hollandandassociates.net**
**Web: www.hollandandassociates.net**

Holland & Associates
Environmental Consultants
*Impact Assessments - Environmental Management Programs - Compliance Monitoring - Process Review*

Toni Belcher

30 March 2022

*Per Email:* toni@bluescience.co.za

**Attention:** Toni Belcher

Dear Toni,

**BASIC ASSESSMENT FOR THE PROPOSED PAARDE VALLEY PV2 GRID CONNECTION TO VETLAAGTE MAIN TRANSMISSION SUBSTATION (MTS), AND APPLICATION FOR AMENDMENT OF THE ENVIRONMENTAL AUTHORISATION FOR THE PAARDE VALLEY PV2 PHOTOVOLTAIC SOLAR ENERGY FACILITY (DFFE REF NO.: 12/12/20/2500/AM5), NEAR DE AAR IN THE NORTHERN CAPE PROVINCE**

**Aquatic Biodiversity Specialist Assessment for the Basic Assessment Process & Freshwater and Hydrology Specialist input into the Application for Amendment of the EA**

The purpose of this letter it to provide you with a Terms of Reference to compile a specialist impact assessment for the proposed grid connection from the authorised Paarde Valley PV2 facility to Vetlaagte Main Transmission Substation (MTS), which forms the subject of an Application for Environmental Authorisation (through a Basic Assessment process). This Terms of Reference also includes an assessment of the Paarde Valley PV2 site to inform an Application for Amendment of the Environmental Authorisation (EA) for the authorised Paarde Valley PV2 solar photovoltaic project.

The background to the environmental authorisation process for the authorised Paarde Valley PV2 project, the proposed amendments to the EA, the proposed grid connection, and the Terms of Reference for your specialist inputs, are provided in Sections 1 – 4 below.

## 1. Background

Environmental Authorisation (EA) for 150 MW Paarde Valley PV2 was granted by the Department of Environmental Affairs (DEA) (now known as the Department of Forestry, Fisheries and the Environment (DFFE)) on 7 September 2012, in terms of the NEMA EIA Regulations (2010). The authorised project includes the construction of a PV solar energy facility to generate approximately 75 – 150 MW on the aforementioned farm, as well as 132 kV / 220 kV overhead transmission lines and associated infrastructure (access roads, water supply infrastructure, stormwater infrastructure, internal access roads, buildings and fencing).

An amendment to the EA was issued on 13 March 2013, amending the name of the holder of the EA from Mulilo Renewable Energy (Pty) Ltd to Paarde Valley PV2 (Pty) Ltd.

On 15 June 2015 an amendment to the EA was issued (12/12/20/2500/AM2), which amended the property description in the EA, and extended the validity period of the EA until 7 September 2017.

On 20 July 2017 an amendment to the EA was issued (12/12/20/2500/AM3), amending the Applicants contact details as well as amending the validity period of the EA for an additional three (03) years, i.e. until 7 September 2020.

On 27 August 2020, an amendment to the EA was granted by DFFE (12/12/20/2500/AM4), to extend the validity period of the EA by an additional 2 years, i.e. the EA currently expires on 7 September 2022.

The currently authorised 132kV/ 220kV grid connection for Paarde Valley PV2 is routed from the Paarde Valley PV2 facility to the De Aar substation. However, Eskom has grid capacity constraints in the Northern Cape, and at certain lines and on certain substations. Eskom does not have capacity for the Paarde Valley PV2 to connect at the De Aar substation, accordingly the Applicant wishes to amend the authorised grid connection (realignment and termination point) and create a separate EA for the ESKOM's self-build components (substation & gridline), as outlined in Section 2 below.

## 2. Proposed Grid Connection from Paarde Valley PV2 to Vetlaagte Main Transmission Substation (MTS)

Paarde Valley PV2 (Pty) Ltd (hereafter referred to as the Applicant) proposes the construction of a 132 kV overhead powerline (OHPL) grid connection from the authorised on-site substation at Paarde Valley PV2 to Vetlaagte Main Transmission Station (MTS) (which is currently undergoing its own EA application process). The OHPL is proposed to be approximately 12.7 km in length, and is located in the Strategic Transmission Central Corridor[1]. A 200 m corridor (100 m of each side of the line) is to be assessed, as per the provided kml. The final OHPL servitude will be registered as 31 m but during the design development process a corridor of 200 meters is required to allow for minor tower position adjustments. The exact pylon locations will be determined by the outcome of the specialist's investigations, and engineering considerations. On average there will be 4 - 5 towers per km, so that the route will consist of an approximately 40 towers. The teams constructing the OHPL often use cranes and these will fit into an area with a maximum radius of approximately 30 m around the base of each tower, with the final footprint being relatively small. The line will have a capacity of > 150MVA and will make use of either steel monopole or steel lattice structure in line with Eskom required specifications.
A monopole self-supporting structure has a maximum base of 5 m in diameter above the ground. In some situations the structures have stays. These would fall into the area with a maximum radius of 30 meters, but the stays themselves are hardly exposed at ground level, with only small steel

[1]No. 113 of Government Gazette No. 41445 published 16 February 2018

rods protruding from the ground. Lattice towers have a bigger footprint as each has four legs that are a maximum of 15 m apart so that the final footprint would be approximately 15 m x 15 m. The height of either pylon structure will be up to 32 m.

The project will also include the switching station component of the authorised Paarde Valley PV2 on-site substation, with an approximate footprint area of 100 m x 100m, and a capacity of 132 kV, as this needs to be handed over to Eskom with the grid connection once constructed.

In summary, the infrastructure associated with the proposed Grid Connection works for the Paarde Valley PV2 project (and to be handed back to Eskom following construction), includes the following:

- A 132kV Overhead Power Line (OHPL) from the SwS connecting to the proposed Vetlaagte Main Transmission Substation (MTS)
- Onsite Switching Station (SwS), adjacent to the IPP collector substations (SS). Approximate footprint area of 100m x 100m

The technical details include:

- Height of pylons Up to 32m
- Type of poles/ pylons to be used. The alternatives under consideration and to be assessed include Steel lattice or Monopole structures in line with Eskom required specifications
- Transmission line capacity 132kV
- Area occupied by both permanent and construction laydown areas +-4 Hectares (for grid works only)
- Area occupied by buildings +-1.0 Hectares
- Length of service road(s) – Twin tracked service road following line route
- Width of service road(s) 6 m (8 m if including V-drains) to access the Eskom switching station from the nearest road.
- Height of fencing 2m
- Type of fencing Palisade + farmers fencing for temporary works
- Capacity of on-site substation 132kv

The OHPL and Switching station are required to connect the Paarde Valley PV2 Solar farm to the Eskom National Grid. The route selected follows boundary lines and / or existing OHPL routes so as to limit disruption to current farming activities as much as possible.

## 3. Proposed amendments to the Environmental Authorisation for the Paarde Valley PV2.

### a. Extension of the Validity Period

Paarde Valley PV2 (Pty) Ltd wishes to extend the validity of the Environmental Authorisation (dated 2012) by 18 months, until 7 March 2023, to allow bidding to a private off-taker.

**b. Amend the Project Description of the EA to remove half of the authorised substation**

The Applicant wishes to exclude the switching station component of the authorised on-site substation from the existing Environmental Authorisation. The excluded half (the switching station) would be included as part of the environmental authorisation for the grid connection, being applied for in the above-mentioned BAR process. Once environmental authorisation for the grid connection and switching station has been obtained, the Applicant intends to hand the grid connection EA over to Eskom.

**c. The inclusion of erroneously omitted Listed Activities into the EA**

When the original EA was granted in 2012, it is apparent that certain Listed Activities (in terms of the **2010** EIA Regulations) were erroneously omitted. This Amendment Application will include a motivation to include the erroneously omitted 2010 EIA listed activities (and similarly listed 2014 EIA Regulations, as amended, listed activities), into the EA.

Holland & Associates Environmental Consultants has been appointed to undertake the requisite application for environmental authorisation for the proposed grid connection, as well as the application for amendment of the Environmental Authorisation (EA) for the proposed Paarde Valley PV2 project, in accordance with the National Environmental Management Act (NEMA) (No. 107 of 1998) EIA Regulations (2014), as amended. The application for environmental authorisation and the application for amendment of the EA will require an assessment of the proposed grid connection corridor and potential impacts associated with the proposed amendments for the Paarde Valley PV2 project, respectively.

## 4. Terms of Reference

### 4.1 Basic Assessment Report for the proposed Grid Connection to Vetlaagte MTS

- Undertake a site inspection to the study area and produce a Site Sensitivity Verification Report (which can be included within your report) that confirms or disputes the sensitivity identified in the National Web-based Screening Tool (Annexure 1) for aquatic biodiversity[2], and indicate if a Compliance Statement or a Full Specialist Impact Assessment report will be required.
- Conduct the necessary fieldwork and compile a specialist impact assessment report or Compliance Statement for each, in line with the relevant gazetted protocol for aquatic biodiversity, and include a checklist of content requirements relevant to the specialist report, within your report;

[2] GN 320 of 20 March 2020

- Should a specialist impact assessment report be required, the report must comply with the requirements detailed in Section 2.7 of the *Protocol for the Specialist Assessment and Minimum Report Content Requirements for Environmental Impacts on Aquatic Biodiversity* (attached as Annexure 3). This includes, *inter alia*:
  - Indicate and confirm the presence of surface water present on and or adjacent to the site (including but not limited to perennial rivers, non-perennial rivers, permanent wetland(s), seasonal wetland(s) and artificial wetland(s)), and where relevant provide a description of each (including confirmation as to whether such surface water would be classified as a "watercourse", as defined in the EIA Regulations (2014) and NWA). Watercourses must be illustrated on an aerial photograph or suitable map;
  - An overview of the ecological status of the watercourses that would potentially be affected by the proposed activities;
  - Comments on any rare or endangered aquatic species or habitats encountered or likely to be present in the affected areas should also be identified;
  - The conservation status and value of the area as identified by the relevant biodiversity plans, bioregional planning documents, Environmental Management Frameworks, etc;
  - Confirm whether the proposed development and its alternatives will have an impact on CBAs or ESAs. If the proposed project will impact on CBA's or ESA's, please explain, and include a description of how the proposed development will influence the quantitative values (hectares/percentage) of the categories on the CBA/ESA map.
  - The components and activities of the project which have the potential to affect aquatic resources within the local and regional study area during the construction and operational phases;
  - A description of the direct, indirect, residual (if any), and cumulative impacts (both before and after mitigation) and an assessment of the significance of the impacts (for the proposed project and "No Go" alternative) (on a nominal scale of Neutral, Negligible, Very Low, Low, Medium, High) by evaluating: (**a) nature of the impacts** (positive/ negative), **(b) extent of the impacts** (zero/ site specific/local/ regional/ national), **(c) magnitude of the impacts** (Zero/ Very Low/ Low/ Medium/High), **(d) duration of the impacts** (none/ short/ medium/ long term) and **(e) probability of occurrence of the impacts** (none/ unlikely/ possible/ probable/ definite). In addition, **(f) the level of confidence in findings** relating to potential impacts**, (g) reversibility of potential impacts** (i.e. the degree to which the impact can be reversed (Zero/ Low/Medium/ High)); and **(h) the degree to which the impact may cause irreplaceable loss of resources** (Zero/ Low/ Medium/ High).
  - An indication of the **degree to which the impacts can be mitigated** (Low/ Medium/ High), a description of the measures to mitigate any impacts, and an indication of whether or not the measures (if implemented) would change the significance of the impact, for the construction, operational and decommissioning (if relevant) phases of the project;
  - An indication of the **degree to which the impact can be avoided** (Low/ Medium/ High) and the **degree to which the impact can be managed** (Low/ Medium/ High).
  - If required, compile a Maintenance Management Plan (MMP), as contemplated in terms of the NEMA EIA Regulations (2014), as amended, for the relevant project components.
  - In terms of the aquatic environment, identify all relevant legislation, permits, standards or licensing requirements that would apply to the proposed project.

- The presence of or proximity of the proposed sites to protected area(s) identified in terms of NEMPAA and proximity to a Biosphere Reserve (where relevant).
- The assessment must take into account and address public comments received during the Public Participation Process (PPP) relating to your area of expertise.
- The report must include an impact summary table outlining the findings of the assessment in terms of the above-mentioned assessment criteria using the Impact Assessment Methodology and Table Template provided in Annexure 2.
- If any specific environmental sensitivities relevant to your field of expertise are present on the site which require specific impact management outcomes, and impact management actions, not included in the '*Generic EMPr for the development and expansion of substation infrastructure for the transmission and distribution of electricity*'[3], then the report must include those **impact management outcomes** and **impact management actions** presented in the format of the pre-approved generic EMPr template.

- Should a specialist compliance statement be required, the statement must comply with the requirements detailed in Section 3 of the *Protocol for the Specialist Assessment and Minimum Report Content Requirements for Environmental Impacts on Aquatic Biodiversity* (attached as Annexure 3)

In relation to the Terms of Reference outlined above, the following deliverables are applicable for the Basic Assessment of the proposed Grid Connection:

- A Site Sensitivity Verification Report for the aquatic biodiversity theme, and
- An Aquatic Specialist Assessment Report or Specialist Assessment Report, depending on the outcome of the site inspection.

### 4.2 Part 1 EA Amendment Application

*Note: The original report of your areas of expertise are attached as Annexure 4 and 5.*

- Undertake a site visit to the authorised Paarde Valley PV2 Site and compile a specialist comment/ statement (on letterhead) addressing the following:
  - The implications of the proposed amendments, if any, in terms of the potential impacts within your areas of expertise (**freshwater & hydrology**);
  - An investigation to determine if the baseline environment has changed significantly since the original assessments, which were conducted approximately 10 years ago. This will be required for the proposed amendment to extend the validity period of the EA.
  - A statement as to whether or not the proposed amendments will result in an increased level or change in the nature of the impact, which was initially assessed and considered when application was made for the environmental authorisation. (Note: If any of the proposed amendments will result in an increased level or change in the nature of impacts, then a Part 2 process will need to be followed, and these Terms of Reference will be revised).

[3] No. 435 in Government Gazette No 42323 of 22 March 2019

In relation to the Terms of Reference outlined above, the following deliverables are applicable for the Amendment Application for the Paarde Valley PV2 Environmental Authorisation:

- A specialist **freshwater** statement/ comment (on letterhead), and
- A specialist **hydrology** statement/ comment (on letterhead).

**4.3. Timeframes**

In this regard, please confirm your capacity to submit the deliverables listed under 4.1) and 4.2) by 22 April 2022.

Should you have any queries, please contact Anja Albertyn (anja@hollandandassociates.net).

Yours sincerely,

**NICOLE HOLLAND** (*Pr.Sci.Nat.)* **ANJA ALBERTYN** *(Pr.Sci.Nat.)*

**For: Holland & Associates - Environmental Consultants**

**P O Box 31108, Tokai, 7966, South Africa**
**Mobile 0834645246 ~ Fax 086 7626126 ~ e-mail: info@hollandandassociates.net**
**Web: www.hollandandassociates.net**

Holland & Associates
Environmental Consultants
*Impact Assessments - Environmental Management Programs - Compliance Monitoring - Process Review*

Chris van Rooyen Consulting (Pty) Ltd

30 March 2022

*Per Email:* vanrooyen.chris@gmail.com

**Attention:** Chris van Rooyen

Dear Chris,

**BASIC ASSESSMENT FOR THE PROPOSED PAARDE VALLEY PV2 GRID CONNECTION TO VETLAAGTE MAIN TRANSMISSION SUBSTATION (MTS), AND APPLICATION FOR AMENDMENT OF THE ENVIRONMENTAL AUTHORISATION FOR THE PAARDE VALLEY PV2 PHOTOVOLTAIC SOLAR ENERGY FACILITY (DFFE REF NO.: 12/12/20/2500/AM5), NEAR DE AAR IN THE NORTHERN CAPE PROVINCE**

**Avifaunal Specialist Assessment for the Basic Assessment Process & Avifaunal Specialist input into the Application for Amendment of the EA**

The purpose of this letter it to provide you with a Terms of Reference to compile specialist impact assessment for the proposed grid connection from the authorised Paarde Valley PV2 facility to Vetlaagte Main Transmission Substation (MTS), which forms the subject of an Application for Environmental Authorisation (through a Basic Assessment process). This Terms of Reference also includes an assessment of the Paarde Valley PV2 site to inform an Application for Amendment of the Environmental Authorisation (EA) for the authorised Paarde Valley PV2 solar photovoltaic project.

The background to the environmental authorisation process for the authorised Paarde Valley PV2 project, the proposed amendments to the EA, the proposed grid connection, and the Terms of Reference for your specialist inputs, are provided in Sections 1 – 4 below.

## 1. Background

Environmental Authorisation (EA) for 150 MW Paarde Valley PV2 was granted by the Department of Environmental Affairs (DEA) (now known as the Department of Forestry, Fisheries and the Environment (DFFE)) on 7 September 2012, in terms of the NEMA EIA Regulations (2010). The authorised project includes the construction of a PV solar energy facility to generate approximately 75 – 150 MW on the aforementioned farm, as well as 132 kV / 220 kV overhead transmission lines and associated infrastructure (access roads, water supply infrastructure, stormwater infrastructure, internal access roads, buildings and fencing).

An amendment to the EA was issued on 13 March 2013, amending the name of the holder of the EA from Mulilo Renewable Energy (Pty) Ltd to Paarde Valley PV2 (Pty) Ltd.

On 15 June 2015 an amendment to the EA was issued (12/12/20/2500/AM2), which amended the property description in the EA, and extended the validity period of the EA until 7 September 2017.

On 20 July 2017 an amendment to the EA was issued (12/12/20/2500/AM3), amending the Applicants contact details as well as amending the validity period of the EA for an additional three (03) years, i.e. until 7 September 2020.

On 27 August 2020, an amendment to the EA was granted by DFFE (12/12/20/2500/AM4), to extend the validity period of the EA by an additional 2 years, i.e. the EA currently expires on 7 September 2022.

The currently authorised 132kV/ 220kV grid connection for Paarde Valley PV2 is routed from the Paarde Valley PV2 facility to the De Aar substation. However, Eskom has grid capacity constraints in the Northern Cape, and at certain lines and on certain substations. Eskom does not have capacity for the Paarde Valley PV2 to connect at the De Aar substation, accordingly the Applicant wishes to amend the authorised grid connection (realignment and termination point) and create a separate EA for the ESKOM's self-build components (substation & gridline), as outlined in Section 2 below.

## 2. Proposed Grid Connection from Paarde Valley PV2 to Vetlaagte Main Transmission Substation (MTS)

Paarde Valley PV2 (Pty) Ltd (hereafter referred to as the Applicant) proposes the construction of a 132 kV overhead powerline (OHPL) grid connection from the authorised on-site substation at Paarde Valley PV2 to Vetlaagte Main Transmission Station (MTS) (which is currently undergoing its own EA application process). The OHPL is proposed to be approximately 12.7 km in length, and is located in the Strategic Transmission Central Corridor[1]. A 200 m corridor (100 m of each side of the line) is to be assessed, as per the provided kml. The final OHPL servitude will be registered as 31 m but during the design development process a corridor of 200 meters is required to allow for minor tower position adjustments. The exact pylon locations will be determined by the outcome of the specialist's investigations, and engineering considerations. On average there will be 4 - 5 towers per km, so that the route will consist of an approximately 40 towers. The teams constructing the OHPL often use cranes and these will fit into an area with a maximum radius of approximately 30 m around the base of each tower, with the final footprint being relatively small. The line will have a capacity of > 150MVA and will make use of either steel monopole or steel lattice structure in line with Eskom required specifications.

[1]No. 113 of Government Gazette No. 41445 published 16 February 2018

A monopole self-supporting structure has a maximum base of 5 m in diameter above the ground. In some situations the structures have stays. These would fall into the area with a maximum radius of 30 meters, but the stays themselves are hardly exposed at ground level, with only small steel rods protruding from the ground. Lattice towers have a bigger footprint as each has four legs that are a maximum of 15 m apart so that the final footprint would be approximately 15 m x 15 m. The height of either pylon structure will be up to 32 m.

The project will also include the switching station component of the authorised Paarde Valley PV2 on-site substation, with an approximate footprint area of 100 m x 100m, and a capacity of 132 kV, as this needs to be handed over to Eskom with the grid connection once constructed.

In summary, the infrastructure associated with the proposed Grid Connection works for the Paarde Valley PV2 project (and to be handed back to Eskom following construction), includes the following:

- A 132kV Overhead Power Line (OHPL) from the SwS connecting to the proposed Vetlaagte Main Transmission Substation (MTS)
- Onsite Switching Station (SwS), adjacent to the IPP collector substations (SS). Approximate footprint area of 100m x 100m

The technical details include:

- Height of pylons Up to 32m
- Type of poles/ pylons to be used. The alternatives under consideration and to be assessed include Steel lattice or Monopole structures in line with Eskom required specifications
- Transmission line capacity 132kV
- Area occupied by both permanent and construction laydown areas +-4 Hectares (for grid works only)
- Area occupied by buildings +-1.0 Hectares
- Length of service road(s) – Twin tracked service road following line route
- Width of service road(s) 6 m (8 m if including V-drains) to access the Eskom switching station from the nearest road.
- Height of fencing 2m
- Type of fencing Palisade + farmers fencing for temporary works
- Capacity of on-site substation 132kv

The OHPL and Switching station are required to connect the Paarde Valley PV2 Solar farm to the Eskom National Grid. The route selected follows boundary lines and / or existing OHPL routes so as to limit disruption to current farming activities as much as possible.

## 3. Proposed amendments to the Environmental Authorisation for the Paarde Valley PV2.

### a. Extension of the Validity Period

Paarde Valley PV2 (Pty) Ltd wishes to extend the validity of the Environmental Authorisation (dated 2012) by 18 months, until 7 March 2023, to allow bidding to a private off-taker.

**b. Amend the Project Description of the EA to remove half of the authorised substation**

The Applicant wishes to exclude the switching station component of the authorised on-site substation from the existing Environmental Authorisation. The excluded half (the switching station) would be included as part of the environmental authorisation for the grid connection, being applied for in the above-mentioned BAR process. Once environmental authorisation for the grid connection and switching station has been obtained, the Applicant intends to hand the grid connection EA over to Eskom.

**c. The inclusion of erroneously omitted Listed Activities into the EA**

When the original EA was granted in 2012, it is apparent that certain Listed Activities (in terms of the **2010** EIA Regulations) were erroneously omitted. This Amendment Application will include a motivation to include the erroneously omitted 2010 EIA listed activities (and similarly listed 2014 EIA Regulations, as amended, listed activities), into the EA.

Holland & Associates Environmental Consultants has been appointed to undertake the requisite application for environmental authorisation for the proposed grid connection, as well as the application for amendment of the Environmental Authorisation (EA) for the proposed Paarde Valley PV2 project, in accordance with the National Environmental Management Act (NEMA) (No. 107 of 1998) EIA Regulations (2014), as amended. The application for environmental authorisation and the application for amendment of the EA will require an assessment of the proposed grid connection corridor and potential impacts associated with the proposed amendments for the Paarde Valley PV2 project, respectively.

## 4. Terms of Reference

### 4.1 Basic Assessment Report for the proposed Grid Connection to Vetlaagte MTS

- Undertake a site inspection to the study area and produce a Site Sensitivity Verification Report (which can be included within your report) that confirms or disputes the sensitivity identified in the National Web-based Screening Tool (Annexure 1) for the terrestrial animal species theme[2] (Aves taxon), and indicate if a Compliance Statement or a Full Specialist Impact Assessment report will be required.
- Conduct the necessary fieldwork and compile a specialist impact assessment report or Compliance Statement, in line with the relevant gazetted protocol for terrestrial animal

[2] GN 1150 of 30 October 2020

species, and include a checklist of content requirements relevant to the specialist report, within your report;

- Should a specialist impact assessment report be required, the report must comply with the requirements detailed in Section 3 of the *Protocol for the Specialist Assessment and Minimum Report Content Requirements for Environmental Impacts on Terrestrial Animal Species* (attached as Annexure 3) and the current *Species Environmental Assessment Guidelines*[3].

  This includes, *inter alia*:

  - A description of the direct, indirect, residual (if any), and cumulative impacts (both before and after mitigation) and an assessment of the significance of the impacts (for the proposed project and "No Go" alternative) (on a nominal scale of Neutral, Negligible, Very Low, Low, Medium, High) by evaluating: (**a) nature of the impacts** (positive/ negative), **(b) extent of the impacts** (zero/ site specific/local/ regional/ national), **(c) magnitude of the impacts** (Zero/ Very Low/ Low/ Medium/High), **(d) duration of the impacts** (none/ short/ medium/ long term) and **(e) probability of occurrence of the impacts** (none/ unlikely/ possible/ probable/ definite). In addition, **(f) the level of confidence in findings** relating to potential impacts**, (g) reversibility of potential impacts** (i.e. the degree to which the impact can be reversed (Zero/ Low/Medium/ High)); and **(h) the degree to which the impact may cause irreplaceable loss of resources** (Zero/ Low/ Medium/ High).
  - An indication of the **degree to which the impacts can be mitigated** (Low/ Medium/ High), a description of the measures to mitigate any impacts, and an indication of whether or not the measures (if implemented) would change the significance of the impact, for the construction, operational and decommissioning (if relevant) phases of the project;
  - An indication of the **degree to which the impact can be avoided** (Low/ Medium/ High) and the **degree to which the impact can be managed** (Low/ Medium/ High).
  - The assessment must take into account and address public comments received during the Public Participation Process (PPP) relating to your area of expertise.
  - The report must include an impact summary table outlining the findings of the assessment in terms of the above-mentioned assessment criteria using the Impact Assessment Methodology and Table Template provided in Annexure 2.
  - If any specific environmental sensitivities relevant to your field of expertise are present on the site which require specific impact management outcomes, and impact management actions, not included in the '*Generic EMPr for the development and expansion of substation infrastructure for the transmission and distribution of electricity*'[4], then the report must include those **impact management outcomes** and **impact management actions** presented in the format of the pre-approved generic EMPr template.

- Should a specialist compliance statement be required, the statement must comply with the requirements detailed in Section 5 of the *Protocol for the Specialist Assessment and*

[3] South African National Biodiversity Institute (SANBI). 2020. Species Environmental Assessment Guideline. Guidelines for the implementation of the Terrestrial Fauna and Terrestrial Flora Species Protocols for environmental impact assessments in South Africa. South African National Biodiversity Institute, Pretoria. **Version 2.1 2021.**

[4] No. 435 in Government Gazette No 42323 of 22 March 2019

*Minimum Report Content Requirements for Environmental Impacts on Terrestrial Animal Species* (attached as Annexure 3).

In relation to the Terms of Reference outlined above, the following deliverables are applicable for the Basic Assessment of the proposed Grid Connection:

- A Site Sensitivity Verification Report for the avifaunal theme, and
- An avifaunal Compliance Statement or Specialist Assessment Report, depending on the outcome of the site inspection.

**4.2 Part 1 EA Amendment Application**

*Note: The original report of your area of expertise is attached as Annexure 4.*

- Undertake a site visit to the authorised Paarde Valley PV2 Site and compile a specialist comment/ statement (on letterhead) addressing the following:
  - The implications of the proposed amendments, if any, in terms of the potential impacts within your area of expertise;
  - An investigation to determine if the baseline environment has changed significantly since the original assessment, which was conducted approximately 10 years ago. This will be required for the proposed amendment to extend the validity period of the EA.
  - A statement as to whether or not the proposed amendments will result in an increased level or change in the nature of the impact, which was initially assessed and considered when application was made for the environmental authorisation. (Note: If any of the proposed amendments will result in an increased level or change in the nature of impacts, then a Part 2 process will need to be followed, and these Terms of Reference will be revised).

In relation to the Terms of Reference outlined above, the following deliverables are applicable for the Amendment Application for the Paarde Valley PV2 Environmental Authorisation:

- A specialist statement/ comment (on letterhead)

**4.3. Timeframes**

In this regard, please confirm your capacity to submit the deliverables listed under 4.1) and 4.2) by 22 April 2022.

Should you have any queries, please contact Anja Albertyn (anja@hollandandassociates.net).

Yours sincerely,

**NICOLE HOLLAND** (*Pr.Sci.Nat.)* **ANJA ALBERTYN** *(Pr.Sci.Nat.)*

**For: Holland & Associates - Environmental Consultants**

**P O Box 31108, Tokai, 7966, South Africa**
**Mobile 0834645246 ~ Fax 086 7626126 ~ e-mail: info@hollandandassociates.net**
**Web: www.hollandandassociates.net**

ITC Services (Pty) Ltd.

28 March 2022

*Per Email:* callie@itc-services.com

**Attention:** Callie Fouché

Dear Callie

**BASIC ASSESSMENT FOR THE PROPOSED PAARDE VALLEY PV2 GRID CONNECTION TO VETLAAGTE MAIN TRANSMISSION SUBSTATION (MTS), NEAR DE AAR IN THE NORTHERN CAPE PROVINCE**

**Radio Frequency Interference (RFI) Specialist Impact Assessment for the Basic Assessment Process**

The purpose of this letter it to provide you with a Terms of Reference to compile a specialist impact assessment for the proposed grid connection from the authorised Paarde Valley PV2 facility to Vetlaagte Main Transmission Substation (MTS), which forms the subject of an Application for Environmental Authorisation (through a Basic Assessment process).

The background to the environmental authorisation process for the authorised Paarde Valley PV2 project, the proposed grid connection, and the Terms of Reference for your specialist inputs, are provided in Sections 1 – 4 below.

## 1. Background

Environmental Authorisation (EA) for 150 MW Paarde Valley PV2 was granted by the Department of Environmental Affairs (DEA) (now known as the Department of Forestry, Fisheries and the Environment (DFFE)) on 7 September 2012, in terms of the NEMA EIA Regulations (2010). The authorised project includes the construction of a PV solar energy facility to generate approximately 75 – 150 MW on the aforementioned farm, as well as 132 kV / 220 kV overhead transmission lines and associated infrastructure (access roads, water supply infrastructure, stormwater infrastructure, internal access roads, buildings and fencing).

An amendment to the EA was issued on 13 March 2013, amending the name of the holder of the EA from Mulilo Renewable Energy (Pty) Ltd to Paarde Valley PV2 (Pty) Ltd.

On 15 June 2015 an amendment to the EA was issued (12/12/20/2500/AM2), which amended the property description in the EA, and extended the validity period of the EA until 7 September 2017.

On 20 July 2017 an amendment to the EA was issued (12/12/20/2500/AM3), amending the Applicants contact details as well as amending the validity period of the EA for an additional three (03) years, i.e. until 7 September 2020.

On 27 August 2020, an amendment to the EA was granted by DFFE (12/12/20/2500/AM4), to extend the validity period of the EA by an additional 2 years, i.e. the EA currently expires on 7 September 2022.

The currently authorised 132kV/ 220kV grid connection for Paarde Valley PV2 is routed from the Paarde Valley PV2 facility to the De Aar substation. However, Eskom has grid capacity constraints in the Northern Cape, and at certain lines and on certain substations. Eskom does not have capacity for the Paarde Valley PV2 to connect at the De Aar substation, accordingly the Applicant wishes to amend the authorised grid connection (realignment and termination point) and create a separate EA for the ESKOM's self-build components (substation & gridline), as outlined in Section 2 below.

## 2. Proposed Grid Connection from Paarde Valley PV2 to Vetlaagte Main Transmission Substation (MTS)

Paarde Valley PV2 (Pty) Ltd (hereafter referred to as the Applicant) proposes the construction of a 132 kV overhead powerline (OHPL) grid connection from the authorised on-site substation at Paarde Valley PV2 to Vetlaagte Main Transmission Station (MTS) (which is currently undergoing its own EA application process). The OHPL is proposed to be approximately 12.7 km in length, and is located in the Strategic Transmission Central Corridor[1]. A 200 m corridor (100 m of each side of the line) is to be assessed, as per the provided kml. The final OHPL servitude will be registered as 31 m but during the design development process a corridor of 200 meters is required to allow for minor tower position adjustments. The exact pylon locations will be determined by the outcome of the specialist's investigations, and engineering considerations. On average there will be 4 - 5 towers per km, so that the route will consist of approximately 40 towers. The teams constructing the OHPL often use cranes and these will fit into an area with a maximum radius of approximately 30 m around the base of each tower, with the final footprint being relatively small. The line will have a capacity of > 150MVA and will make use of either steel monopole or steel lattice structure in line with Eskom required specifications.

A monopole self-supporting structure has a maximum base of 5 m in diameter above the ground. In some situations the structures have stays. These would fall into the area with a maximum radius of 30 meters, but the stays themselves are hardly exposed at ground level, with only small steel rods protruding from the ground. Lattice towers have a bigger footprint as each has four legs that

[1]No. 113 of Government Gazette No. 41445 published 16 February 2018

are a maximum of 15 m apart so that the final footprint would be approximately 15 m x 15 m. The height of either pylon structure will be up to 32 m.

The project will also include the switching station component of the authorised Paarde Valley PV2 on-site substation, with an approximate footprint area of 100 m x 100m, and a capacity of 132 kV, as this needs to be handed over to Eskom with the grid connection once constructed.

In summary, the infrastructure associated with the proposed Grid Connection works for the Paarde Valley PV2 project (and to be handed back to Eskom following construction), includes the following:

- A 132kV Overhead Power Line (OHPL) from the SwS connecting to the proposed Vetlaagte Main Transmission Substation (MTS)
- On-site Switching Station (SwS), adjacent to the IPP collector substations (SS). Approximate footprint area of 100 m x 100 m

The technical details include:

- Height of pylons Up to 32m
- Type of poles/ pylons to be used. The alternatives under consideration and to be assessed include Steel lattice or Monopole structures in line with Eskom required specifications
- Transmission line capacity 132kV
- Area occupied by both permanent and construction laydown areas +-4 Hectares (for grid works only)
- Area occupied by buildings +-1.0 Hectares
- Length of service road(s) – Twin tracked service road following line route
- Width of service road(s) 6 m (8 m if including V-drains) to access the Eskom switching station from the nearest road.
- Height of fencing 2m
- Type of fencing Palisade + farmers fencing for temporary works
- Capacity of on-site substation 132kv

The OHPL and Switching station are required to connect the Paarde Valley PV2 Solar farm to the Eskom National Grid. The route selected follows boundary lines and / or existing OHPL routes so as to limit disruption to current farming activities as much as possible.

Holland & Associates Environmental Consultants has been appointed to undertake the requisite application for environmental authorisation for the proposed grid connection, in accordance with the National Environmental Management Act (NEMA) (No. 107 of 1998) EIA Regulations (2014), as amended. The application for environmental authorisation will require an assessment of the proposed grid connection corridor.

## 3. Terms of Reference

### 3.1 Basic Assessment Report for the proposed Grid Connection to Vetlaagte MTS

- Undertake a site inspection to the study area (if required) and produce a Site Sensitivity Verification Report that confirms or disputes the land use and sensitivity identified in the National Web-based Screening Tool (Annexure 1) for RFI, in line with the Gazetted General Requirement Assessment protocol[2].
- Conduct the necessary fieldwork and compile a specialist impact assessment report (if required), in line with Appendix 6 of the EIA Regulations, 2014, as amended, which includes a checklist of the content requirements relevant to the specialist report, within your report;
- A specialist impact assessment report must address the following:
  - A description of the direct, indirect, residual (if any), and cumulative impacts (both before and after mitigation) and an assessment of the significance of the impacts (for the proposed project and "No Go" alternative) (on a nominal scale of Neutral, Negligible, Very Low, Low, Medium, High) by evaluating: (**a) nature of the impacts** (positive/ negative), **(b) extent of the impacts** (zero/ site specific/local/ regional/ national), **(c) magnitude of the impacts** (Zero/ Very Low/ Low/ Medium/High), **(d) duration of the impacts** (none/ short/ medium/ long term) and **(e) probability of occurrence of the impacts** (none/ unlikely/ possible/ probable/ definite). In addition, **(f) the level of confidence in findings** relating to potential impacts**, (g) reversibility of potential impacts** (i.e. the degree to which the impact can be reversed (Zero/ Low/Medium/ High)); and **(h) the degree to which the impact may cause irreplaceable loss of resources** (Zero/ Low/ Medium/ High).
  - An indication of the **degree to which the impacts can be mitigated** (Low/ Medium/ High), a description of the measures to mitigate any impacts, and an indication of whether or not the measures (if implemented) would change the significance of the impact, for the construction, operational and decommissioning (if relevant) phases of the project;
  - An indication of the **degree to which the impact can be avoided** (Low/ Medium/ High) and the **degree to which the impact can be managed** (Low/ Medium/ High).
  - The assessment must take into account and address public comments received during the Public Participation Process (PPP) relating to your area of expertise.
  - The report must include an impact summary table outlining the findings of the assessment in terms of the above-mentioned assessment criteria using the Impact Assessment Methodology and Table Template provided in Annexure 2.
  - If any specific environmental sensitivities relevant to your field of expertise are present on the site which require specific impact management outcomes, and impact management actions, not included in the '*Generic EMPr for the development and expansion of substation infrastructure for the transmission and distribution of electricity*'[3], then the report must include those **impact management outcomes** and **impact management actions** presented in the format of the pre-approved generic EMPr template.

In relation to the Terms of Reference outlined above, the following deliverables are applicable for the Basic Assessment of the proposed Grid Connection:

- A Site Sensitivity Verification Report for the RFI theme.

[2] GN 320 of 20 March 2020 in Government Gazette 43110

[3] No. 435 in Government Gazette No 42323 of 22 March 2019

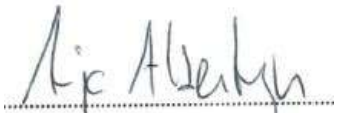
- A RFI Specialist Assessment Report (if required)

**3.3. Timeframes**

In this regard, please confirm your capacity to submit the deliverables listed under 3.1) by 22 April 2022.

Should you have any queries, please contact Anja Albertyn (anja@hollandandassociates.net).

Yours sincerely,



**NICOLE HOLLAND** (*Pr.Sci.Nat.)* **ANJA ALBERTYN** *(Pr.Sci.Nat.)*

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Holland & Associates
Environmental Consultants
*Impact Assessments - Environmental Management Programs - Compliance Monitoring - Process Review*

**10 June 2022**

Dear Specialist

**BASIC ASSESSMENT FOR THE PROPOSED PAARDE VALLEY PV2 GRID CONNECTION TO VETLAAGTE MAIN TRANSMISSION SUBSTATION (MTS), AND APPLICATION FOR AMENDMENT OF THE ENVIRONMENTAL AUTHORISATION FOR THE PAARDE VALLEY PV2 PHOTOVOLTAIC SOLAR ENERGY FACILITY (DFFE REF NO.: 12/12/20/2500/AM5), NEAR DE AAR IN THE NORTHERN CAPE PROVINCE**

**Amendment to the Project Description (Section 2 of the Specialist Terms of Reference) of the Proposed Grid Connection from Paarde Valley PV2 to Vetlaagte Main Transmission Substation (MTS)**

*****New text has been underlined & removed text has been ~~crossed out~~ for ease of use.

2. ***Proposed Grid Connection from Paarde Valley PV2 to Vetlaagte Main Transmission Substation (MTS)***

*Paarde Valley PV2 (Pty) Ltd (hereafter referred to as the Applicant) proposes the construction of a 132 kV, double circuit, overhead powerline (OHPL) grid connection from the authorised on-site substation and switching station at Paarde Valley PV2 to Vetlaagte Main Transmission Station (MTS) (which is currently undergoing its own EA application process). The OHPL is proposed to be approximately 12.7 km in length, and is located in the Strategic Transmission Central Corridor[1]. A 200 m corridor (100 m of each side of the line) is to be assessed, as per the provided kml. The final OHPL servitude will be registered as 31 m but during the design development process a corridor of 200 meters is required to allow for minor tower position adjustments. The exact pylon locations will be determined by the outcome of the specialist's investigations, and engineering considerations. On average there will be 4 - 5 towers per km, so that the route will consist of an approximately 40 towers. The teams constructing the OHPL often use cranes and these will fit into an area with a maximum radius of approximately 30 m around the base of each tower, with the final footprint being relatively small. The line will have a capacity of ~~> 150 MVA~~ 132kV and will*

[1]No. 113 of Government Gazette No. 41445 published 16 February 2018

*make use of either steel monopole or steel lattice structure in line with Eskom required specifications.*

*A monopole self-supporting structure has a maximum base of 5 m in diameter above the ground. In some situations the structures have stays. These would fall into the area with a maximum radius of 30 meters, but the stays themselves are hardly exposed at ground level, with only small steel rods protruding from the ground. Lattice towers have a bigger footprint as each has four legs that are a maximum of 15 m apart so that the final footprint would be approximately 15 m x 15 m. The height of either pylon structure will be up to 32 m.*

*The project will also include the switching station component of the authorised Paarde Valley PV2 on-site substation, with an approximate footprint area of 100 m x 100m, and a feeder bay at the Vetlaagte MTS with a capacity of 132 kV, as this needs to be handed over to Eskom with the grid connection self-build works once constructed.*

*In summary, the infrastructure associated with the proposed Grid Connection works for the Paarde Valley PV2 project (and to be handed back to Eskom following construction), includes the following:*

- *A 132kV, double circuit Overhead Power Line (OHPL) from the Switching Station connecting to the proposed Vetlaagte Main Transmission Substation (MTS)*
- *132kV Feeder bay at the Vetlaagte MTS*
- *On-site Switching Station (SwS), adjacent to the authorised IPP 132 kV substation. (approximately 100 m x 100 m combined) ~~Approximate footprint area of 100m x 100m~~*

*The technical details include:*

*Overhead Powerline:*

- *Height of pylons Up to 32m*
- *Type of poles/ pylons to be used. Double Circuit configuration. The alternatives under consideration and to be assessed include Steel lattice or Monopole structures in line with Eskom required specifications*[2]
- *Transmission line capacity 132kV*
- *OHPL Service Road (to lie within the OHPL servitude)*
    - *Length of OHPL service road(s) – Twin tracked service road following line route*
    - *Width of OHPL service road(s) 6 m ~~(8 m if including V-drains)~~ ~~to access the Eskom switching station from the nearest road~~.*

[2] **NOTE TO SPECIALISTS: If the two alternatives under consideration would result in different impact significance ratings (relating to the impacts that you are assessing), then please include separate impact tables for the two alternatives in your report, and a recommendation/ conclusion on the acceptability/ preference, if any.**

*Switching Station:*

- *Footprint of approximately 50 m – 100 m x 100 m adjacent to IPP Substation*
- *~~Area occupied by both permanent and construction laydown areas +-4 Hectares (for grid works only)~~*
- *Area occupied by buildings (Control building, relay room, generator, storage warehouse, water tanks, ablutions) +-1.0 Hectares*
- *Switching Station Access Road (separate access servitude from the nearest public road to the Switching Station yard)*
  - *Compacted gravel*
  - *Length of access road: +- 2.34 km (see attached kmz. file for the route)*
  - *Width of access road: 8 m .*
- *Security fencing height: 2.4 m*
- *Type of fencing: Eskom palisade fencing + ~~farmers~~ chainlink fencing for temporary works*
- *Capacity of on-site switching ~~sub~~station 132kv*

*The OHPL and Switching station are required to connect the Paarde Valley PV2 Solar farm to the Eskom National Grid. The route selected follows boundary lines and / or existing OHPL routes so as to limit disruption to current farming activities as much as possible.*

Should you have any queries, please contact Anja Albertyn (anja@hollandandassociates.net).

Yours sincerely,

**NICOLE HOLLAND** (*Pr.Sci.Nat.)* **ANJA ALBERTYN** *(Pr.Sci.Nat.)*

**For: Holland & Associates - Environmental Consultants**

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## ANNEXURE 2: Assessment Methodology and Impact Assessment Format Table

For each impact, the **nature** (positive/negative), **extent** (spatial scale), **magnitude/intensity** (intensity scale), **duration** (time scale), **consequence** (calculated numerically) and **probability** of occurrence is ranked and described. These criteria would be used to ascertain the **significance** of the impact, firstly in the case of no mitigation and then with the most effective mitigation measure(s) in place.

The tables below show the rankings of these variables, and defines each of the rating categories.

**Table 2: Assessment criteria for the evaluation of impacts**

| CRITERIA | RANK | DESCRIPTION |
|---|---|---|
| **Nature** | **Positive (+)** | The environment will be positively affected. |
| | **Negative (-)** | The environment will be negatively affected. |
| **Extent or spatial influence of impact** | **National (4)** | Beyond provincial boundaries, but within national boundaries. |
| | **Regional (3)** | Beyond a 10 km radius of the proposed activities, but within provincial boundaries. |
| | **Local (2)** | Within a 10 km radius of the proposed activities. |
| | **Site specific (1)** | On site or within 100 m of the proposed activities. |
| | **Zero (0)** | Zero extent. |
| **Magnitude/ intensity of impact (at the indicated spatial scale)** | **High (3)** | Natural and/ or social functions and/ or processes are *severely* altered. |
| | **Medium (2)** | Natural and/ or social functions and/ or processes are *notably* altered. |
| | **Low (1)** | Natural and/ or social functions and/ or processes are *slightly* altered. |
| | **Zero (0)** | Natural and/ or social functions and/ or processes remain *unaltered.* |

| | | |
|---|---|---|
| **Duration of impact** | **Long Term (3)** | More than 10 years, but impact ceases after the operational phase. |
| | **Medium Term (2)** | Between 3 – 10 years. |
| | **Short Term (1)** | Construction period (up to 3 years). |
| | **None (0)** | Zero duration. |
| **Consequence**<br>**(Nature x (Extent + Magnitude/ Intensity + Duration))** | **Extremely beneficial/ detrimental**<br>**(10 – 11) (+/-)** | The impact is *extremely* beneficial/ detrimental. |
| | **Highly beneficial/ detrimental**<br>**(8 – 9) (+/-)** | The impact is *highly* beneficial/ detrimental. |
| | **Moderately beneficial/ detrimental**<br>**(6 – 7) (+/-)** | The impact is *moderately* beneficial/ detrimental. |
| | **Slightly beneficial/ detrimental**<br>**(4 – 5) (+/-)** | The impact is *slightly* beneficial/ detrimental. |
| | **Negligibly beneficial/ detrimental**<br>**(1 – 3) (+/-)** | The impact is *negligibly* beneficial/ detrimental. |
| | **Zero consequence**<br>**(0) (+/-)** | The impact has zero consequence. |
| **Probability of occurrence** | **Definite (4)** | Estimated at a greater than 95% chance of the impact occurring. |
| | **Probable (3)** | Estimated 50 – 95% chance of the impact occurring. |
| | **Possible (2)** | Estimated 6 – 49% chance of the impact occurring. |
| | **Unlikely (1)** | Estimated less than 5% chance of the impact occurring. |

| | | |
|---|---|---|
| | **None (0)** | Estimated no chance of impact occurring. |

The **significance** of an impact is derived by taking into account the **consequence** (nature of the impact and its extent, magnitude/intensity and duration) of the impact and the **probability** of this impact occurring through the use of the following formula:

**Significance Score = Consequence x Probability**

The means of arriving at a significance rating is explained in Table 3.

**Table 3: Definition of significance ratings**

| SIGNIFICANCE SCORE | SIGNIFICANCE RATINGS | |
|---|---|---|
| **32 – 40** | **High (+)** | **High (-)** |
| **25 – 31** | **Medium (+)** | **Medium (-)** |
| **19 – 24** | **Low (+)** | **Low (-)** |
| **10 – 18** | **Very-Low (+)** | **Very-Low (-)** |
| **1 – 9** | **Negligible** | |

Once the significance of an impact has been determined, the **confidence** in the assessment of the impact, as well as the degree of **reversibility** of the impact and **irreplaceable loss of resources** would be determined using the rating systems outlined in Table 4, 5 and 6 respectively. Lastly, the **cumulative impact** is ranked and described as outlined in Table 7.

**Table 4: Definition of confidence ratings**

| CONFIDENCE RATINGS | CRITERIA |
|---|---|
| **High** | Wealth of information on and sound understanding of the environmental factors potentially influencing the impact. |
| **Medium** | Reasonable amount of useful information on and relatively sound understanding of the environmental factors potentially influencing the impact. |
| **Low** | Limited useful information on and understanding of the environmental factors potentially influencing this impact. |

**Table 5: Degree of reversibility**

| REVERSABILITY OF IMPACT | CRITERIA |
|---|---|
| **High** | High potential for reversibility. |
| **Medium** | Medium potential for reversibility. |
| **Low** | Low potential for reversibility. |
| **Zero** | Zero potential for reversibility. |

**Table 6: Degree of irreplaceability**

| IRREPLACEABLE LOSS OF RESOURCES | CRITERIA |
|---|---|
| **High** | Definite loss of irreplaceable resources. |
| **Medium** | Medium potential for loss of irreplaceable resources. |
| **Low** | Low potential for loss of irreplaceable resources. |
| **Zero** | Zero potential for loss of irreplaceable resources. |

**Table 7: Cumulative Impact on the environment**

| CUMULATIVE IMPACTS | CRITERIA |
|---|---|
| **High** | The activity is one of *several* similar past, present or future activities in the same geographical area, and might contribute to a very significant combined impact on the geographical, physical, biological, social, economic and cultural aspects of the environment. |
| **Medium** | The activity is one of a *few* similar past, present or future activities in the same geographical area, and might contribute to a very significant combined impact on the geographical, physical, biological, social, economic and cultural aspects of the environment. |
| **Low** | The activity is localised and might have a negligible cumulative impact. |
| **Zero** | No cumulative impact on the environment. |

## EXAMPLE TEMPLATE FOR IMPACT TABLES:

**(Note: Do not include the numerical values in the impact tables in your report, just the descriptions, e.g. "Medium"/ "Low" etc.**

**You can compile individual tables for specific project components (e.g. agricultural expansion areas, enlargement of Dam 1; enlargement of Dam 5; Decommissioning of dams; etc. or an overall impact assessment, as deemed appropriate.**

**Construction phase impact:**

| | Proposed project | | "No go" | |
|---|---|---|---|---|
| | Without Mitigation | With mitigation | Without Mitigation | With mitigation |
| Nature | | | | |
| Extent | | | | |
| Magnitude | | | | |
| Duration | | | | |
| Consequence | | | | |
| Significance | | | | |
| Probability | | | | |
| Confidence | | | | |
| Reversibility | | | | |
| Irreplaceable loss of resources | | | | |
| Cumulative Impact | | | | |
| Degree to which the impact can be avoided | | | | |
| Degree to which the impact can be managed | | | | |
| Degree to which the impact can be mitigated | | | | |

**Operational phase impact:**

| | Proposed project | | "No go" | |
|---|---|---|---|---|
| | **Without Mitigation** | **With mitigation** | **Without Mitigation** | **With mitigation** |
| **Nature** | | | | |
| **Extent** | | | | |
| **Magnitude** | | | | |
| **Duration** | | | | |
| **Consequence** | | | | |
| **Significance** | | | | |
| **Probability** | | | | |
| **Confidence** | | | | |
| **Reversibility** | | | | |
| **Irreplaceable loss of resources** | | | | |
| **Cumulative Impact** | | | | |
| **Degree to which the impact can be avoided** | | | | |
| **Degree to which the impact can be managed** | | | | |
| **Degree to which the impact can be mitigated** | | | | |