

Prepared for:
ABO Wind Renewable
Energies (Pty) Ltd



Basic Assessment (BA) and Scoping & Environmental Impact
Assessment (EIA) Processes
for the
PROPOSED DEVELOPMENT OF 14 SOLAR PHOTOVOLTAIC (PV)
FACILITIES (I.E. KUDU SOLAR FACILITIES), ELECTRICITY GRID
INFRASTRUCTURE, AND VARIOUS ASSOCIATED
INFRASTRUCTURE, NEAR DE AAR, NORTHERN CAPE

JUNE 2022



BACKGROUND
INFORMATION
DOCUMENT

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



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Date:

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1. INTRODUCTION AND PROJECT BACKGROUND

ABO Wind renewable energies (Pty) Ltd¹ (hereinafter referred to as ABO Wind) is proposing to develop 14 Solar Photovoltaic (PV) power generation facilities and associated Electrical Grid Infrastructure (EGI), north-east of the town of De Aar, in the Renosterberg Local Municipality and Pixley Ka Seme District Municipality, in the Northern Cape Province. Each project will have a specific Project Applicant. The proposed projects will make use of PV solar 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 project is 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 total generation capacity of the entire project would be in the order of approximately 2 140 Megawatts alternating current (MWac). As a means of comparison, for 2022 the municipal area of Kimberley in the Northern Cape has a total electricity load forecast of 643 MW and the total load forecast for the Northern Cape is 897 MW (Eskom, 2021²). The total provincial peak load forecast for the Northern Cape is expected to increase to about 1 313 MW by 2031 (Eskom, 2021²).

The following 30 projects are proposed:

- **PROJECTS 1 TO 14:** The proposed development of 14 Solar PV Facilities and associated infrastructure (detailed below) (i.e. Kudu Solar Facility 1 to Kudu Solar Facility 14).
- **PROJECTS 15 TO 28:** The proposed development of Switching Stations and Collector Stations at each On-Site Substation Complex at each of the 14 Kudu Solar Facilities, and up to 14 x 132 kV Overhead Power Lines running from each Solar Facility to the proposed Collector Station(s) or up to the proposed Main Transmission Substation (MTS).
- **PROJECT 29:** The proposed development of an independent 400/132 kV MTS, including associated infrastructure at the MTS.
- **PROJECT 30:** The proposed development of a 400 kV Loop-In-Loop-Out (LILO) from the existing Hydra-Perseus 400 kV Overhead Power Line to the proposed MTS.

The key components of **Projects 1 to 14** are described below:

- Solar Field, comprising Solar Arrays with a maximum height of approximately 3.5 m.
- The developable area (i.e. project footprint) for each PV Facility and associated infrastructure will range from approximately 30 to 550 hectares.
- The generation capacity of each PV Facility will range from approximately 50 MWac to up to 300 MWac.
- Building Infrastructure at each 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 (~ 4 ha and 10 m high, with a capacity of 22/33 kV stepping up to 132 kV) at each 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.

¹ ABO Wind renewable energies (Pty) Ltd is the holding company. Various subsidiary companies will serve as the Project Applicants. Details of the subsidiary companies will be provided in the Assessment Reports.

² Eskom (2021). Transmission Development Plan (2022 – 2031). Accessed online. May 2022. <https://www.eskom.co.za/eskom-divisions/tx/transmission-lines/transmission-development-plans/>

- Lithium Ion or Redox Flow Battery Energy Storage Systems (BESS). Each BESS will have an area of ~ 1 ha, height up to 10 m, and capacity of ~ 500 MW/500 MWh.
- Switching Station and Collector Station (~2 ha). This forms part of Projects 15 – 28.
- 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 of **Projects 15 to 28** are described below:

- Switching Station and Collector Station (~2 ha each) at each on-site substation complex at each Solar Facility. This will include the relevant section that will be transferred from the IPP to Eskom.
- 132 kV Overhead Power Line from each Kudu Solar Facility to the proposed Collector Station or up to the proposed MTS. Therefore, 14 overhead power lines are being proposed.

The key components of **Projects 29 and 30** are described below:

- **Project 29:** Development of an independent 400/132 kV MTS, including associated infrastructure at the MTS such as 132 kV busbars and feeder bay(s), and 500 MVA 400/132 kV transformer(s) with transformer bay(s).
- **Project 30:** Development of a 6.5 km long 400 kV LILO (from the existing Hydra Perseus 400 kV Overhead Power Line to the proposed independent MTS).
- However, if the proposed Eskom Hydra B Substation is built by Eskom, then additional upgrades of this Eskom substation would be undertaken to ensure that the substation can accommodate the power generated by the proposed 14 Kudu Solar Facilities. This would be undertaken based on engagements with and approval from Eskom. Additional detail will be provided as the BA processes progress. The Eskom Hydra B Substation is planned to be developed “approximately 50 km from the existing Hydra Substation along the existing Hydra-Perseus 400 kV line” (Eskom, 2021, Page 115).

The power line details for **Projects 15 to 30** are indicated below:

- Pylons: 132 kV (Projects 15 – 28) and 400 kV (Project 30) steel monopole or lattice towers;
- Height:
 - 132 kV power lines (Projects 15 – 28): 17.4 - 21 m; and
 - 400 kV power lines (Project 30): 27 – 40 m;
- Span length: 200, 250 or 375 m;
- Servitude width:
 - 31 m for 132 kV power lines;
 - 47 m to 55 m for 400 kV power lines.
- Assessment Corridor: A 300 m – 1000 m wide corridor 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. Projects 15 – 30 will be constructed within the assessed corridor.

Refer to Figure 1 for a locality map of the proposed projects.

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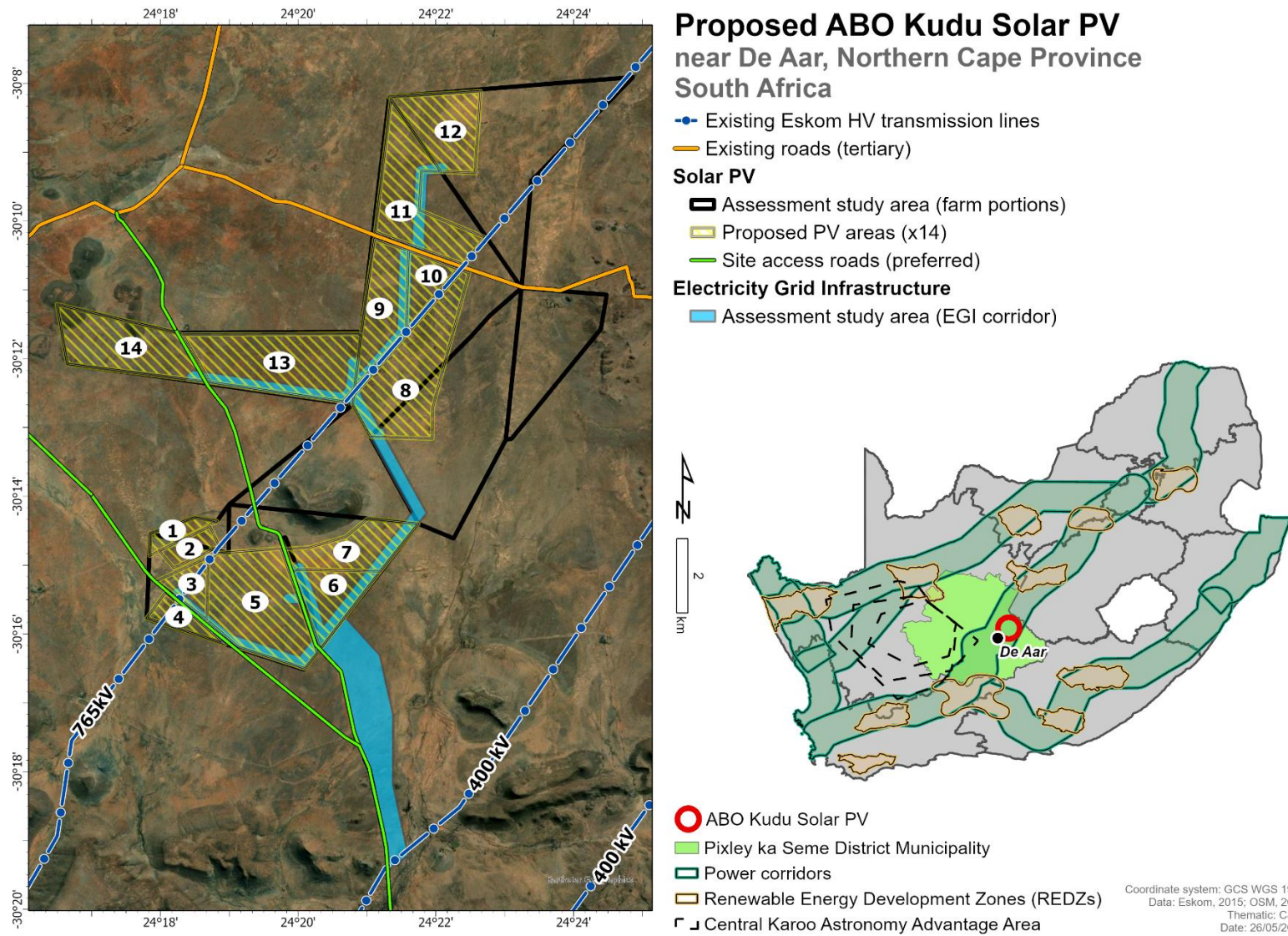


Figure 1: Locality of the Proposed Kudu Solar Facilities and EGI

2. NEED FOR ENVIRONMENTAL AUTHORISATIONS AND REPORTING STRUCTURE

In terms of the National Environmental Management Act (Act 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 Environmental Authorisation (EA). **Projects 1 to 14** will each require a full **Scoping and EIA** Process. The remaining projects, i.e. **Projects 15 to 30**, will each require a **Basic Assessment (BA)** Process. The **key** Listed Activities triggered by the proposed projects are listed below:

- **Projects 1 to 14: 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 15 to 28: 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.*
- **Projects 29 and 30: Listing Notice 2 (GN R325), Activity 9:** *The development of facilities or infrastructure for the transmission and distribution of electricity with a capacity of 275 kilovolts or more, outside an urban area or industrial complex.*

The complete list of listed activities will be confirmed and detailed during the BA and EIA Processes. Furthermore, the proposed Kudu Solar Facilities and EGI are located within the Central Strategic Transmission Corridor that was gazetted in GN 113 in 2018. Therefore, Projects 15 – 30 will be subjected to BA Processes and a 57-day decision-making timeframe.

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. In accordance with Regulation 12 (1) of the 2014 NEMA EIA Regulations (as amended), the Council for Scientific and Industrial Research (CSIR) Environmental Management Services (EMS) group has been appointed as the Environmental Assessment Practitioner (EAP) to undertake the required Environmental Assessment Processes.

A request has been submitted to the DFFE for consideration for the EAP to submit combined Applications for EA and associated Scoping, EIA and BA Reports; and for the Specialists to also submit combined specialist reports per theme, in terms of Regulation 11 (4) of the 2014 NEMA EIA Regulations (as amended), and the issuing of multiple EAs (should they be granted) in terms of Regulation 25 (1) and (2) of the 2014 NEMA EIA Regulations (as amended). It is proposed that 30 separate EAs will be issued for the entire project (should they be granted). Depending on the DFFE's decision-making on the combination request, either single or combined Applications for EA and Scoping, EIA or BA Reports will be compiled and submitted to stakeholders for comment and to the DFFE for decision-making.

3. SPECIALIST STUDIES

Various specialist assessments and/or compliance statements are required for the Scoping and EIA, and 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 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 EIA and BA processes progress.

Table 1: Summary of the Specialist Assessments

Specialist Assessment/Theme	Projects 1 to 14	Projects 15 to 30
▪ 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)	✓	☒
▪ Geohydrology Impact Assessment* (PV only)	✓	☒
▪ BESS Risk Assessment (PV only)	✓	☒

4. ENVIRONMENTAL ASSESSMENT PROCESS AND PUBLIC PARTICIPATION

The BA, and Scoping and EIA, 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 Application for EA for Projects 1 to 14 will be lodged with the DFFE. Following this, the Draft Scoping Report(s) (DSR) for Projects 1 to 14 will be released to Interested and/or Affected Parties (I&APs), Stakeholders and Departments (including the DFFE) for a 30-day comment period. Thereafter, the Final Scoping Report(s) (FSR) for Projects 1 to 14 will be compiled (taking relevant comments received into account) and submitted to the DFFE for decision-making. The DFFE will then either accept the FSR or refuse EA, within 43 days of receipt of the FSR.

Should the FSR be accepted, the EIA Phase will thereafter commence. The next step of the process is to submit the Application for EA for Projects 15 to 30 (i.e. EGI Projects) to the DFFE. Following this, the Draft EIA Report(s) (DEIAR) for Projects 1 to 14; and Draft BA Report(s) (DBAR) for Projects 15 to 30 will be released to I&APs, Stakeholders and Departments (including the DFFE) for a 30-day comment period. Thereafter, the Final EIA Report(s) (FEIAR) for Projects 1 to 14; and Final BA Report(s) (FBAR) for Projects 15 to 30 will be compiled based on consideration of relevant comments received and submitted to the DFFE for decision-making. The DFFE will then either grant or refuse EA for the various projects within 107 days of receipt of the FEIAR (Projects 1 to 14) and within 57 days of receipt of the FBAR (Projects 15 to 30). Thereafter, the I&APs, Stakeholders and Departments will be informed of the outcome of the decision and opportunity to appeal in writing. Refer to Figure 2 for an overview of the key steps of the process.

An integrated Public Participation Process (PPP) will be undertaken as part of the BA and EIA Processes for Projects 1 to 30, and all applications necessary in respect of other applicable legislation. The BA and EIA Processes will also confirm if a Water Use Authorisation is required in accordance with the National Water Act (Act 36 of 1998, as amended). Comments, in terms of the National Heritage Resources Act (Act 25 of 1999), will also be sought from the South African Heritage Resources Agency (SAHRA) as part of the BA and EIA Processes.

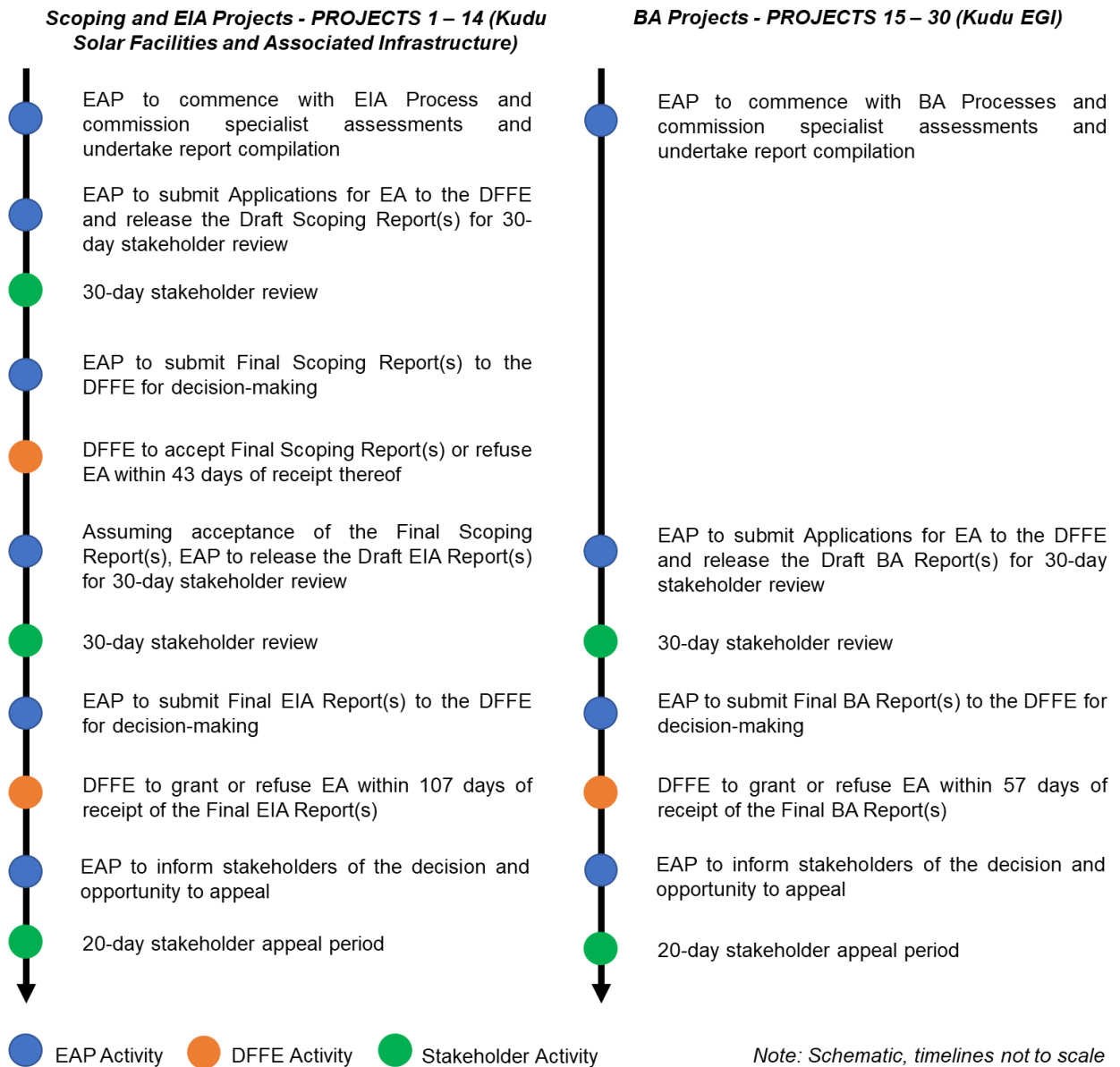


Figure 2: Key steps in the proposed Kudu Solar Facilities and EGI BA and EIA Processes

5. HOW TO GET INVOLVED?

Should you be interested in registering as an I&AP and to provide comments on these proposed projects, 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: Rohaida Abed (Tel: 031 242 2300; E-mail: ems@csir.co.za (with “Kudu PV and EGI” as the subject line); Postal address: P.O. Box 59081, Umbilo, Durban, 4075; or Fax: 031 261 8172). The project website will be updated during the process: <https://www.csir.co.za/environmental-impact-assessment>