BACKGROUND INFORMATION DOCUMENT

Basic Assessment (BA) Processes
for the
PROPOSED DEVELOPMENT OF SEVEN SOLAR PHOTOVOLTAIC (PV) FACILITIES (I.E. PADLOPER PV FACILITIES) AND ASSOCIATED ELECTRICITY GRID INFRASTRUCTURE (PADLOPER EGI), NEAR MURRAYSBURG IN THE WESTERN AND NORTHERN CAPE PROVINCES

September 2022

Prepared for:
African Clean Energy Developments (Pty) Ltd (ACED) (The Project Developer)

AFRICAN CLEAN ENERGY DEVELOPMENTS

Prepared by:
Council for Scientific and Industrial Research (CSIR)

CSIR
Touching lives through innovation

BASIC ASSESSMENT (BA) PROCESSES

for the

PROPOSED DEVELOPMENT OF SEVEN PADLOPER PHOTOVOLTAIC (PV) FACILITIES AND ASSOCIATED ELECTRICITY GRID INFRASTRUCTURE (PADLOPER EGI), NEAR MURRAYSBURG IN THE WESTERN AND NORTHERN CAPE PROVINCES

Prepared by:	Council for Scientific and Industrial Research (CSIR)
Prepared for:	African Clean Energy Developments (Pty) Ltd (ACED) (Project Developer)
Date:	September 2022

CONTENTS

1. INTRODUCTION AND PROJECT BACKGROUND **2**

2. NEED FOR ENVIRONMENTAL AUTHORISATIONS AND REPORTING STRUCTURE **5**

3. SPECIALIST STUDIES **6**

4. ENVIRONMENTAL ASSESSMENT PROCESS AND PUBLIC PARTICIPATION **6**

5. HOW TO GET INVOLVED? **8**

Figure 1: Locality of the Proposed Padloper PV Facilities and Padloper EGI Projects near Murraysburg in the Western and Northern Cape provinces 4

Figure 2: Key steps in the proposed Padloper PV Facilities and EGI BA Processes 7

1. INTRODUCTION AND PROJECT BACKGROUND

The Project Applicant, Padloper PV (Pty) Ltd (hereinafter referred to as "Padloper PV)" or "the Applicant"), is proposing to develop seven Solar Photovoltaic (PV) Facilities (PV Projects 1-7) with a capacity between 100 and 350 MW each and associated infrastructure, and seven associated 132 kV overhead power lines, and Electrical Grid Infrastructure (EGI), near Murraysburg in the Western Cape and Northern Cape provinces. The EGI projects are collectively referred to as "Padloper EGI Projects 8 - 14". Padloper PV Facility 1 and Padloper EGI 8 will be located in the Ubuntu Local Municipality and Pixley Ka Seme District Municipality in the Northern Cape province, whilst Padloper PV Facilities 2-7 and Padloper EGI Projects 9-14 will be located in the Beaufort West Local Municipality and the Central Karoo District Municipality in the Western Cape province. The proposed projects will make use of solar PV technology to generate electricity from energy derived from the sun. Each solar PV facility will have a range of associated infrastructure, as discussed below. The proposed projects are intended to address the current energy shortages in South Africa and assist in meeting the need for additional renewable energy generation capacity, as required by the Integrated Resource Plan (IRP) of 2019.

The following 14 projects are proposed:

- **PROJECTS 1 TO 7**: The proposed development of seven Solar PV Facilities with a capacity ranging between 100 – 350 MW each and associated infrastructure (i.e,, Padloper PV Facilities 1 – 7); and
- **PROJECTS 8 TO 14**: The proposed development of seven 132 kV overhead power lines and associated EGI from the Padloper PV Facilities to the Eskom Gamma Main Transmission Station (MTS) (i.e,, Padloper EGI projects 8 - 14).

The affected farm portions for the proposed Padloper PV Facilities and associated Padloper EGI projects are included below:

Affected Farm Portion	Padloper (Pl) PV 1	Pl PV 2	Pl PV 3	Pl PV 4	Pl PV 5	Pl PV 6	Pl PV 7	Overhead Powerline Route
Portion 7 of Farm Klipplaat No. 109	✓							✓
Remainder of Farm Riet Poort No.9		✓						✓
Portion 1 of Farm Klipplaat No. 109			✓					✓
Portion 4 of Farm Klipplaat No. 109								✓
Portion 6 of Farm Klipplaat No. 109								✓
Portion 3 of Farm Driefontein No. 26				✓				✓
Portion 2 of Farm Driefontein No. 26					✓			✓
Portion 4 of Farm Driefontein No. 26								✓
Portion 7 of Farm Driefontein No. 26						✓	✓	✓
Remainder of Farm No.8								✓
Remainder of Farm No.6								✓
Portion 2 of Farm No.6								✓
Portion 4 of Farm No.7								✓
Remainder of Farm No.7								✓
Portion 2 of Farm No.7								✓
Portion 5 of Farm Klein Los Kop No. 5								✓
Remainder of Farm Schietkuil No. 3								✓

The proposed Padloper PV and EGI projects will consist of the components listed below. It is important to note that the exact specifications of the proposed project components will only be determined during the detailed engineering phase prior to construction (subsequent to the issuing of an Environmental Authorisation (EA)), should such an authorisation be granted for the proposed projects, but that the information provided below is seen as the worst-case scenario for the projects.

The key components of the proposed Padloper PV Facilities (i.e,, **Projects 1 to 7)** are described below:

- Solar Field, comprising Solar Arrays with a maximum height of 4.5 m.
- The developable area (i.e,, project footprint) for each PV Facility and associated infrastructure will range from approximately 175 to 700 hectares (ha).
- The generation capacity of each PV Facility will range from approximately 100 MWac to up to 350 MWac.
- Building infrastructure at each proposed Padloper PV Facility (e.g., on-site substation complexes; offices; operational and maintenance control centres; warehouse/workshops; ablution facilities; inverter-transformer stations and guard houses).
- An on-site substation complex (~ 2 ha and up to 18 m high, with a capacity of 22/33 kV stepping up to 132 kV) at each Padloper PV Facility including the following:
    - On-site Independent Power Producer (IPP) or Facility Substation (~1 ha). This will include the relevant section that will be maintained by the IPP.
    - Lithium-Ion Battery Energy Storage System (BESS). Each BESS will have an area of ~ 5 ha, height up to 10 m, and capacity of between ~ 100 MW/600 MWh to 350 MW/ 2100 MWh.
    - Switching Station and Collector Station (~1 ha).
- Associated infrastructure at each PV Facility (e.g., temporary construction laydown areas; internal roads up to 5 m wide; upgrading of existing access roads; fencing; storm water channels; panel maintenance and cleaning area; underground low voltage cables or cable trays; and 22 or 33 kV internal underground power lines).

The key components and power line details of **Projects 8 to 14** are described below:

- 132 kV Overhead Power Line from each Padloper PV Facility to the Eskom Gamma MTS. Therefore, seven overhead power lines are being proposed.
- Pylons: 132 kV steel monopole or lattice towers;
- Height:
    - 17.4 - 21 m;
- Span length: 200, 250 or 375 m;
- Registered servitude width:
    - 50 m for 132 kV power lines.
- Assessment Corridor: A 400 m wide corridor (i.e,, 200 m on either side of centreline) for all the power lines listed above will be assessed by the specialists, in order to identify sensitivities and features that need to be avoided. Note that the entire servitude will not be cleared of vegetation.

Refer to Figure 1 for a locality map of the proposed Padloper PV and EGI projects.

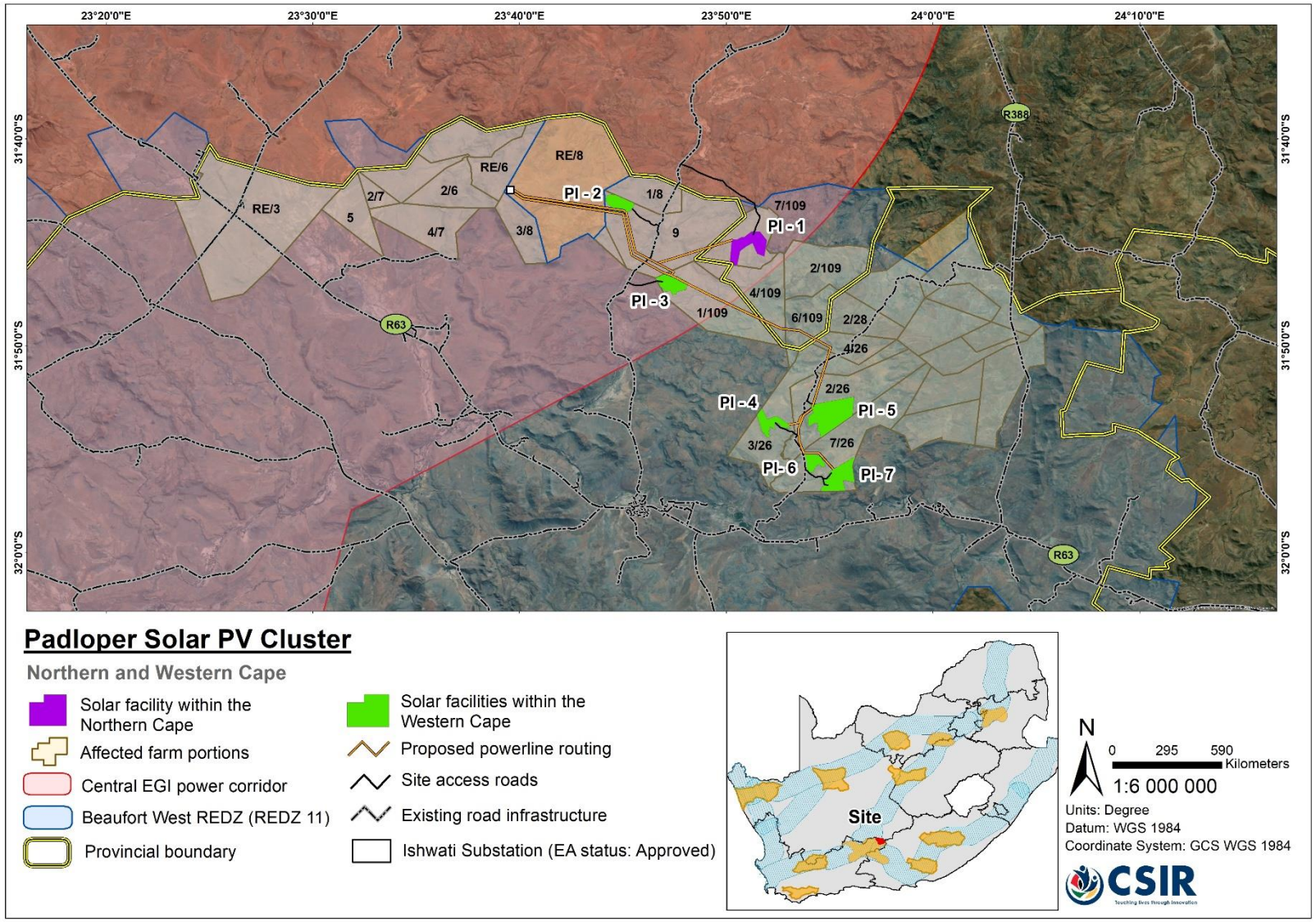

Figure 1: Locality of the Proposed Padloper PV Facilities and Padloper EGI Projects near Murraysburg in the Western and Northern Cape provinces

2. NEED FOR ENVIRONMENTAL AUTHORISATIONS AND REPORTING STRUCTURE

In terms of the National Environmental Management Act (Act No. 107 of 1998, as amended) (NEMA) and the 2014 NEMA Environmental Impact Assessment (EIA) Regulations (as amended), published in Government Notice (GN) R326, R327, R325 and R324 on 7 April 2017 in Government Gazette 40772 (and amended on 11 June 2021 in GN 517; and on 3 March 2022 in GN 1816), the proposed projects require EA or similar. The **key** Listed Activities triggered by the proposed projects are listed below:

- **Projects 1 - 7**: **Listing Notice 2 (GN R325), Activity 1**: *The development of facilities or infrastructure for the generation of electricity from a renewable resource where the electricity output is 20 megawatts or more, excluding where such development of facilities or infrastructure is for photovoltaic installations and occurs: a) within an urban area; or b) on existing infrastructure.*
- **Projects 1 - 7: Listing Notice 2 (GN R325), Activity 15:** *The clearance of an area of 20 hectares or more of indigenous vegetation, excluding where such clearance of indigenous vegetation is required for (i) the undertaking of a linear activity; or (ii) maintenance purposes undertaken in accordance with a maintenance management plan.*
- **Projects 8 - 14: Listing Notice 1 (GN R327), Activity 11 (i)**: *The development of facilities or infrastructure for the transmission and distribution of electricity - (i) outside urban areas or industrial complexes with a capacity of more than 33 but less than 275 kilovolts or more.*

The complete list of listed activities will be confirmed and detailed during the BA Processes. Furthermore, all seven proposed Padloper PV Facilities (i.e, Projects 1 to 7) fall entirely within the gazetted Beaufort West Renewable Energy Development Zone (REDZ) and as such require a Basic Assessment (BA) Process each, instead of a full Scoping and EIA Process, and will be subjected to a reduced decision-making timeframe of 57 days in line with GN 144 dated February 2021.

In addition, EGI projects 8-10 and the northern section of the EGI project 11 (i.e, the greater part of the project) also fall within the Central Power Corridor, which is one of five EGI Power Corridors which were gazetted for implementation on 16 February 2018 in GG 41445, GN 113. Therefore, these specific projects will be subjected to Registration via the Power Line and Substation Standard [Government Gazette (GG) 47095; GN 2313, dated 27 July 2022] where it does apply; or BA Processes (where the Standard **does not** apply), with a reduced decision-making timeframe. The applicability of the Standard will be confirmed as the process progresses.

On the other hand, the **Padloper EGI projects 12 – 14** fall outside of the gazetted Central Power Corridor and will be subjected to a BA Process as none of the listed activities in Listing Notice 2 are triggered at this stage for these projects.

The National Department of Forestry, Fisheries and the Environment (DFFE) has been identified as the Competent Authority in terms of Section 24C of the NEMA. The Council for Scientific and Industrial Research (CSIR) Environmental Management Services (EMS) group has been appointed to undertake the required BA and Registration Processes on behalf of the Applicant.

For Projects 1 to 7 and Projects 12 to 14, separate Applications for EA will be submitted to DFFE. Separate Draft and Final BA Reports will be compiled and submitted to stakeholders for comment for Projects 1 to 7 and Projects 12 to 14 and to the DFFE for decision-making respectively. It is envisaged that separate EAs will be issued for these projects, should these be granted by DFFE.
Where the EGI Standard (GG 47095; GN 2313, dated 27 July 2022) applies, separate registration forms and environmental sensitivity reports will be compiled.

3. SPECIALIST STUDIES

Various specialist assessments and/or compliance statements are required for the BA Processes, as indicated in Table 1 below. Note that the CSIR will provide inputs on Civil Aviation and Defence. Note that where relevant, the specialist assessments will comply with Appendix 6***** of the 2014 NEMA EIA Regulations (as amended), or the Assessment Protocols published in GN R320 on March 2020#; or the Assessment Protocols published in GN R1150 on October 2020**^**. The BESS Risk Assessment and Geohydrology reports will serve as a technical report, and the aforementioned legislation will thus not be applicable. Additional specialist studies or technical input may be required as the BA Processes progress.

Table 1: Summary of the Specialist Assessments

Specialist Assessment/Theme	PV Projects 1 to 7	EGI Projects 8 to 14 (Refer to the Note 1 below)
▪ Agriculture and Soils#	✓	✓
▪ Terrestrial Biodiversity#, Terrestrial Plant Species^ and Terrestrial Animal Species^	✓	✓
▪ Aquatic Biodiversity#	✓	✓
▪ Avifauna Assessment^	✓	✓
▪ Visual Impact Assessment*	✓	✓
▪ Heritage Impact Assessment*	✓	✓
▪ Palaeontology Assessment*	✓	✓
▪ Socio-Economic Assessment* (PV only)	✓	☒
▪ Traffic Impact Assessment* (PV only)	✓	☒
▪ Geotechnical Assessment* (PV only)	✓	☒
▪ Geohydrology Assessment (PV only)	✓	☒
▪ BESS Risk Assessment (PV only)	✓	☒

Note 1: These specialist assessments will be undertaken for the Padloper EGI projects 12 – 14 as these fall outside the Central Power Corridor and therefore the EGI Standard (GG 47095; GN 2313, dated 27 July 2022) does not apply. In the case of Padloper EGI Projects 8 – 11, these specialist assessments will only be undertaken in instances where the EGI Standard does not apply.

4. ENVIRONMENTAL ASSESSMENT PROCESS AND PUBLIC PARTICIPATION

The information presented in this section applies to Projects 1 to 7 and Projects 12 to 14 only. However, for Projects 8 – 11, if the requirements of the EGI Standard are not met following specialist site sensitivity verifications, then the BA process below will be undertaken. This will be confirmed as the process progresses.

The BA Processes will provide a detailed description of the proposed projects and an assessment of the potential impacts that the projects may have on the environment. It also includes the development of an Environmental Management Programme (EMPr) which outlines the environmental management actions that need to be implemented by the Applicant to avoid and minimise any potential negative environmental impacts; and to enhance any potential positive impacts that may arise.

Initially the Applications for EA will be lodged with the DFFE. Following this, the Draft Basic Assessment Report(s) (DBARs) will be compiled and released to Interested and/or Affected Parties (I&APs), Stakeholders and Departments (including the DFFE) for a 30-day comment period. Subsequently, the

Final Basic Assessment Report(s) (FBARs) for will be compiled (taking relevant comments received into account) and submitted to the DFFE for decision-making. The DFFE will then either accept or refuse EA within 57 days of receipt of the FBARs. Thereafter, the I&APs, Stakeholders and Departments will be informed of the outcome of the decisions and opportunity to appeal in writing. Refer to Figure 2 for an overview of the key steps of the processes.

An integrated Public Participation Process (PPP) will be undertaken as part of the BA Processes, and all applications necessary in respect of other applicable legislation. The BA Processes will also confirm if a Water Use Authorisation is required in accordance with the National Water Act (Act No. 36 of 1998), as amended. Comments, in terms of the National Heritage Resources Act (Act No. 25 of 1999), will also be sought from the South African Heritage Resources Agency (SAHRA) and Heritage Western Cape (for projects in the Western Cape) as part of the BA Processes.

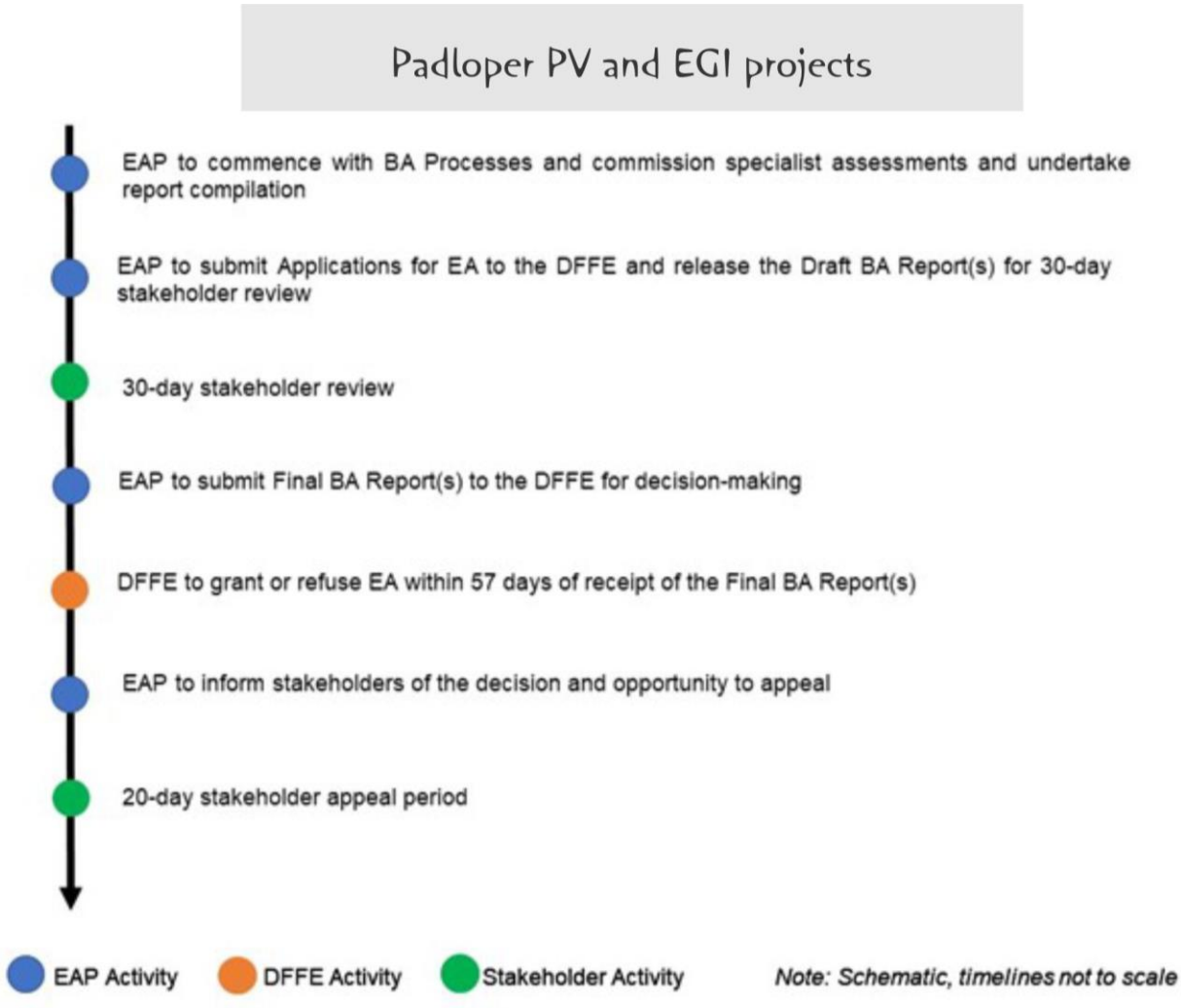

Figure 2: Key steps in the proposed Padloper PV Facilities and EGI BA Processes

5. HOW TO GET INVOLVED?

Should you be interested in registering as an I&AP and to provide comments on these proposed projects and BA Processes, you are kindly requested to e-mail your name and contact details, with an indication of any direct, business, financial, personal or other interest which you may have in these applications, to the EAP at the CSIR: Minnelise Levendal (Tel: 083 309 8159; E-mail: **ems@csir.co.za** (with "Padloper PV and EGI" as the subject line); Postal address: P.O. Box 320, Stellenbosch, 7599). The project website will be updated during the BA Processes:
https://www.csir.co.za/environmental-impact-assessment