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Social Impact Assessors

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Attention : Nondumiso Bulunga

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Proposed amendment to the Vaal River Solar 1 PV Facility near Orkney in the North West Province (DEA ref.: 12/12/20/2513/2)

Savannah Environmental compiled an amendment application for the Vaal River Solar 1 PV Facility near Orkney in the North West Province, which was authorised in October 2012.

Amendments

The Applicant is now requesting the following Amendments to the PV facility:

- To amend the authorised solar PV capacity with no adjustment to the PV panel height and development footprint of the facility from that as authorised.
- Inclusion of Battery Energy Storage System (BESS) into the project description.
- An extension of the validity of the Environmental Authorisation.

Social Baseline

The original Social Impact Assessment, undertaken in March 2012 by Integrated Rural and Urban Development Enterprise (Pty) Ltd, was based on Statistics South Africa's Census 2001 data. Current data available from Stats SA is based on Census 2011, with various updates that are applicable at various levels, such as the Mid-year Population Estimates released on 19th July 2021, and Quarterly Labour Force Survey Quarter 4: 2021, released on 29 March 2022. Notwithstanding this, and considering the environment in which the project is situated being a property previously used for mining, and is surrounded by mine dumps as illustrated in **Figure 1**, it is unlikely that the social baseline would be significantly differ to that assessed in the original Social Impact Assessment to the extent that it would significantly change the impacts identified during that study.

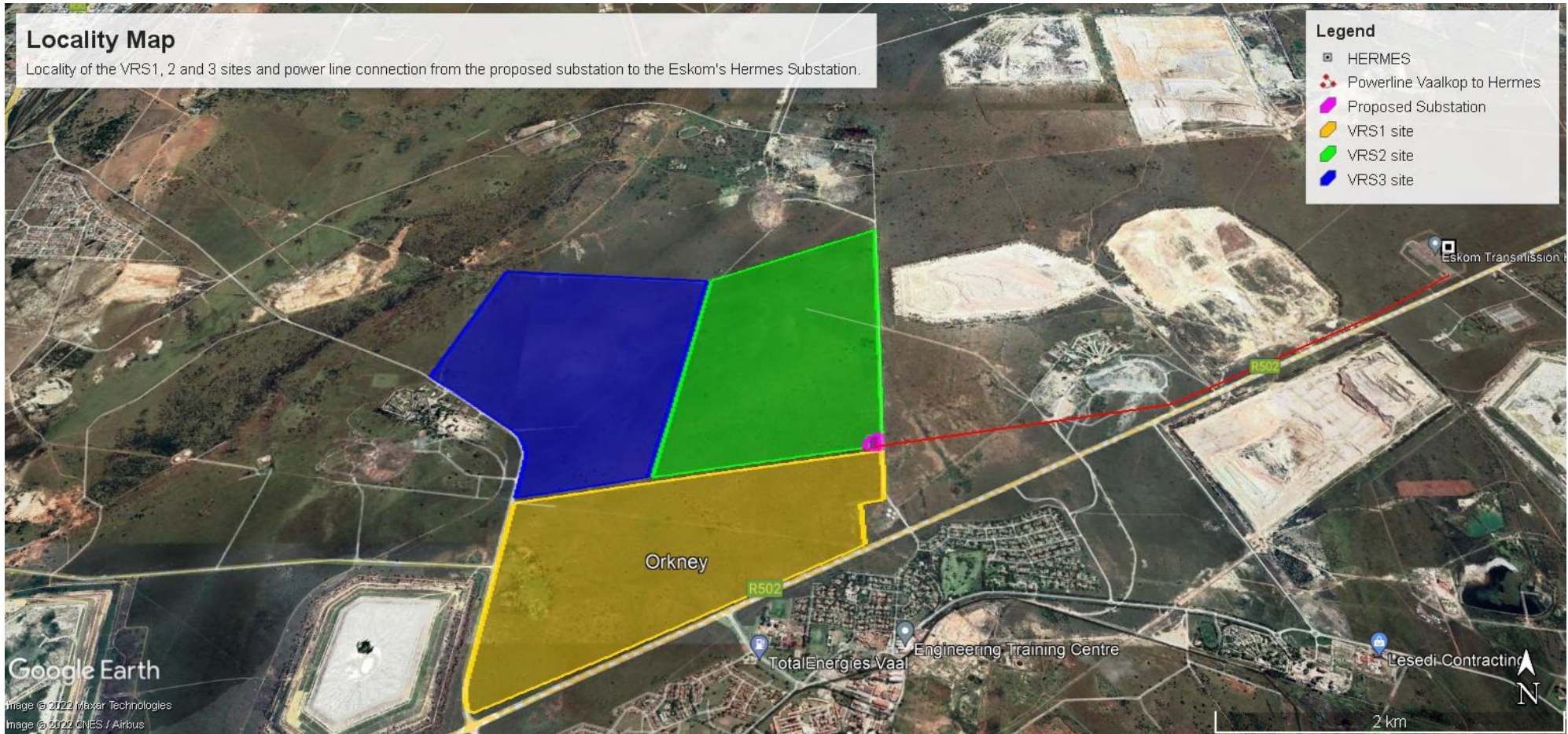


Figure 1 Locality map

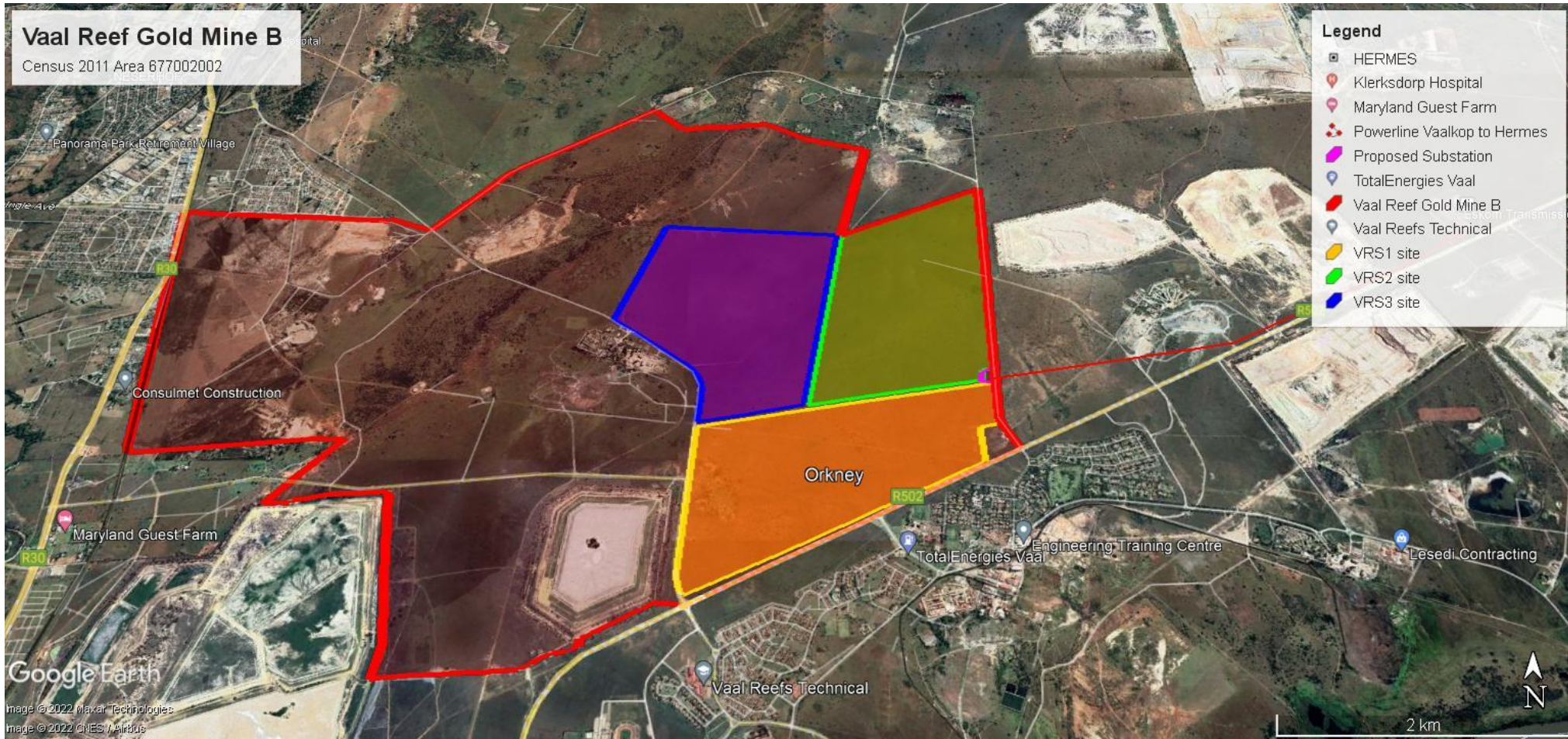


Figure 2 Census 2011 – Vaal Reef Gold Mine B Area 677002002

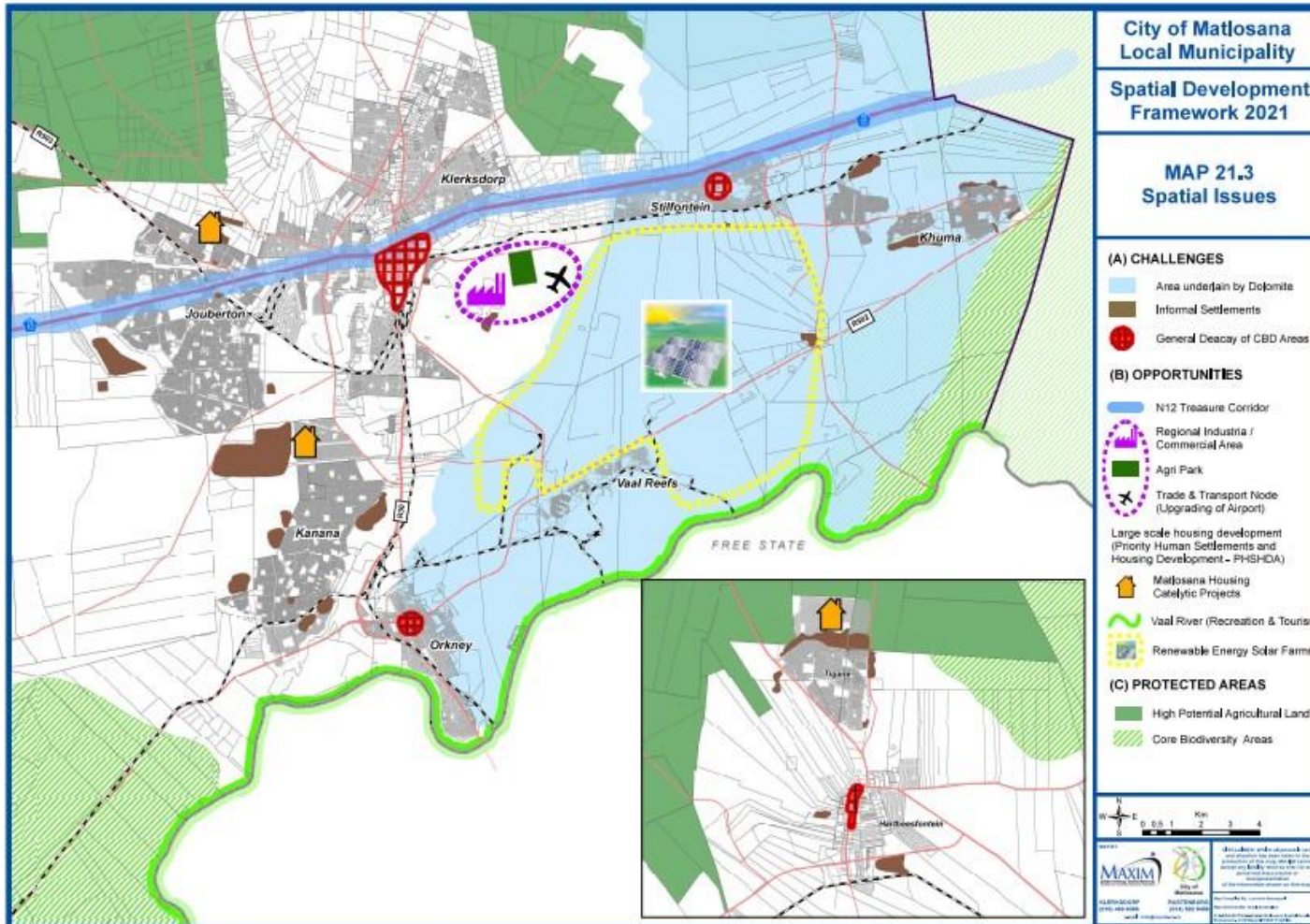


Figure 3 Showing spatial issues within city of Matlosana

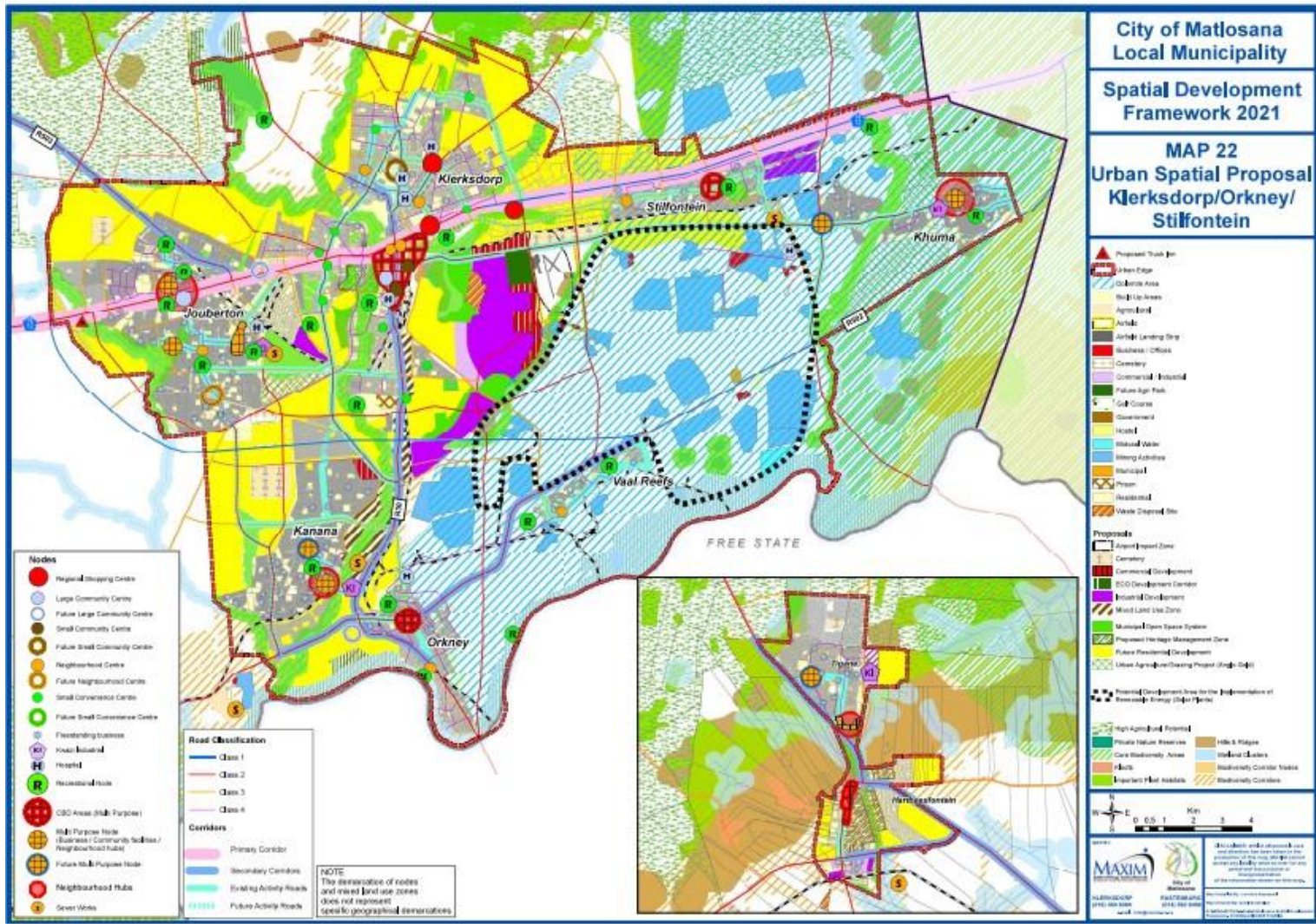


Figure 4 Showing the urban spatial proposal

Current Status

There has been no change in land use for the proposed development site, no new developments have been constructed on or near the development site, and the land use zoning (mining) remains the same.

The projects fall on what was demarcated during Census 2011 as Vaal Reef Gold Mine B, Sub Place 677002002 and is illustrated in **Figure 2**. This area covers 27.52 km² and, with a population of 86 people in 2011, had a population density of 3.09 per km². There were 72 households on Vaal Reef Gold Mine B property, resulting in a household density of 2.62 per km² in 2011. The 2011 Census data for the area is illustrated below.

Gender	People	Percentage
Male	78	91.76%
Female	7	8.24%
Age		
0–4	1	1.18%
5–9	1	1.18%
10–14	2	2.35%
15–19	2	2.35%
20–24	1	1.18%
25–29	1	1.18%
30–34	7	8.24%
35–39	7	8.24%
40–44	8	9.41%
45–49	10	11.76%
50–54	28	32.94%
55–59	13	15.29%
60–64	4	4.71%
65–69	0	0.00%
70–74	0	0.00%
75–79	0	0.00%
80–84	0	0.00%
85+	0	0.00%
Population group		
Black African	83	97.65%
Other	1	1.18%
White	1	1.18%
Black African	83	97.65%
First language		
Sesotho	43	50.59%
isiXhosa	20	23.53%
Setswana	6	7.06%
Xitsonga	6	7.06%
SiSwati	3	3.53%
isiZulu	3	3.53%
Sepedi	2	2.35%
Other	1	1.18%
Sign language	1	1.18%

Terms of Reference

The terms of reference of the report are to:

- Consider the baseline environment assessed during the initial assessment.
- Identify the current status.
- Consider the impacts identified and ratings during the initial assessment.
- Identify any additional impacts associated with the project and amendments.
- Identify any changes to the environment between the initial assessment and proposed amendments.
- Consider the cumulative impacts of the project.

Impacts

The following impacts were identified during the initial impact assessment.

- **Construction phase:**
 - Influx of job seekers
 - Population changes
 - Employment opportunities
 - Skills development and capacity building
 - Impact on the local economy
 - Shift in the dependency and focus of the local and regional economies from the primary to the secondary sector
 - Disruptions in daily living and movement patterns
 - Impact on the City of Motlasana
 - Health risks
 - Safety issues
 - Traffic safety
 - Security impacts
 - Impact on the 'sense of place'
 - Noise pollution
 - Visual and light pollution
 - Air / Dust pollution.
- **Operational phase:**
 - Job creation
 - Skills development and capacity building
 - Impact on the local economy
 - Impact on leisure and tourism activities
 - Impact associated with a change in land use
 - Impact on infrastructure and services
 - Impact on sense of place
 - Health risks
 - Safety issues
 - Electricity supply and the environment
 - Noise
 - Air / Dust pollution
 - Visual / Aesthetic impact.

Considering that the changes to the project include amending the authorised solar PV capacity with no adjustment to the PV panel height and development footprint of the facility from that authorised, to include a Battery Energy Storage System (BESS), and to extend the validity of the Environmental Authorisation beyond 10 years. It is most unlikely that this will result in any significant change in either the impacts assessment

in the original Social Impact Assessment and/or any changes in the assessment of these impacts.

Apart from this, it is most likely that the proposed amendments will have a significant social benefit for the following reasons:

- The addition of a BESS will increase the stability of the supply of electricity of the PV facility, providing operating reserve and frequency control to minimize the chance of power outages. The increased security of supply will carry socio-economic benefits on both an individual and business level.
- The extension of the validity of the Environmental Authorisation will increase the likelihood that the project will materialise. This will, in-turn have a positive impact on the security of electricity supply of the National Grid.

Cumulative Impacts

Considering the nature of the project being the construction of a renewable energy facility located on what previously was land used for mining, it is most unlikely that it will result in any significant social cumulative impacts. With the land being surrounded by mine dumps, which are most likely to result in a significant amount of air, soil and water pollution, the area is not suited for human habitation or agriculture.

As an integral part of the project, the grid connection infrastructure cannot, on a cumulative basis, be considered separately. Considering the positioning of the substations and the route of the power line, which crosses mine land and runs parallel to the R502 between mine dumps, it is most unlikely that the project and power line will result in any negative cumulative impacts.

On a positive basis, with the addition of 150 MW being made available, there would be a cumulative benefit associated with the project.

Discussion

Considering the nature and location of the project, there is a clear fit with international, national, provincial, and local policy and legislation. For instance, the World Wide Fund for Nature (WWF).

“...calls for a more ambitious plan, suggesting that the IRP [Integrated Resource Plan for Electricity] should provide for an 11-19% share of electricity capacity by 2030, depending on the country’s growth rate over the next fifteen years” (Sager, 2014, p. 5).

The issue of climate change is high on the agenda of all levels of government in South Africa with the Department of Environmental Affairs and Tourism (DEAT) indicating that.

“The efforts of all stakeholders will be harnessed to achieve the objectives of the Government’s White Paper on Renewable Energy (2003) and the Energy Efficiency Strategy, promoting a sustainable development path through coordinated government policy (Department of Environmental Affairs and Tourism, 2004, p. 23)”

DEAT goes further in specifically listing renewable energy sources, including wind power, solar power and biomass, as a tool in promoting mitigation against climate change.

Between 2012 and 2022 the situation regarding the security of the National Grid has significantly deteriorated, with it currently becoming a matter of national interest to secure alternative, preferably renewable, sources of energy. It is likely that the project could contribute towards the country's needs in this regard.

In addition, the project falls within Renewable Energy Development Zone (REDZ) 10 – Klerksdorp, which was Gazetted on 26 February 2021 with the intention of promoting the development of renewable energy.

Impact Statement

Considered the effects of the proposed amendments on the social environment, it is clear that the benefits would outweigh any negative consequences and that the amendments should be accepted.

- The request to amend the authorised solar PV capacity with no adjustment to the PV panel height and development footprint of the facility from that as authorised is acceptable.
- The request to include a Battery Energy Storage System (BESS) into the project description is acceptable.
- An extension of the validity of the Environmental Authorisation beyond the current 10 years is acceptable.

DECLARATION OF INDEPENDENCE

I, Neville Bews, as authorised representative of Dr Neville Bews & Associates hereby confirm my independence as a specialist and declare that neither I, nor Dr Neville Bews & Associates, have any interest, be it business, financial, personal or other, in any proposed activity, application or appeal in respect of which Dr Neville Bews & Associates was appointed as social impact assessment specialists in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), other than fair remuneration for work performed. This declaration is specifically in connection with the amendments to the Vaal River Solar 1 PV Facility as proposed by Vaal River Solar 1 (Pty) Ltd.

Signed: 
 **SOCIAL**

Date: 12 June 2022

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