

Lichtenburg 1, North West Province

Social Input for the amendment of the Environmental
Authorisation

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savannah
environmental

t +27 (0)11 656 3237

f +27 (0)86 684 0547

e info@savannahsa.com

w www.savannahsa.com

Prepared for:

ABO Wind Lichtenburg 1 PV (Pty) Ltd



PROJECT DETAILS

Title	:	Lichtenburg 1, North West Province: Social Input for the Amendment of the Environmental Authorisation
Authors	:	Savannah Environmental (Pty) Ltd Lisa Opperman
Client	:	ABO Wind Lichtenburg 1 PV (Pty) Ltd
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PURPOSE OF THE REPORT

ABO Wind Lichtenburg 1 PV (Pty) Ltd proposes the development of Lichtenburg 1, a PV solar energy facility and associated infrastructure on a site located 12km north of Lichtenburg and 5.5km south-east of Bakerville in the North West Province. The proposed project comprises a commercial solar energy facility and is intended to form part of the Department of Mineral Resources and Energy's (DMRE's) Renewable Energy Independent Power Producer Procurement (REIPPP) Programme.

Lichtenburg 1 received Environmental Authorisation (EA) from the National Department of Environmental Affairs (DEA) in accordance with the National Environmental Management Act (No. 107 of 1998) (NEMA), and the Environmental Impact Assessment (EIA) Regulations, 2014 (GNR 326) after the completion of an EIA process. The Environmental Authorisation was obtained on 01 July 2019 under the reference number 14/12/16/3/3/2/1091.

A Social Impact Assessment (SIA) Report was prepared by Sarah Watson of Savannah Environmental (Pty) Ltd in November 2018¹ in order to assess the positive and negative social impacts associated with the project.

ABO Wind Lichtenburg 1 PV (Pty) Ltd is now proposing the construction and operation of a Battery Energy Storage System (BESS) of up to 500MW/500MWh within the authorised footprint of the solar PV facility. This results in a change of the project description and the infrastructure associated with the project, as well as the layout of the facility. It must be noted that the inputs provided as part of this report assumes that no new areas or properties will be affected by the amendment (i.e. addition of BESS), other than those previously assessed, and that no new listed activities in terms of the EIA Regulations, 2014, are triggered.

1. OVERVIEW OF THE PROJECT AS INDICATED AND CONSIDERED IN THE SIA

1.1. Project Description

Lichtenburg 1 is proposed on the Remainder of the Farm Portion 4 of the Farm Houthaaldoorns No. 2 and Portion 6 of the Farm Zamenkomst No. 4, in Ward 16 of the Ditsobotla Local Municipality (LM) in the Ngaka Modiri Molema District Municipality (DM) in the North West Province.

Lichtenburg 1 will have a generation capacity of up to 100MW and will make use of photovoltaic (PV) solar technology for the generation of electricity. The proposed project will comprise of the following key infrastructure and components:

- » Arrays of PV solar panels with a contracted capacity of up to 100MW.
- » Mounting structures to support the PV panels (utilising either fixed-tilt / static, single-axis tracking, or double-axis tracking systems).

¹ Savannah Environmental (2018) Social Impact Assessment (SIA) Report for Lichtenburg 1, a PV energy facility and associated infrastructure near Lichtenburg, in the North West Province.

- » On-site inverters to convert power from Direct Current (DC) to Alternating Current (AC), and a 132kV on-site substation to facilitate the connection between the solar facility and the Eskom grid connection point.
- » A new 132kV power line between the on-site substation and the Eskom grid connection point.
- » Cabling between the project's components, to be laid underground where practical.
- » Auxiliary buildings such as offices and workshop areas for maintenance and storage.
- » Temporary laydown areas required during construction.
- » Internal access roads and perimeter security fencing around the development area.

1.2. Potential Social Impacts as determined through the EIA Process

The SIA that was undertaken as part of the EIA process for the solar energy facility identified impacts during both the construction and operation phases. Both positive and negative impacts were identified for these development phases.

The following positive impacts are expected to occur during the construction phase:

- » Direct and indirect employment and skills development opportunities; and
- » Economic multiplier effects.

The following negative impacts are expected to occur during the construction phase:

- » In-migration of people (non-local workforce and jobseekers);
- » Safety and security impacts;
- » Impacts on daily living and movement patterns;
- » Nuisance impacts (including noise and dust);
- » Visual impacts.

The following positive impacts are expected to occur during the operation phase:

- » Direct and indirect employment and skills development opportunities;
- » Development of non-polluting renewable energy infrastructure; and
- » Contribution to Local Economic Development (LED) and social upliftment.

The following negative impacts are expected to occur during the operation phase:

- » Visual and sense of place impacts; and
- » Impacts associated with the loss of agricultural land.

Impacts during the decommissioning phase were also identified and linked to loss of jobs and income, and the associated implications. Other impacts associated with decommissioning are considered to be similar to the impacts identified during the construction phase.

Positive and negative cumulative impacts were also assessed as part of the SIA.

The positive cumulative impacts include:

- » Cumulative impact from employment, skills and business opportunities and skills development.

The negative cumulative impacts include:

- » Cumulative impacts associated with large-scale in-migration of people.

Overall conclusion of the Social Impact Assessment:

The SIA concluded there are some vulnerable communities within the Lichtenburg 1 project area that may be affected by the development. Traditionally, the construction phase of a PV solar development is associated with majority of social impacts. Many of the social impacts are unavoidable and will take place to some extent but can be managed through the careful planning and implementation of appropriate mitigation measures. A number of potential positive and negative social impacts have been identified for the project, however an assessment of the potential social impacts indicated that there are no perceived negative impacts that are sufficiently significant to allow them to be classified as "fatal flaws".

General conclusions made in the SIA include:

- » The potential negative social impacts associated with the construction phase are typical of construction related projects and not just focused on the construction of solar PV projects (these relate to an influx of non-local workforce and jobseekers, intrusion and disturbance impacts (i.e. noise and dust, wear and tear on roads) and safety and security risks), and could be reduced with the implementation of the mitigation measures proposed. The significance of such impacts on the local communities can therefore be mitigated.
- » The development will introduce employment opportunities during the construction phase (temporary employment) and a limited number of permanent employment opportunities during the operation phase.
- » The proposed project could assist the local economy in creating entrepreneurial growth and opportunities, especially if local business is involved in the provision of general material, goods and services during the construction and operation phases. This positive impact is likely to be compounded by the cumulative impact associated with the development of several other solar facilities within the surrounding area, and as a result of the project's location within an area which is characterised by high levels of solar irradiation and which is therefore well suited to the development of commercial solar energy facilities.
- » The proposed development also represents an investment in infrastructure for the generation of non-polluting, renewable energy, which, when compared to energy generated as a result of burning polluting fossil fuels, represents a positive social benefit for society as a whole.
- » It should be noted that the expected benefits associated with the project, which include generation of electricity from renewable sources and local economic and social development, outweigh the perceived impacts associated with the project.

Key recommendations as provided in the SIA were identified for the enhancement of positive impacts and the management and mitigation of negative impacts. These include:

- » A Community Liaison Officer (CLO) must be appointed to assist with the management of social impacts and to deal with community issues, if feasible.
- » It is imperative that local labour be sourced, wherever possible, to ensure that benefits accrue to the local communities. Efforts should be made to involve local businesses during the construction activities where possible. Local procurement of labour and services / products would greatly benefit the community during the construction and operation phases of the project.
- » A recruitment policy / process must be developed which communicates the process for employment so that people know how and where to apply, and also to ensure that people are not encouraged to go to the project site in search of employment.

- » Local procurement of services and equipment is required where possible in order to enhance the multiplier effect.
- » Implement mitigation measures to minimise the dust and noise pollution and damage to existing roads.
- » Safety and security risks should be taken into account during the planning / construction phase of the proposed project. Access control, security and management should be implemented to limit the risk of crime increasing in the area as a result of the project.

2. DETAILS OF THE AMENDMENTS

The requested amendment will result in a change in the layout, with the main change being the addition of a BESS to the associated infrastructure of the facility. The BESS will be located within the authorised development footprint and will not affect any areas not previously assessed as part of the SIA. The BESS will be developed within the authorised development footprint of Lichtenburg 1 PV Facility, within the authorised laydown area, and with an extent of no more than 5ha. It is understood that the BESS will require the storage of dangerous goods for the operation and maintenance of the system, however these will be limited and will fall within the capacity of what was authorised for the solar energy facility.

The generation capacity of the facility will remain at 100MW.

The amended layout illustrating the location of the BESS is included as **Figure 2.1**.

Edder

The proposed technology will be electrochemical batteries (including either Lead Acid and Advanced Lead Acid; Lithium ion, NiCd, NiMH-based batteries; High Temperature (NaS, Na-NiCl₂, Mg/PB-Sb) batteries or Flow batteries (VRFB, Zn-Fe, Zn-Br)). The BESS will have a maximum height of 3.5m. The BESS will connect to the authorised on-site facility substation of the Lichtenburg 1 PV Facility via multi-core 33kV underground cables, to follow internal access roads of the PV facility.

3. POTENTIAL FOR CHANGE IN THE SIGNIFICANCE OF SOCIAL IMPACTS AS A RESULT OF THE PROPOSED AMENDMENTS

In terms of Regulation 32(1)(a)(i) of the EIA Regulations, the following section provides an assessment of the social impacts related to the proposed amendment for Lichtenburg 1. Understanding the nature of the proposed amendment and the fact that the addition of the BESS does not change the assessed and authorised development footprint, which was fully assessed as part of the SIA, it is concluded that the proposed amendment will not introduce any new social impacts, nor significantly alter the social impacts as previously assessed in the SIA. It is understood that the BESS may result in additional employment opportunities during the construction and operation phases, however these are limited and do not affect the significance ratings of the related impacts. The general purpose and utilisation of a BESS is to save and store excess electrical output as it is generated, allowing for a timed release when the capacity is required. BESS systems therefore provide flexibility in the efficient operation of the electricity grid through decoupling of the energy supply and demand. This is seen as a benefit from a social perspective but does not change the significance of the positive impact related to the project as previously assessed.

As required in terms of Regulation 32(1)(a)(iii) of the EIA Regulations, consideration was given to the requirement for additional measures to ensure avoidance, management and mitigation of impacts associated with the proposed change. Considering that there will be no change in impacts, no additional mitigation or enhancement measures are required for the addition of the BESS to the layout from a social perspective. The recommendations, mitigation and enhancement measures provided in the SIA are considered sufficient for the enhancement of the positive impacts and the management and mitigation of the negative impacts to acceptable levels. Therefore, all enhancement and mitigation measures, as proposed in the SIA are still required to be implemented for the amended Lichtenburg 1 development.

4. ADVANTAGES AND DISADVANTAGES OF THE PROPOSED AMENDMENTS

In terms of Regulation 32(1)(a)(ii) of the EIA Regulations, this section provides details of the advantages and disadvantages of the proposed amendment from a social perspective.

One advantage has been identified from a social perspective which is the opportunity provided by the installation of the BESS for flexibility in the efficient operation of the electricity grid.

No specific disadvantages have been identified from a social perspective with the implementation of the proposed amendment as part of the Lichtenburg 1 project.

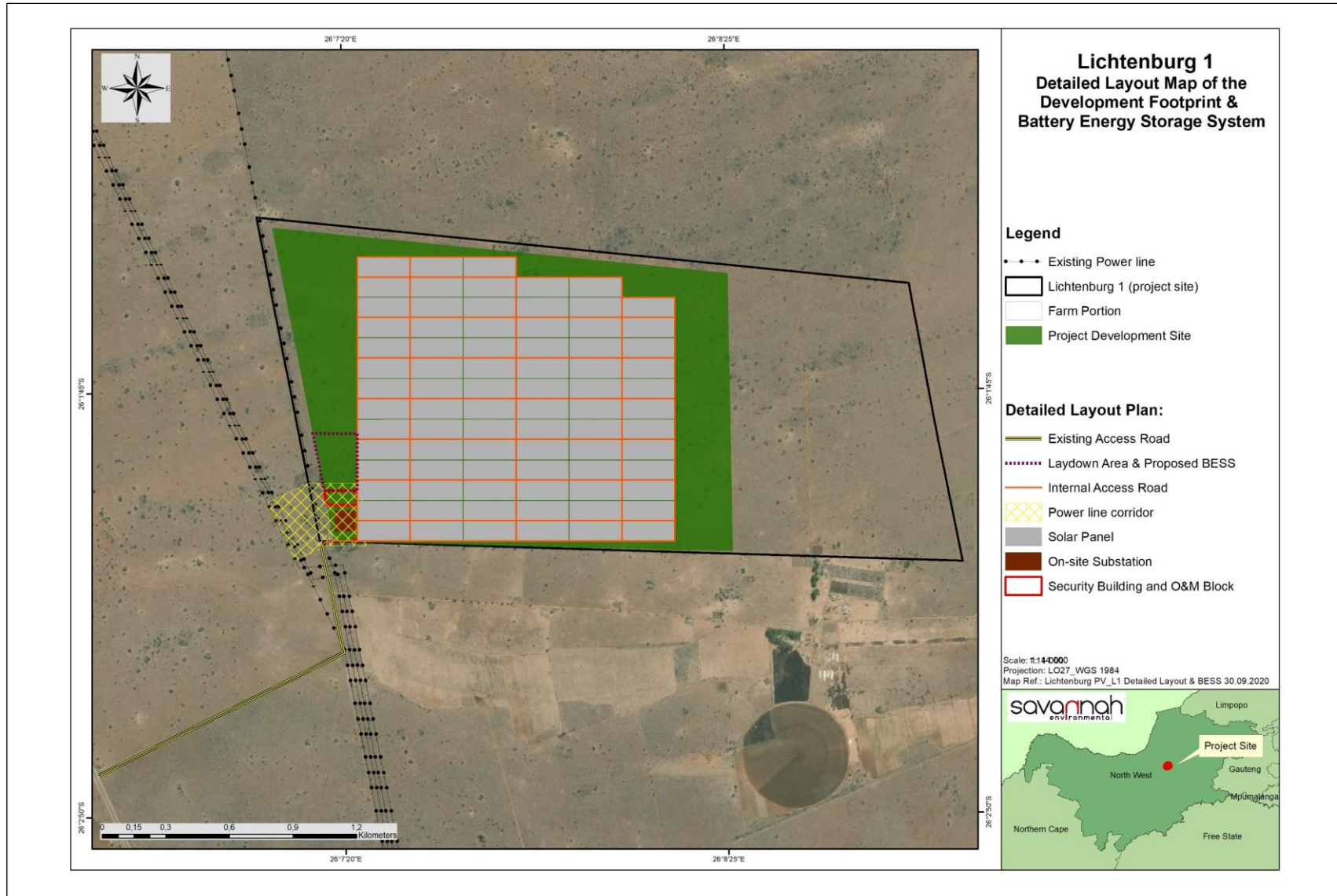


Figure 2.1: Proposed amended Lichtenburg 1 layout map, as considered within this report.

5. CONCLUSION

Based on the nature of the proposed amendment for Lichtenburg 1, and the fact that the proposed BESS falls within the properties and development footprint which was fully assessed as part of the SIA (November 2018), it can be concluded that the amendment will not lead to any additional impacts other than those identified and assessed within the SIA (undertaken in 2018). No change in the significance of the impacts is expected to occur and there is no need for any additional recommendations or mitigation measures other than those already specified in the SIA (2018).

The proposed amendment is considered to be acceptable from a social perspective and can be approved, subject to the implementation of the mitigation and enhancement measures as specified in the SIA (November 2018).

