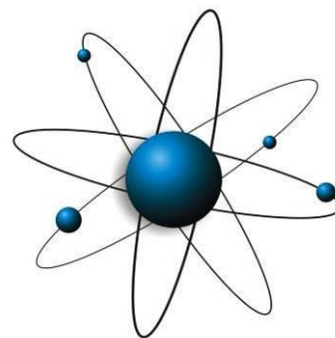


BACKGROUND INFORMATION **DOCUMENT**

FOR

**ESTABLISHMENT OF BLACK ROCK
SOLAR PV FACILITY,
HOTAZEL, NORTHERN CAPE PROVINCE**



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ASSMANG

MANGANESE

BLACK ROCK MINE OPERATIONS



PROJECT INFORMATION SHEET

PROJECT:

ESTABLISHMENT OF BLACK ROCK SOLAR PV FACILITY, HOTAZEL, NORTHERN CAPE PROVINCE

APPLICANT:

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Department of Mineral Resources and Energy (DMRE)

DMRE Reference Number: Pending

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1 INTRODUCTION

Assmang (Pty) Ltd mines manganese ore in the Black Rock area of the Kalahari, in the Northern Cape Province. The ore is mined from the Kalahari Manganese field. The Black Rock Mine Operations (BRMO) are approximately 60 km north-west of the town of Kuruman, and approximately 6 km (to the nearest BRMO mining activities) from the town of Hotazel.

BRMO proposes to establish a Solar PV Facility, hereafter referred to as the Black Rock Solar PV Facility, and associated infrastructure.

The proposed facility will provide power to BRMO's operations, and will have a maximum generating capacity of 100MW. The project will be built in phases with the first phase being 44MW, which will include:

- A solar PV plant.
- 2 substations and electrical distribution infrastructure.
- Battery storage facilities.

Future phases will be scheduled as applicable after completion and commissioning of the first phase.

The proposed solar facility is to be located on the Remaining Extent of Farm Klipling 271 and will have a development footprint of approximately 450ha in extent, with additional infrastructure for distributing the electricity to the BRMO's operations. This infrastructure will tie in to BRMO's existing infrastructure.

BRMO is the owner of all the properties on which the proposed project will occur. Although overhead distribution will span the Gamagara River, there will be no physical construction or activities within the flood plain of the river or a 32m buffer measured from the edge of the river.

The climate, relief, the size of the affected property, and the availability of land for the development, are favourable for the establishment of a solar facility.

The proposed development includes activities listed in terms of the National Environmental Management Act (Act 107 of 1998), and thus BRMO has applied for an Environmental Authorisation in terms of the National Environmental Management Act. A scoping and environmental impact assessment (EIA) process must be undertaken, in accordance with the environmental impact assessment regulations GN. R 982 of 2014 as amended, to authorise the proposed activities.

1.1 REGIONAL LOCATION

BRMO is located approximately 60 km north-west of the town of Kuruman and 12 kilometres north-west of the town of Hotazel (Figure 1-1). The proposed site for the Black Rock Solar PV Facility will be located on the Remaining Extent of Farm Klipling 271. The site proposed boundary is approximately 1.5 km north west from the nearest Hotazel infrastructure, and approximately 2.5km from centre to centre from the Hotazel town.

The proposed project site falls within the jurisdiction of the John Taolo Gaetsewe District Municipality, and the Joe Morolong Local Municipality.

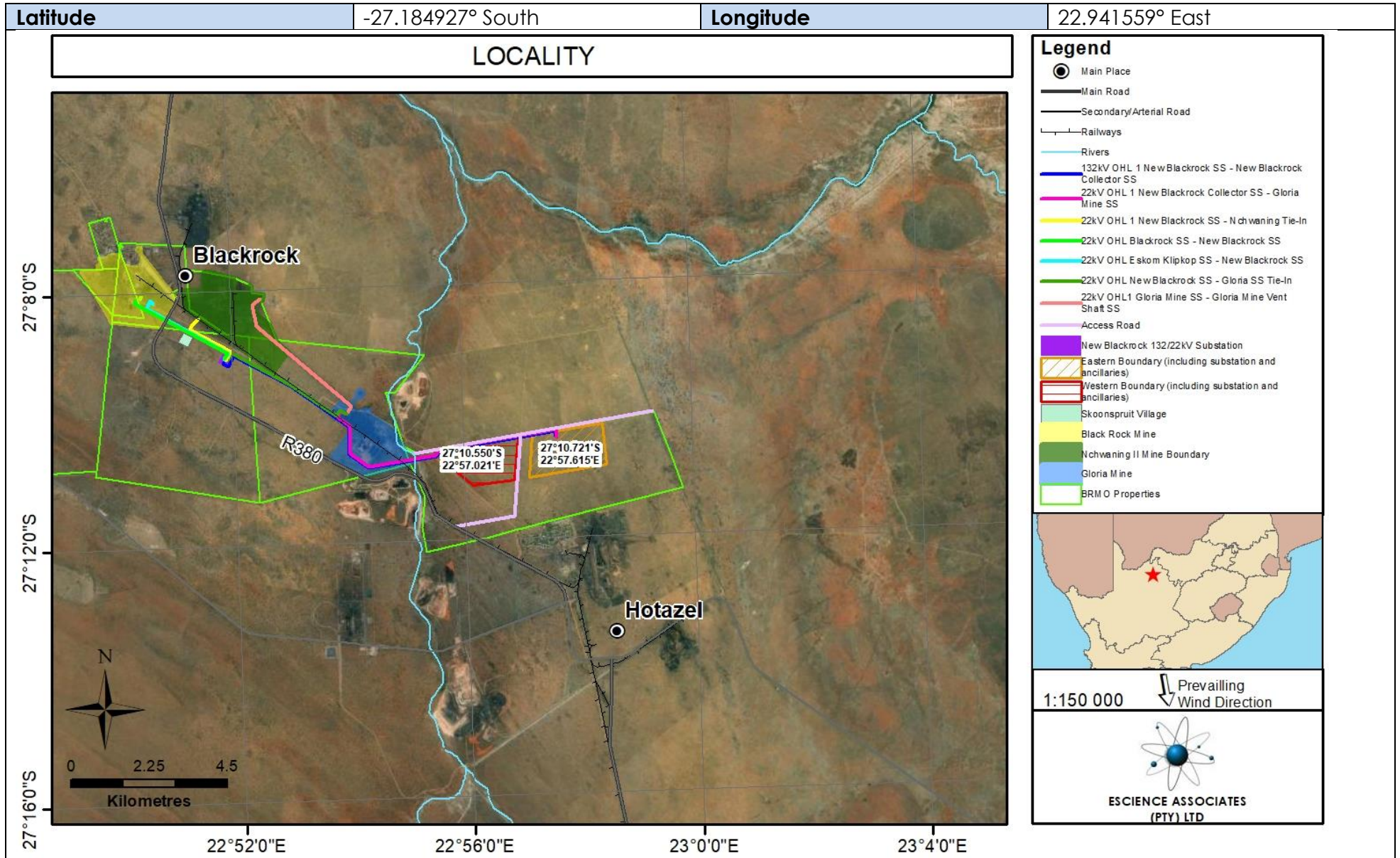


Figure 1-1: Location of the Black Rock Solar PV Facility

1.2 ADMINISTRATIVE INFORMATION

The following section and associated set of tables, provides pertinent administrative information pertaining to Black Rock Solar PV Facility Applicant, as well as the appointed environmental assessment practitioner.

Table 1-1: Name and Address of Solar Facility	
Owner and Name of Mine	Assmang (Pty) Limited, Black Rock Mine Operations
Company Registration	1935/007343/06
Physical Address	Black Rock Mine Operations, Santoy, Northern Cape
Postal Address	PO Box 187, Santoy, Northern Cape, 8491
Telephone	053 751 5260
Fax	053 751 5555
Senior General Manager	Wilhemina Ngcobo

Table 1-2: Details of EAP	
Name of Company	EScience Associates (Pty) Ltd.
EAP	Lehlogonolo Prudence Chuene EAPASA Registered EAP
Contact Person	Abdul Ebrahim
Postal Address	PO Box 2950, Saxonwold, Johannesburg, 2132,
Physical Address	9 Victoria Street, Oaklands, Johannesburg, 2192
Telephone	011 718 6380
Fax	072 268 1119
Email	abdul@escience.co.za
EAP Qualifications	B.Sc. (Hons) Environmental and Resource Studies
Curriculum Vitae	Refer to Appendix 1

2 DESCRIPTION OF CURRENT LAND USE AND ACTIVITIES



The affected properties where the Black Rock solar PV facility and associated distribution infrastructure will be established are owned by the applicant (Assmang (Pty) Ltd). The region surrounding the proposed development is dominated by mining, and agricultural (generally livestock production) land uses (Refer to Figure 2-2).





A basic summary of nearby activities and built-up areas is presented in Table 2-1 and Table 2-2.

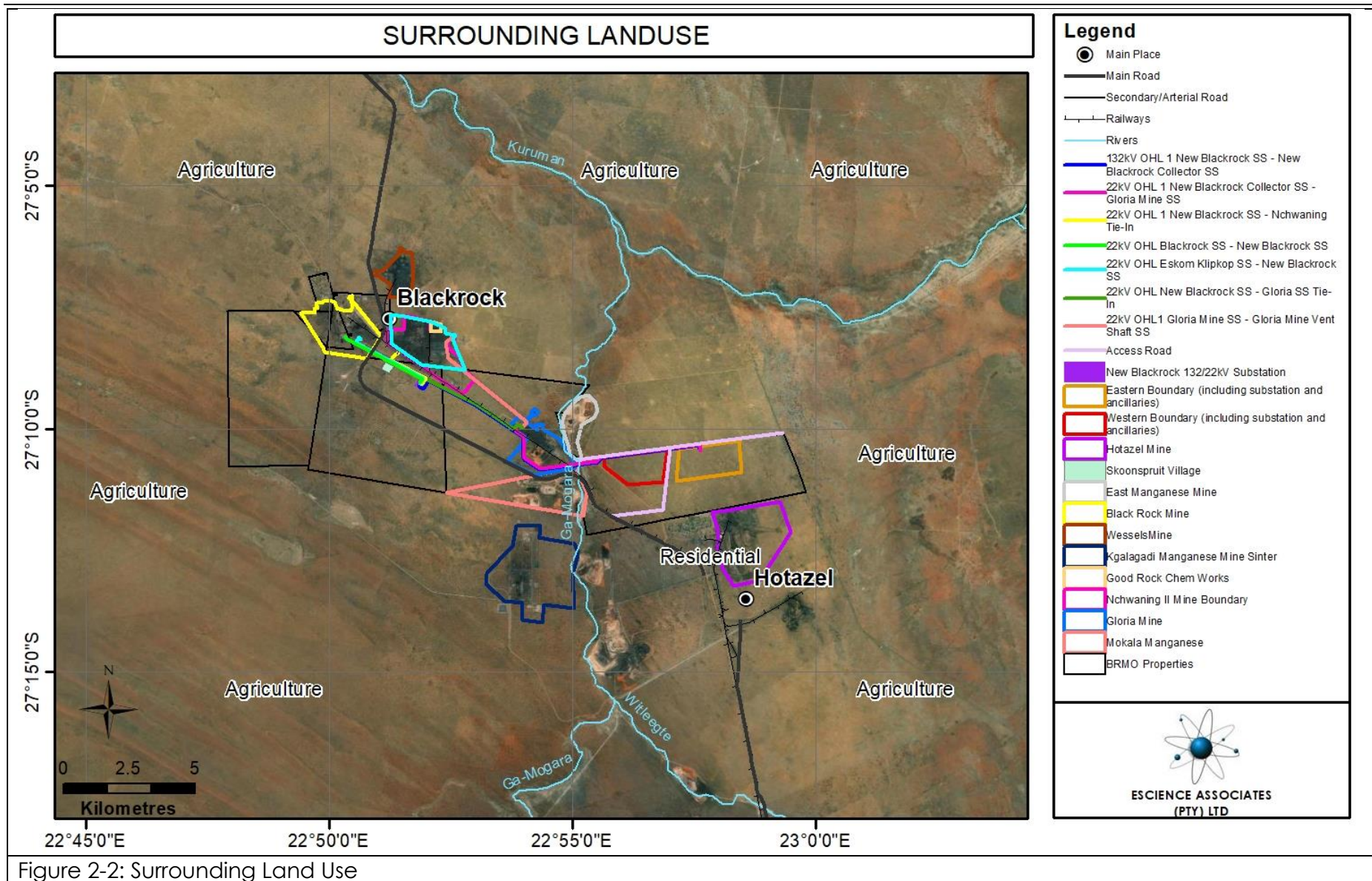
Table 2-1: Neighbouring Mining/Industrial Activity/ies	
Mine/Industry	Approximate distance and direction relative to the solar site boundary
BRMO surface operations	1.5 km west
East Manganese Mine	1.5 km north west
Mokala Manganese Mine	1.5 km east
South 32 Wessels Manganese Mine	9 km north west
Kalagadi Manganese Mine	3.5 km south east
South 32 Hotazel Manganese Mine	1.5 km south east
Good Rock (Pty) Ltd	8 km north west

Table 2-2: Neighbouring Towns	
Town	Approximate distance and direction from the centre of the site
Hotazel	2.5 km south east
Kuruman	80 km south east
Upington	267 km south west
Kimberley	320 km south east

The land where the solar PV facility is proposed to be established is currently used by BRMO for low density livestock rearing on a lease basis. The land is largely undeveloped with exception of fencing, and isolated farming facilities, and an existing Eskom overhead powerline running north to south through the farm, refer Figure 2-1 below.

	
Typical view of undeveloped sparsely vegetated areas within the site.	View from Eskom powerline also representative of areas with denser vegetation.

	
<p>Derelict farmhouse</p>	<p>Old cattle kraal</p>
	
<p>Gloria Mine as viewed from the north western boundary of the farm Kipling.</p>	<p>Mokala Mine overburden stockpiles also viewed from the north western boundary of the farm Kipling.</p>
<p>Figure 2-1: General Photos of the site and surrounds</p>	



3 DESCRIPTION OF PROPOSED ACTIVITIES

The general descriptions herein are intended to convey a broad understanding of the activities associated with the proposed Block Rock Solar Facility development.

3.1 SCOPE OF THE PROPOSED ACTIVITIES

BRMO proposes to construct and operate a solar power generation facility to supply its operations, with the primary aims of:

- Offsetting electricity grid supply risks and escalating costs.
- Reducing BRMO's carbon footprint with a long term view to net carbon neutrality.

The project will be built in phases with the first phase being 44MW, which will include:

- A solar PV plant.
- 2 substations and electrical distribution infrastructure.
- Battery storage facilities.

Future phases will be scheduled as applicable after completion and commissioning of the first phase. The total generation capacity applied for is 100MW.

The proposed solar facility is to be located on the Remaining Extent of Farm Klipling 271 and will have a development footprint of approximately 450ha in extent, with additional infrastructure for distributing the electricity to the BRMO's operations. This infrastructure will tie in to BRMO's existing electrical distribution infrastructure.

The project will include the following:

- Surveying and assessment of the proposed footprint;
- Vegetation clearance and establishment of access roads;
- Site establishment and laydown areas;
- Erection of fencing and access control;
- Striping of topsoil to be stockpiled where necessary;
- Transporting of materials to site;
- Excavations and erection of the proposed infrastructure;
- Establishment and connection of overhead distribution lines substations;
- Establishment of Battery Energy Storage System (BESS)

The general proposed layout is illustrated in Figure 3-1 below.

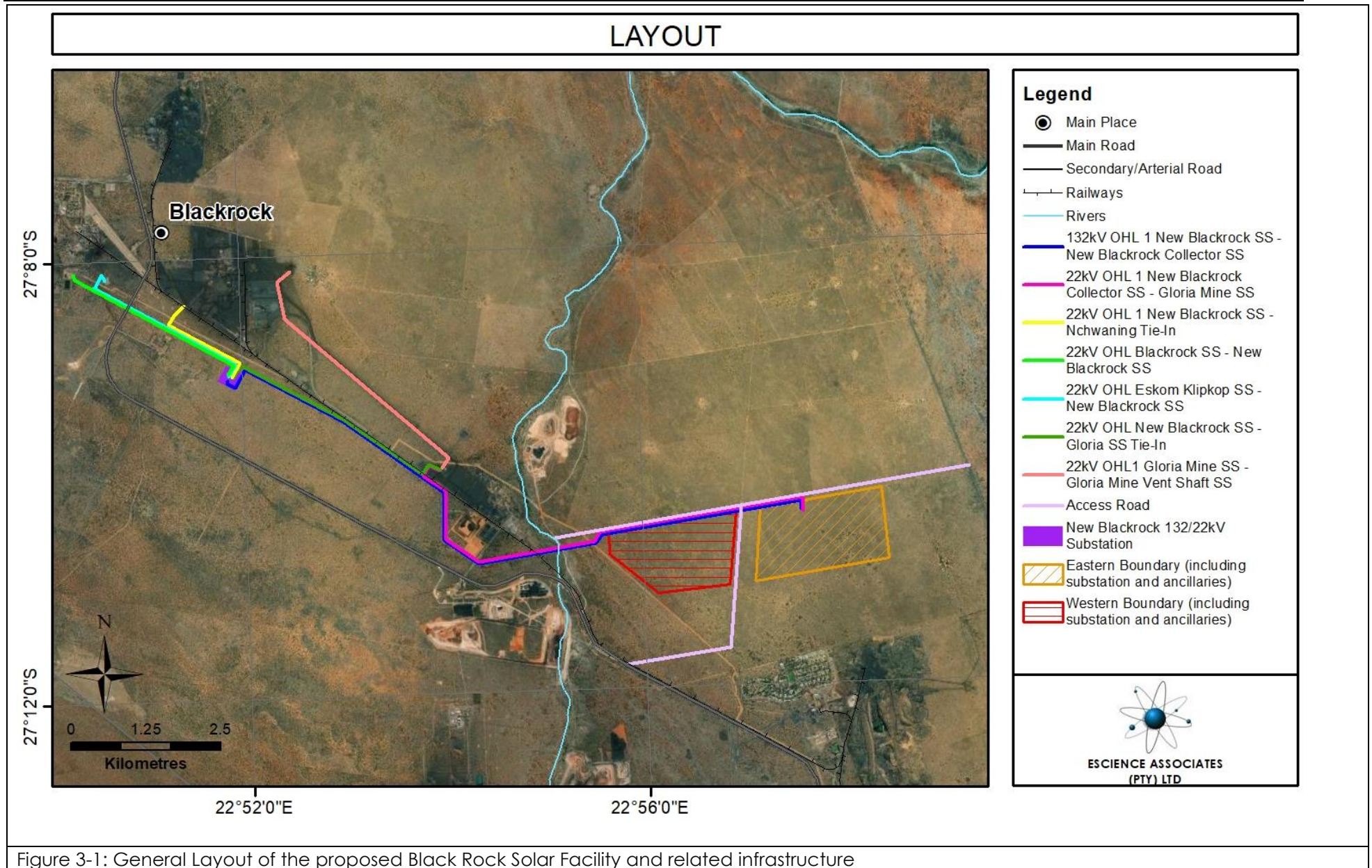


Figure 3-1: General Layout of the proposed Black Rock Solar Facility and related infrastructure

3.1.1 CONSTRUCTION PHASE

The construction phase will broadly consist of:

- Erection of fences and access control;
- Clearing of vegetation and establishment of roads, contractor laydown areas and project service facilities;
- Stripping and stockpiling of topsoil where required;
- Excavations of foundations for support where required;
- Erection of solar PV generation and distribution facilities (including panels and collector substations);
- Erection of overhead lines;
- Establishment of a new substation to tie in overhead lines and existing distribution infrastructure;
- Establishment of a battery storage facility;
- Removal of construction facilities and rehabilitation of disturbed areas, where applicable, at the end of construction phase.

3.1.2 OPERATIONAL PHASE

The operational phase will consist of:

- Operation of the facilities;
- Security and access control;
- Periodic maintenance and inspection of the panels;
- Cleaning of panels;
- Administrative functions.

3.1.3 CLOSURE AND DECOMMISSIONING PHASE

The current life of mine is expected to exceed 25 years. The PV installations are anticipated to have an operational life of at least 25 years before panels may need to be replaced.

Replacement of the PV panels, after 25 years or more of operational life, will entail:

- Removal of the panels and replacement.
- Transporting of the panels to a recycling facility where the recyclable components can be recycled, and disposal of those components which are not recyclable.

Decommissioning of the facilities at end of life of the mine will entail:

- Removal of the panels and replacement.
- Transporting of the panels to a recycling facility where the recyclable components can be recycled, and disposal of those components which are not recyclable.
- Disassembly of supporting infrastructure and recycling of the recyclable components (e.g. steel and electrical cabling);
- Following the removal of all onsite components, the site will need to be rehabilitated.
- Removal of foundations and disposal or reuse of rubble;

- Ripping and scarifying of roads, and other compacted footprints;
- Depositing of subsoil and topsoil, on the exposed surfaces; and
- Rehabilitation and aftercare.

3.1.4 ENVIRONMENTAL AUTHORISATION

The proposed development requires an Environmental Authorisation from the competent authority, in this case the Department of Mineral Resources and Energy (DMRE). Section 24(1) of NEMA requires applicants to consider, investigate, assess and report the potential environmental impact of these activities. The requirements for the investigation, assessment and communication of potential environmental impacts are contained in the so-called EIA regulations (currently GN. R 982:2014 amended by GN. R 326:2017). A Scoping and Environmental Impact Assessment process is required.

The listed activities relevant to the proposed development are presented in Table 3-1. This is a preliminary list and may be amended as more detailed information becomes available; however, the list must be finalised prior to submission of the application for environmental authorisation. A conservative approach has been taken in identifying the relevant listed activities, and some of these may be confirmed to not be relevant.

Table 3-1: NEMA Listed Activities
GN.R 327 – Listing Notice 1, as amended
<p>Activity No. 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 275kV or more.</p> <p>REASON: A 132kV overhead line is also proposed to connect the Black Rock solar PV facility from the onsite collector substation to the proposed new Mine Substation.</p>
<p>Activity No. 14: The development and related operation of facilities and infrastructure, for the storage, or for the storage and handling, of a dangerous good, where such storage occurs in containers with a combined capacity of 80 cubic metres or more but not exceeding 500 cubic metres.</p> <p>REASON: The development of the Black Rock solar PV facility may require the construction and operation of facilities and infrastructures for the storage and handling of dangerous chemicals (combustible and flammable liquids, such as oils, lubricants, etc).</p>
<p>Activity No. 24(ii): The development of a road – (ii) with a reserve wider than 13.5m, or where no reserve exists where the road is wider than 8m.</p> <p>REASON: The facility will require construction of new access and maintenance roads in areas where no road reserve exists to provide access to the facility. These may exceed 8m in width.</p>
<p>Activity No. 56(ii): The widening of a road by more than 6 metres, or the lengthening of a road by more than 1 kilometre (ii) where no reserve exists, where the existing road is wider than 8 metres.</p>

Table 3-1: NEMA Listed Activities

REASON: Upgrades of existing roads may be required.

GN.R 325 – Listing Notice 2, as amended

Activity No. 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.

REASON: The Black Rock Solar PV Facility is situated outside urban area and will use solar power technology and have a maximum generating capacity of 100MW.

Activity No. 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.

REASON: The proposed activity is expected to require the clearance of land exceeding 20ha of indigenous vegetation.