DRAFT SCOPING REPORT

Scoping and Environmental Impact Assessment for the Proposed Development of a Solar Photovoltaic (PV) Facility and associated infrastructure (Biesjesvlei PV1); Battery Energy Storage System and associated infrastructure (Biesjesvlei BESS 1); and 132 kV Overhead Power Line from the on-site substation to a proposed Main Transmission Substation and associated infrastructure (Biesjesvlei EGI 1); near Smithfield, within the Mohokare Local Municipality, Xhariep District Municipality, Free State.

March 2024

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

CSIR
Touching lives through innovation

Prepared for:
Scatec Africa (Pty) Ltd and Veroniva (Pty) Ltd

Scatec
veroniva
Renewable Energy Development

PART A: MAIN REPORT

CSIR
Touching lives through innovation

SCOPING AND ENVIRONMENTAL IMPACT ASSESSMENT

for the

Proposed Development of a Solar Photovoltaic (PV) Facility and associated infrastructure (Biesjesvlei PV1); Battery Energy Storage System and associated infrastructure (Biesjesvlei BESS 1); and 132 kV Overhead Power Line from the on-site substation to a proposed Main Transmission Substation and associated infrastructure (Biesjesvlei EGI 1); near Smithfield, within the Mohokare Local Municipality, Xhariep District Municipality, Free State

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Prepared for:
Scatec Africa (Pty) Ltd and Veroniva (Pty) Ltd

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Council for Scientific and Industrial Research (CSIR)

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Report Details

Title:	Scoping and Environmental Impact Assessment for the Proposed Development of a Solar Photovoltaic (PV) Facility and associated infrastructure (Biesjesvlei PV1); Battery Energy Storage System and associated infrastructure (Biesjesvlei BESS 1); and 132 kV Overhead Power Line from the on-site substation to a proposed Main Transmission Substation and associated infrastructure (Biesjesvlei EGI 1); near Smithfield, within the Mohokare Local Municipality, Xhariep District Municipality, Free State.	
Purpose of this report:	The purpose of this Draft Scoping Report is to: ▪ Present the details of and the need for the proposed projects; ▪ Describe the affected environment at a sufficient level of detail to facilitate informed decision-making; ▪ Provide an overview of the Scoping and EIA Process being followed, including public consultation; ▪ Provide an overview of the potential positive and negative impacts of the proposed projects on the environment; ▪ Provide recommendations to avoid or mitigate negative impacts and to enhance the positive benefits of the proposed projects (based on a high-level); and ▪ Provide the Plan of Study for the EIA Phase for the proposed projects. The Draft Scoping Report is now available to all Interested and/or Affected Parties (I&APs), Organs of State and relevant stakeholders for a 30-day review period extending from **8 March 2024 to 10 April 2024**, excluding public holidays. All comments submitted during the 30-day review will be incorporated in a Comments and Responses Report, and addressed, as applicable and where relevant, and will be included in the Final Scoping Report. The Final Scoping Report will be submitted to the National Department of Forestry, Fisheries and the Environment (DFFE) for decision-making.	
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Formatting and Desktop Publishing:	Magdel van der Merwe, DTP Solutions	
Date:	March 2024	
DFFE Reference No:	Still to be issued following the submission of the Application for Environmental Authorisation.	
To be cited as:	CSIR, 2024. Scoping and Environmental Impact Assessment for the Proposed Development of a Solar Photovoltaic (PV) Facility and associated infrastructure (Biesjesvlei PV1); Battery Energy Storage System and associated infrastructure (Biesjesvlei BESS 1); and 132 kV Overhead Power Line from the on-site substation to a proposed Main Transmission Substation and associated infrastructure (Biesjesvlei EGI 1); near Smithfield, within the Mohokare Local Municipality, Xhariep District Municipality, Free State. Scoping Report. CSIR Report Number: CSIR/SPLA/SECO/ER/2024/0002/B	

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INTRODUCTION AND PROJECT LOCALITY

Scatec Africa (Pty) Ltd (the project owner) with support from Veroniva (Pty) Ltd, are proposing to develop three Solar Photovoltaic (PV) and Battery Energy Storage System (BESS) Facilities, and associated Electricity Grid Infrastructure (EGI), near Smithfield within the Mohokare Local Municipality, Xhariep District Municipality, Free State (Figure A). The project is referred to as the "Biesjesvlei" Solar PV, BESS and EGI development.

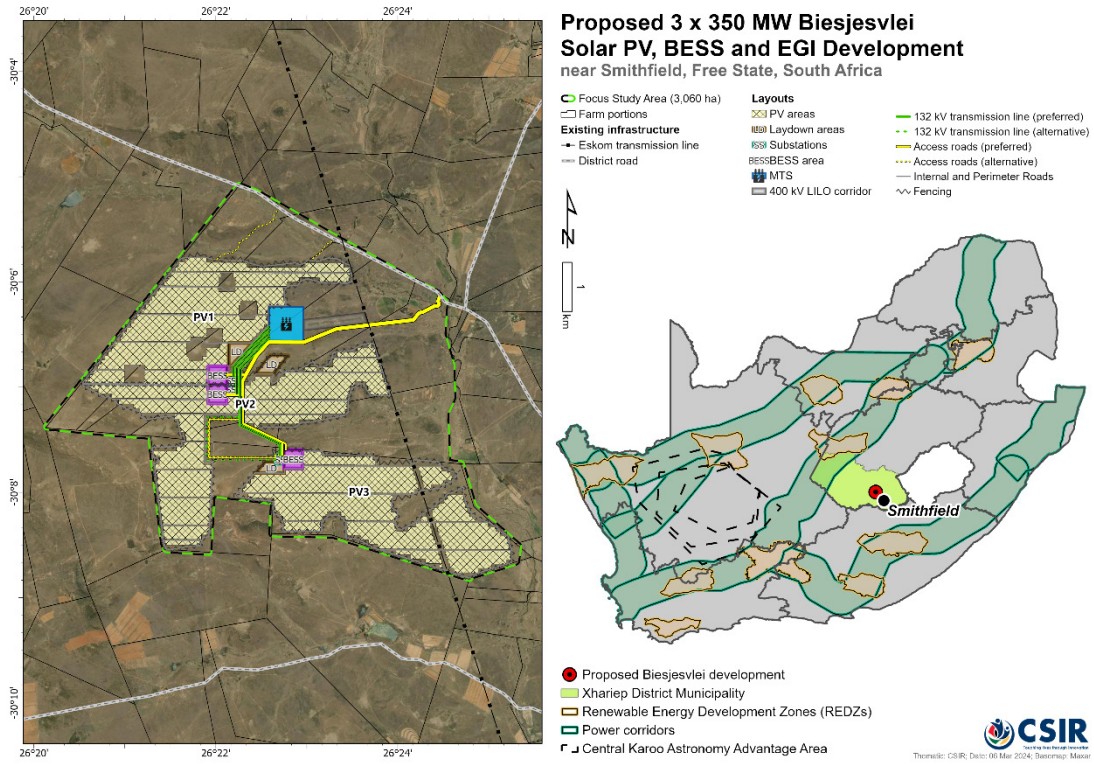

Figure A. Locality map for the proposed Biesjesvlei Solar PV1 to PV3; Biesjesvlei BESS 1 to 3; Biesjesvlei EGI 1 to 3; and Biesjesvlei MTS and LILO, near Smithfield in the Free State.

The proposed projects are not located within any of the Renewable Energy Development Zones (REDZs) that were gazetted in GN 114 on 16 February 2018; and GN 144 on 26 February 2021. The proposed projects are also not located within any of the Strategic Transmission Corridors that were gazetted in GN 113 on 16 February 2018; and GN 1637 on 24 December 2021.

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 and is proposed to connect to an existing 400 kV power line via dedicated 132 kV power lines, a proposed independent Main Transmission Substation (MTS) and a Loop-In-Loop-Out (LILO).

Each of the Solar PV Facilities would be its own project and would require its own, separate Environmental Authorisation (EA). The same applies to the BESS and EGI projects. Each project will have a specific Project Applicant. The following projects are being proposed (Figure B):

- **PROJECTS 1 TO 3**: The proposed development of three Solar PV Facilities and associated infrastructure (i.e. Biesjesvlei PV1 to Biesjesvlei PV3).
- **PROJECTS 4 TO 6**: The proposed development of three BESS and associated infrastructure (i.e. Biesjesvlei BESS 1 to Biesjesvlei BESS 3).
- **PROJECT 7 to 9**: The proposed development of a 132 kV Overhead Power Line from each Biesjesvlei PV Facility to the proposed MTS, and associated infrastructure (i.e. Biesjesvlei EGI 1 to Biesjesvlei EGI 3).
- **PROJECT 10**: The proposed development of an independent 400/132kV MTS and a 400 kV LILO from the MTS to the existing Eskom power line, as well as associated infrastructure (i.e. Biesjesvlei MTS and LILO).

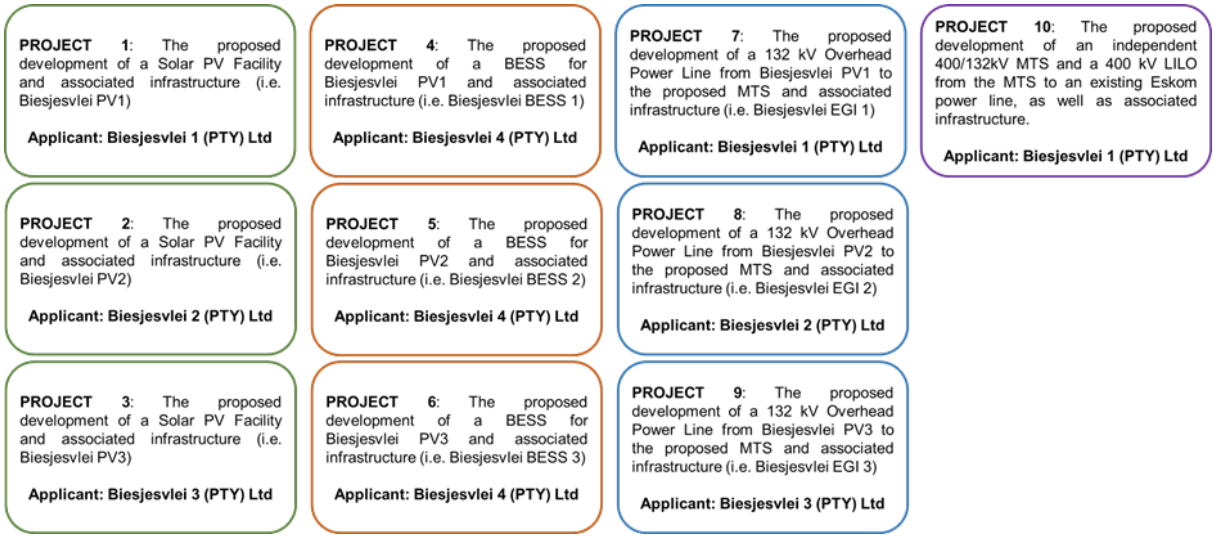

Figure B: Breakdown of the projects that comprise the Biesjesvlei Solar PV, BESS, EGI, MTS and LILO Development.

REPORT COMBINATION AND AVAILABILITY

A request to combine the Environmental Assessment reporting, for Projects 1 to 9, in terms of Regulation 11 of the 2014 National Environmental Management Act (Act 107 of 1998, as amended) (NEMA) Environmental Impact Assessment (EIA) Regulations (as amended), and the issuing of multiple EAs in terms of Regulations 25 (1) and (2) was discussed with the National Department of Forestry, Fisheries and the Environment (DFFE) at the Pre-Application Meeting on 6 October 2023. A letter was submitted to the DFFE to request for the combination and issuing of multiple EAs in October 2023. The DFFE approved the request for combination and multiple EAs (should they be granted) in a letter dated 1 November 2023, sent via email on 6 November 2023.

The report for Project 10 (Biesjesvlei MTS and LILO) is not included in the combined reporting because only one EA is required for this project. Hence, one standalone report has compiled for Project 10.

The reporting structure indicated in Figure C is being used.

In summary, separate combined reports have been compiled for each PV Facility, BESS and EGI cluster (i.e. Projects 1 to 9) and a separate Scoping Report has been compiled for the MTS and LILO (i.e. Project 10). Overall, four Scoping Reports have been compiled for the proposed development, and it is proposed that 10 separate EAs will be issued (should they be granted).

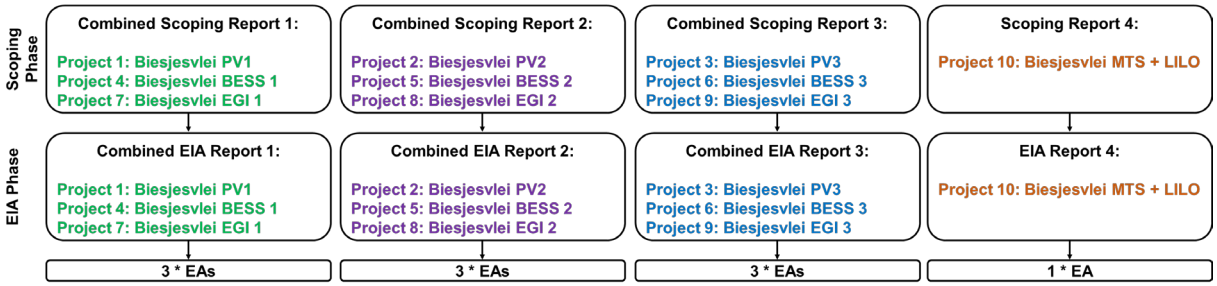

Figure C: Environmental Assessment Reporting Structure for the Biesjesvlei Solar PV, BESS, EGI, MTS and LILO Development.

This combined Scoping Report only addresses Biesjesvlei PV1, Biesjesvlei BESS 1 and Biesjesvlei EGI 1 (i.e. Projects 1, 4 and 7, respectively).

Note: The information throughout this Executive Summary applies to each of the projects addressed in this report (i.e. Project 1 (Biesjesvlei PV1), Project 4 (Biesjesvlei BESS 1) and Project 7 (Biesjesvlei EGI 1)), unless where mentioned otherwise.

This Scoping Report is being released to all Interested and/or Affected Parties (I&APs), Organs of State and relevant stakeholders for a 30-day review period. All comments received during the 30-day review will be incorporated into a detailed Comments and Responses Report, and addressed, as applicable and where relevant, and will be included with the Final Scoping Report. The Final Scoping Report will thereafter be submitted to the DFFE for consideration.

An integrated Public Participation Process is being undertaken for the proposed projects (i.e. Projects 1 to 10).

COMPETENT AUTHORITY AND APPLICANTS

The Competent Authority for the proposed projects is the DFFE, and the Project Applicants are as follows:

- Project 1: Biesjesvlei PV1 and associated infrastructure: Biesjesvlei 1 (Pty) Ltd;
- Project 4: Biesjesvlei BESS 1 and associated infrastructure: Biesjesvlei 4 (Pty) Ltd; and
- Project 7: Biesjesvlei EGI 1 and associated infrastructure: Biesjesvlei 1 (Pty) Ltd.

NEED FOR THE EIA

The proposed projects trigger the need for an EA in terms of the 2014 NEMA EIA Regulations (as amended) published in GN R326, R327, R325 and R324 and further amended on 11 June 2021 in GN 517; and on 3 March 2022 in GN 1816. Chapter 4 of the Scoping Report contains a detailed list of activities, which may be triggered by each project and the various project components and thus forms part of this Scoping and EIA Process. Listed below are the key listed activities triggered per project (Table A).

Table A. Key Listed Activities Per Project

Project	Listing Notice, Listed Activity and Description
Project 1: Biesjesvlei PV1 and associated infrastructure	**GN R325 (Listing Notice 2), 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 facility or infrastructure is for photovoltaic installations and occurs (a) within an urban area; or (b) on existing infrastructure
Project 4: Biesjesvlei BESS 1 and associated infrastructure	**GN R327 (Listing Notice 1), Activity 27**: The clearance of an area of 1 hectares or more, but less than 20 hectares of indigenous vegetation, except 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.
Project 7: Biesjesvlei EGI 1 and associated infrastructure	**GN R327 (Listing Notice 1), 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

The purpose of the Scoping and EIA Process is to identify, assess and report on any potential impacts the proposed projects, if implemented, may have on the receiving environment. The Scoping and EIA therefore needs to show the Competent Authority and the Project Applicant what the consequences of their choices will be in terms of impacts on the biophysical and socio-economic environment and how such impacts can be, as far as possible, enhanced or mitigated and managed as the case may be.

PROJECT EIA TEAM

In accordance with Regulation 12 (1) of the 2014 NEMA EIA Regulations (as amended), the Council for Scientific and Industrial Research (CSIR) has been appointed by the Project Developer to undertake the required Scoping and EIA Process in order to determine the potential biophysical, social and economic impacts associated with undertaking the proposed development. The project team and the relevant specialists are indicated in Table B below. The term “N/A” in the table below indicates that the specialist study in question is not relevant to that specific project.

Table B. Project Team for the Scoping and EIA Process

NAME	ORGANISATION	ROLE/STUDY TO BE UNDERTAKEN	PROJECT 1 – PV1	PROJECT 4 – BESS 1	PROJECT 7 – EGI 1
Environmental Management Services (CSIR)					
Paul Lochner (*Registered EAP* (2019/745))	CSIR	EAP, Technical Advisor and Quality Assurance	✓	✓	✓
Rohaida Abed (*Pr.Sci.Nat.; Registered EAP* (2021/4067))	CSIR	EAP and Project Manager	✓	✓	✓
Helen Antonopoulos	CSIR	Project Officer	✓	✓	✓
Suvasha Ramcharan	CSIR	Project Officer	✓	✓	✓
Phindile Mthembu	CSIR	Project Officer	✓	✓	✓
Luanita Snyman van der Walt *(Pr.Sci.Nat.)*	CSIR	GIS Specialist	✓	✓	✓
Lizande Kellerman *(Pr.Sci.Nat.)*	CSIR	Public Participation Specialist	✓	✓	✓
Specialists					
Johann Lanz (*Pr.Sci.Nat.)*	Private	Agriculture and Soils Compliance Statement	✓	✓	✓
Corné Niemandt *(Pr.Sci.Nat.)* Samuel Laurence *(Pr.Sci.Nat.)*	Enviro-Insight cc	Terrestrial Biodiversity Assessment, Terrestrial Plant Species Compliance Statement, and Terrestrial Animal Species Compliance Statement	✓	✓	✓
Russell Tate *(Pr.Sci.Nat.)*	Tate Environmental Specialist Services (sub-contracted by Enviro-Insight)	Aquatic Biodiversity and Species Assessment	✓	✓	✓
Samuel Laurence *(Pr.Sci.Nat.)*	Enviro-Insight cc	Avifauna Impact Assessment	✓	✓	✓
Quinton Lawson (*SACAP, 3686*) Bernard Oberholzer (*SACLAP, 87018*)	QARC and BOLA	Visual Impact Assessment	✓	✓	✓
Dr Jayson Orton (*APHP: Member 43; ASAPA CRM Section: Member 233*)	ASHA Consulting (Pty) Ltd	Heritage Impact Assessment (Archaeology and Cultural Landscape)	✓	✓	✓
Dr John Almond *(PSSA and APHP Member)*	Natura Viva cc	Palaeontology	✓	✓	✓
Sue Reuther	SLR Consulting	Socio-Economic Impact Assessment	✓	✓	N/A
Annebet Krige *(Pr Eng)*	Sturgeon Consulting	Traffic Impact Assessment	✓	✓	N/A
Dale Barrow (*Pr.Sci.Nat.)* Hardy Luttig Louis Jonk (*Pr.Sci.Nat.)* Julian Conrad	GEOSS South Africa (PTY) Ltd	Geohydrology Assessment	✓	✓	N/A
Dale Barrow (*Pr.Sci.Nat.)* Hardy Luttig Louis Jonk (*Pr.Sci.Nat.)* Julian Conrad	GEOSS South Africa (PTY) Ltd	Geotechnical Letter of Professional Opinion	✓	✓	✓
Debbie Mitchell *(Pr Eng)*	Ishecon cc	Battery Storage High Level Safety, Health and Environment Risk Assessment	N/A	✓	N/A
Rohaida Abed *(Pr.Sci.Nat.; Registered EAP (2021/4067))* Lizande Kellerman *(Pr.Sci.Nat.)* Willan Adonis[1]	CSIR	Civil Aviation Site Sensitivity Verification	✓	✓	✓
Rohaida Abed *(Pr.Sci.Nat.; Registered EAP (2021/4067))* Lizande Kellerman *(Pr.Sci.Nat.)* Willan Adonis[2]	CSIR	Defence Site Sensitivity Verification	✓	N/A	N/A

[1] This staff member resigned from the CSIR at the end of December 2023.
[2] This staff member resigned from the CSIR at the end of December 2023.

The specialist assessments will be detailed during the EIA Phase and will comply with Appendix 6 of the 2014 NEMA EIA Regulations (as amended), or the Assessment Protocols published in GN 320 on March 2020; or the Assessment Protocols published in GN 1150 on October 2020. However, the BESS High Level Safety, Health and Environment Risk Assessment serves as a technical report and the aforementioned legislation will thus not be applicable.

STUDY AREA

The study area or preferred site for all the proposed Biesjesvlei Solar PV Facilities, BESS, 132 kV power lines, MTS and LILO and associated infrastructure (i.e., Projects 1 to 10) covers approximately 3 060 hectares (ha). These farm properties are listed in Table C, and they apply to all the projects addressed in this Scoping Report.

Table C: Farm portions and SG codes for the Study Area

FARM PORTION	SG CODE
Farm Benoni 534	F03100000000053400000
Remaining Extent of Farm Biesjespoort 521	F03100000000052100000
Farm Biesjesvlei 372	F03100000000037200000
Farm Klein Badfontein 369	F03100000000036900000
Farm Modderkuil 396	F03100000000039600000
Farm Paalland 373	F03100000000037300000
Remaining Extent of Farm Pompoenfontein 118	F03100000000011800000
Portion 1 of Farm Pompoenfontein 118	F03100000000011800001
Farm Ronde Bult 408	F03100000000040800000
Farm Salpetervlei 756	F03100000000075600000
Portion 1 of Farm Schoemanskraal 34	F03100000000003400001

As part of the Scoping and EIA Process, the full extent of the study area has been assessed by the specialists in order to identify environmental sensitivities and no-go areas. The preferred site serves as the study area for this Scoping and EIA Process. Therefore, the terms “site” and “study area” are used synonymously in the Scoping Report.

PROJECT DESCRIPTION

A summary of the key components of the proposed Biesjesvlei PV1 (Project 1) and technical information is described in Table D below.

Table D. Summary of the components and associated infrastructure for Biesjesvlei PV1 (Project 1)

Component	Description
Solar Field	
Type of Technology	Solar Photovoltaic (PV) Technology
Generation Capacity (Maximum Installed)	▪ Up to 350 MWdc
Total footprint that includes all associated infrastructure within the fenced off area of the PV facility (excluding access roads)	▪ Maximum 600 ha
PV Panel Structure (with the following possible tracking and mounting systems): ▪ Single Axis Tracking structures (aligned north-south); ▪ Fixed Axis Tracking (aligned east-west); ▪ Dual Axis Tracking (aligned east-west and north-south); ▪ Fixed Tilt Mounting Structure; or ▪ Bifacial Solar Modules.	▪ Height: Approximately 10 m (maximum)
Building Infrastructure	
Offices	▪ Maximum height: 7 m ▪ Footprint: 1000 m^2
Operational and maintenance (O&M) control centre	▪ Maximum height: 7 m ▪ Footprint: 500 m^2
Warehouse / workshop	▪ Maximum height: 7 m ▪ Footprint: 500 m^2
Ablution facilities	▪ Maximum height: 7 m ▪ Footprint: 50 m^2
Converter / Inverter stations	▪ Height: 2.5 m to 7 m (maximum) ▪ Footprint: 2500 m^2
Guard Houses	▪ Height: 3 m ▪ Footprint: 40 m^2
On-site substation and/or switching station. This will include the section that will be maintained by the Independent Power Producer (IPP).	▪ Footprint of the IPP Substation: Approximately 10 000 m^2 ▪ Height: 10 m

Component	Description
	▪ Capacity: 132 kV ▪ This section includes all the high voltage infrastructure leading up to the Point of Connection (i.e. the Project Applicant's section of the proposed on-site substation, which is also referred to the **PV Facility IPP Substation**).
Associated Infrastructure	
On-site medium voltage internal cables / power lines	▪ Placement: Underground or above ground ▪ Capacity: 33 kV ▪ Depth (if underground): Maximum depth of 1.6 m ▪ Height (if aboveground): Maximum height of 9 m
Underground low voltage cables or cable trays	▪ Depth: Maximum depth of 1.4 m
External Access Roads	▪ The study area can be accessed via various existing main roads and gravel roads. Specifically, three access route options are being considered: Access Route Option A, Option B and Option C, which are routed along the N6; S1262; and S119. Options A, B and C have different access points off the S119. Direct access to the proposed projects will be taken from the S119 along an existing farm access point, and thereafter new access roads will be developed within the study area, where they do not align with existing roads, or existing roads will be used where possible. Existing roads will be used as far as practically achievable. ▪ New Access Roads: Where new access roads are required within the study area, these will be 4 - 8 m wide. ▪ Existing Access Roads: Where existing roads are used within the study area, they may need to be upgraded, as described below. ▪ The Traffic Specialist has noted the following based on preliminary investigations: o The N6, S1262, and S119 are suitable and do not need to be upgraded. o The N6, S1262, and S119 are of a sufficient width to accommodate truck movement, however widening by more than 4 m or more than 6 m may be

Component	Description
	required at localised positions (i.e. intersections). Specifically, road widening by approximately 9 m will be required at the S1262 and S119 intersection. ○ Existing internal farm roads (local farm roads within the farm property boundaries) will need to be upgraded to accommodate the abnormal loads as required. This includes the following: ▪ Intersection S119 and Access Route Option A: Road widening by approximately 14 m (at the widest point) will be required. ▪ Intersection S119 and Access Route Option B: Road widening by approximately 7 m (at the widest point) will be required. ▪ Intersection S119 and Access Route Option C: Road widening by approximately 14 m (at the widest point) will be required. ▪ An existing bridge on the S119 will also need to be inspected by a Structural Engineer. ▪ The existing bridge on the existing internal farm road leading from Access Route Option A will most likely need to be rebuilt or realigned to minimise the turns that the abnormal loads need to navigate. Additional detail will be provided in the EIA Phase.
Internal roads	▪ Details: New internal gravel roads will need to be established within the fenced off area of the PV facility. ▪ Width: Up to 4 m
Fencing around the PV Facility Perimeter	▪ Type: Palisade or mesh or fully electrified ▪ Security: Access points will be managed and monitored by an appointed security service provider. ▪ Height: Between 2 - 3 m

Component	Description
Panel maintenance and cleaning area	▪ A dedicated panel maintenance and cleaning area will be required on site during the operational phase. ▪ Details will be confirmed during the EIA Phase.
Storm water channels	▪ Details to be confirmed once the Engineering, Procurement and Construction (EPC) contractor has been selected and the design is finalised. Where necessary, a detailed storm water management plan would need to be developed.
Work area during the construction phase (i.e. laydown area)	▪ Footprint: Up to 13 ha.
Water Requirements	▪ Approximately 8 520 m^3 to 12 000 m^3 of water is estimated to be required per year for the construction phase. ▪ Approximately 10 000 m^3 to 16 000 m^3 of water is estimated to be required per year for the operational phase. ▪ Water requirements during the decommissioning phase are expected to be the same as the construction phase. ▪ Potential sources: Existing boreholes on site or from the Local Municipality via trucks.
Construction Period	▪ 12 – 24 months
Operational Period	▪ Once the commercial operation date is achieved, the proposed facility will generate electricity for a minimum period of 20 to 30 years.

A summary of the key components of the proposed Biesjesvlei BESS 1 (Project 4) and technical information is described in Table E below.

Table E. Summary of the components and associated infrastructure for Biesjesvlei BESS 1 (Project 4)

Component	Description
Battery Energy Storage System (BESS)	
BESS Area/Facility	▪ Technology: Lithium-Ion BESS ▪ Total Footprint: Approximately 10 ha ▪ Height: Between 5 m and 10 m ▪ The BESS area will include the following sub-components:

Component	Description
	○ BESS Units; ○ BESS Laydown Area; ○ BESS IPP Substation; ○ Laydown area for the BESS IPP Substation; ○ BESS Operational and Maintenance (O&M) Office, including Ablutions; ○ Access Roads; ○ Internal Roads; ○ MV cables between BESS Units; ○ Transformer at the BESS IPP Substation; ○ Internal cables; and ○ Overhead cables at the BESS IPP Substation; ○ Fencing and Security; and ○ Parking Area.
BESS Sub-Components *(to be located within the 10 ha area of the overall BESS Facility)*	
BESS Units	▪ This will include battery packs or containers, with an area of approximately 6 ha, and height up to 5 m.
BESS Laydown Area	▪ Footprint: Approximately 1.25 ha
BESS IPP Substation	▪ Footprint: Approximately 1 ha ▪ Height: Up to 15 m ▪ Capacity: 33 kV to 132 kV ▪ This will be maintained by the IPP.
Laydown Area for the BESS IPP Substation	▪ Footprint: Approximately 0.5 ha
BESS Operational and Maintenance (O&M) Office	▪ Maximum height: Up to 5 m ▪ Footprint: Approximately 0.5 ha ▪ The BESS O&M Office will also include Ablution facilities.
External Access Roads	▪ Refer to Table D for a description on the access roads.
Internal Roads	▪ Details: New internal gravel roads will need to be established within the BESS facility area. ▪ Width: Up to 4 m
Medium Voltage (MV) cables between the BESS Units	▪ Placement: Buried/Ducted ▪ Capacity: Ranges from 1 kV up to 33 kV ▪ Depth: Up to 2 m
Transformer at the BESS IPP Substation	▪ Placement: Buried/Ducted ▪ Capacity: Ranges above 33 kV

Component	Description
	▪ Depth/Height: Up to 2 m
Internal cables in the BESS facility	▪ Placement: Buried / ducted ▪ Capacity: Ranges from 1 kV up to 33 kV ▪ Depth: Up to 2 m
Overhead cables at the BESS IPP Substation	▪ Placement: Overhead ▪ Capacity: Ranges above 33 kV ▪ Height: Up to 12 m
Fencing of the BESS Facility and Security	▪ Type: Palisade or mesh or fully electrified ▪ Height: Up to 5 m ▪ Security: Access to the BESS Facility will be managed and monitored by an appointed security service provider.
Parking Area	▪ A parking area will be established at the BESS Facility for staff
Storm water channels	▪ Details to be confirmed once the Engineering, Procurement and Construction (EPC) contractor has been selected and the design is finalised. Where necessary, a detailed storm water management plan would need to be developed.
Water Requirements	▪ Approximately 350 m^3 to 450 m^3 of water is estimated to be required per year for the construction phase. ▪ Approximately 200 m^3 to 300 m^3 of water is estimated to be required per year for the operational phase. ▪ Water requirements during the decommissioning phase are expected to be the same as the construction phase. ▪ Potential sources: Existing boreholes on site or from the Local Municipality via trucks.
Construction Period	▪ 12 - 24 months
Operational Period	▪ Once the commercial operation date is achieved, the proposed BESS will store and dispatch electricity for a minimum period of 20 to 30 years.

A summary of the key components of the proposed Biesjesvlei EGI 1 (Project 7) and technical information is described in Table F below.

Table F. Summary of the components and associated infrastructure for Biesjesvlei EGI 1 (Project 7)

Component	Description
On-site substation and/or switching station. This will include the section that will be transferred from the Independent Power Producer (IPP) to Eskom.	▪ Footprint: Up to 10 000 m^2 ▪ Height: Up to 15 m ▪ Capacity: 132 kV ▪ The section includes all the high voltage infrastructure extending from the Point of Connection (i.e. Eskom's section of the proposed on-site substation, which is also referred to as the **Switching Station**).
132 kV Overhead Power Line	▪ The power line will be routed from the on-site substation to the proposed MTS. ▪ Height: Up to 37 m ▪ Length: Up to 2 km ▪ Servitude: 40 m wide ▪ Pylon specifications: o Type: Lattice structures or monopoles. o Tower: Self-supporting and Angle Strain. o Foundation: The size of the footprint area for the base of the tower foundation will range from 0.36 m^2 to 2.25 m^2. The minimum working area required around a structure position is 20 m x 20 m. o Span Length: 200 m – 300 m
Service Road	▪ Details: A new gravel service road will need to be established below the power line. ▪ Width: Up to 4 m
External Access Roads	▪ Refer to Table D for a description on the access roads.
Storm water channels	▪ Details to be confirmed once the Engineering, Procurement and Construction (EPC) contractor has been selected and the design is finalised.

Component	Description
	Where necessary, a detailed storm water management plan would need to be developed.
Work area during the construction phase (i.e. laydown area)	▪ Footprint: 0.5 ha to 1 ha
Water Requirements	▪ Approximately 100 m^3 of water is estimated to be required per year for the construction phase. ▪ Water requirements during the decommissioning phase are expected to be the same as the construction phase. ▪ Potential sources: Existing boreholes on site or from the Local Municipality via trucks.
Construction Period	▪ 6 - 24 months

POTENTIAL ISSUES AND HIGH-LEVEL IMPACT ASSESSMENT

Potential key preliminary issues and impacts associated with the proposed projects, and preliminary mitigation measures have been identified by the specialist team for the Scoping Phase. This is based on an evaluation of the status quo of the receiving environment, by the specialists, either through desktop assessments or site investigations, where relevant and required. The impact ratings and mitigation measures are high-level for the purposes of Scoping, and, where necessary, will be confirmed and detailed during the EIA Phase.

These preliminary key potential issues and direct impacts are summarised in Table G below and are included in Chapter 6 of this Scoping Report. Additional issues may be raised during the Scoping Phase, which could potentially be assessed during the EIA Phase. The Terms of Reference for the various Specialist Assessments and Inputs are included in Chapter 7 of this Scoping Report.

At the Scoping Phase, based on the preliminary impacts described below, there are no negative impacts that are rated as Very High significance after mitigation. Overall, it can be concluded that the effect of potential impacts can be limited or reduced to acceptable levels through avoidance, minimisation and the implementation of appropriate mitigation measures and management actions during the construction, operational and decommissioning phases.

Table G. Summary of Issues to be addressed during the EIA Phase as part of the Specialist Assessments / Inputs[3].

Specialist Assessment / Input	Key Issues / Impacts to be addressed in the EIA Phase	Project 1 (Biesjesvlei PV1)	Project 4 (Biesjesvlei BESS 1)	Project 7 (Biesjesvlei EGI 1)
Agriculture	**Construction, Operational and Decommissioning Phases**			
	▪ Loss of agricultural potential by occupation of land; ▪ Loss of agricultural potential by soil degradation; ▪ Loss of agricultural potential by dust generation; ▪ Increased financial security for farming operations (*positive impact*); and ▪ Improved security against stock theft and other crime due to the presence of security infrastructure and security personnel (*positive impact*).	✓	✓	✓
Terrestrial Biodiversity and Species (including Animal and Plant Species)	**Construction Phase**			
	▪ Habitat loss and fragmentation.	✓	✓	✓
	▪ Loss of protected species; ▪ Increased alien invasive species; ▪ Increased erosion and soil compaction; and ▪ Littering and general pollution.	✓		✓
	Operational Phase			
	▪ Increased alien invasive species.	✓	✓	✓
	▪ Loss of species composition and diversity; and ▪ Littering and general pollution.	✓		✓
	Decommissioning Phase			
	▪ Loss of habitat; and ▪ Increased alien invasive species	✓	✓	✓
Aquatic Biodiversity and Species	**Construction, Operational and Decommissioning Phases**			
	▪ Habitat Quality Degradation; ▪ Water Quality Degradation; and	✓	✓	✓

[3] Impacts / issues in the table are all classified as negative, except where specified as positive.

Specialist Assessment / Input	Key Issues / Impacts to be addressed in the EIA Phase	Project 1 (Biesjesvlei PV1)	Project 4 (Biesjesvlei BESS 1)	Project 7 (Biesjesvlei EGI 1)
	▪ Aquatic Habitat Connectivity Loss.			
Avifauna	**Construction Phase**			
	▪ Habitat destruction; ▪ Disturbance of bird roosts; and ▪ Disturbance due to noise such as machinery movements and construction activities.	✓	✓	
	▪ Disturbance of foraging and breeding behaviours of birds due to noise, dust and lighting; and ▪ Loss of habitat due to clearing, trenching, alteration and exclusion from previously accessible habitats.			✓
	Operational Phase			
	▪ Disturbance due to noise such as, machinery movements and maintenance operations; ▪ Loss of Bird Foraging Habitat; ▪ Attraction to the facility; and ▪ Chemical pollution spills.	✓	✓	
	▪ Bird mortalities; and ▪ Disruption of bird migratory pathways during the operational phase.	✓		
	▪ Continued disturbance due to operational activities (use of vehicles, lights etc.); ▪ Loss of habitat due to altered and excluded habitats and threat of fire; ▪ Direct mortality from electrocution and collision with infrastructure (e.g. fences, overhead power lines); ▪ Attraction to the facility exacerbating potential impacts.			✓
	Decommissioning Phase			
	▪ Disruption of bird migratory pathways during the decommissioning phase.	✓		

Specialist Assessment / Input	Key Issues / Impacts to be addressed in the EIA Phase	Project 1 (Biesjesvlei PV1)	Project 4 (Biesjesvlei BESS 1)	Project 7 (Biesjesvlei EGI 1)
	▪ Habitat loss reclamation from rehabilitation activities (*positive impact*).	✓		✓
	▪ Disturbance of foraging and breeding behaviours of birds due to noise, dust and lighting.		✓	
	▪ Continued disturbance due to decommissioning activities (use of vehicles, lights etc.); ▪ Removal of power lines to promote safe passage (lowering collision risk) through the site and avoiding attraction by birds perching and nesting (*positive impact*).			✓
Visual	**Construction Phase**			
	▪ Potential effect of dust and noise from trucks and construction machinery during the construction period, and the effect of this on nearby farmsteads and visitors to the area; and ▪ Potential visual effect of haul roads, access roads, stockpiles and construction camps in the visually exposed landscape.	✓	✓	✓
	Operational Phase			
	▪ Potential visual intrusion of the facility and all associated infrastructure on receptors; and ▪ Potential visual impact of an industrial type of activity on the pastoral / rural character and sense of place of the area.	✓	✓	✓
	Decommissioning Phase			
	▪ Potential visual effect of any remaining structures, platforms and disused roads on the landscape.	✓	✓	✓
Heritage (including Archaeology and Cultural Landscape)	**Construction Phase**			
	▪ Damage or destruction of archaeological materials; ▪ Damage or destruction of graves; ▪ Damage to built heritage resources; and	✓	✓	✓

Specialist Assessment / Input	Key Issues / Impacts to be addressed in the EIA Phase	Project 1 (Biesjesvlei PV1)	Project 4 (Biesjesvlei BESS 1)	Project 7 (Biesjesvlei EGI 1)
	▪ Intrusion of the facility, equipment and all associated infrastructure into the landscape.			
	Operational and Decommissioning Phases			
	▪ Intrusion of the facility, equipment and all associated infrastructure into the landscape.	✓	✓	✓
Palaeontology	Note that a palaeontological impact assessment is not required. Refer to the Palaeontology Site Sensitivity Verification (SSV) in Appendix E.7 of this Scoping Report for additional information on the palaeontology within the study area, as well as feedback on the motivation for no further palaeontology assessments being required for the proposed projects.			
Socio-Economic	**Construction Phase**			
	▪ Capital investment contributing to the national, regional and local economy (*positive impact*); ▪ Generation of employment, income and skills (*positive impact*); ▪ Social disruption and change in social dynamics; and ▪ Reduced quality of life and increased risks due to construction near residences.	✓	✓	
	Operational Phase			
	▪ Operational investment contributing to the national, regional and local economy (*positive impact*); ▪ Generation of employment, income and skills (*positive impact*); ▪ Increased community prosperity through contributions and income from the proposed projects (*positive impact*); and ▪ Increased South African power generation reducing the probability of load shedding (*positive impact*).	✓	✓	
	Decommissioning Phase			
	▪ Reduced employment and Funding.	✓	✓	

Specialist Assessment / Input	Key Issues / Impacts to be addressed in the EIA Phase	Project 1 (Biesjesvlei PV1)	Project 4 (Biesjesvlei BESS 1)	Project 7 (Biesjesvlei EGI 1)
Traffic	**Construction and Decommissioning Phases**			
	▪ Congestion and delays on road network; ▪ Potential impact on traffic safety and increase in accidents with other vehicles and animals; ▪ Condition of road surface; ▪ Dust Pollution; and ▪ Noise Pollution.	✓	✓	
	Operational Phase			
	The traffic generated during the operational phase will not have a significant impact on the surrounding road network.			
Geohydrology	**Construction Phase**			
	▪ Lowering of groundwater levels as a result of over-abstraction; ▪ Accidental oil spillage / fuel leakage; and ▪ Foundation construction occurring below the water table potentially impacting on ground water quality.	✓	✓	
	Operational Phase			
	▪ Lowering of groundwater levels as a result of over-abstraction.	✓	✓	
	▪ Potential impact on groundwater quality as a result of using cleaning agents for solar panel cleaning.	✓		
	▪ Potential impact on groundwater quality as a result of potential spillage associated with the Battery Energy Storage System (BESS).		✓	
	Decommissioning Phase			
	▪ Accidental oil spillage / fuel leakage; and ▪ Lowering of groundwater levels as a result of over-abstraction.	✓	✓	
Geotechnical	**Construction Phase**			
	▪ Displacement of geologic material.	✓	✓	✓

Specialist Assessment / Input	Key Issues / Impacts to be addressed in the EIA Phase	Project 1 (Biesjesvlei PV1)	Project 4 (Biesjesvlei BESS 1)	Project 7 (Biesjesvlei EGI 1)
	Construction, Operational and Decommissioning Phases			
	▪ Contamination of subsoils and loss of topsoil.	✓	✓	✓
	Operational and Decommissioning Phases			
	▪ Increased unnatural hard surfaces yielding increased runoff, potentially increasing erosion.	✓	✓	✓
High-level Safety, Health and Environment (SHE) Risk Assessment for the BESS	Note that a high-level SHE Risk Assessment has been commissioned for the proposed BESS project. It is a technical study, and formal impact assessments are not required. The study will be finalised during the EIA Phase.			
Civil Aviation	Note that there are no impacts with respect to Civil Aviation as confirmed through the Site Sensitivity Verification included in Appendix E.13 of the Scoping Report.			
Defence	Note that there are no impacts with respect to Defence as confirmed through the Site Sensitivity Verification included in Appendix E.14 of the Scoping Report.			