Access road and Part 2 Amendment

Addendum to Social Impact Assessment Report

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Executive Summary

In 2016 Soventix SA (Pty) Ltd (now SolarAfrica Energy) applied for the development of a 225 MW Solar PV facility between Hanover and De Aar in the Northern Cape. Environmental authorisation for the central footprint (PV02) was granted in 2016. An amendment to increase the capacity of the facility to 300 MW due to technological advancements in solar photovoltaic efficiency and electrical output was granted in 2020. In 2021 a second amendment was granted for the inclusion of containerised lithium-ion battery storage and dual-fuel backup generators with associated fuel storage. The application was part of the REIPPP or RMIPPP bid rounds that formed part of a Strategic Infrastructure Project as described in the National Development Plan of 2011. Soventix SA (Pty) Ltd was an unsuccessful bidder at the time but has since partnered with another company with 1.5 GW in private renewable energy offtake agreements, making it economically feasible to develop two more 300 and 400 MW facilities and associated infrastructure (Phases 2 and 3 respectively). The company is now known as SolarAfrica Energy (Pty) Ltd. The PV03 footprint where Phase 2 is proposed was considered during the initial SEIA for Phase 1. The proposed site for Phase 3 was not assessed in the SEIA for Phase 1 and a SEIA for this site was conducted in August 2022.

Further authorisations are required for an amendment to the project to include a batching plant, additional operation and maintenance buildings and an Integrated Water Use License Application. In addition, a Basic Assessment is required for the upgrading and development of an access road from the N10/Burgerville district road (2448) turn-off into the Farm Riet Fountain No. 39C and to the switching station and main transmission substation on Sun Central Cluster 1 (300 MW) Solar PV Facility.

This report is an addendum to the Social Impact Assessment dated August 2022. The focus of the report is only on the additional impacts that will be created by the aspects included in the EIA amendment and the construction of the access road. The impacts described in the August 2022 SIA are therefore all relevant to the project. These impacts have been omitted from this report, because they have been assessed in the

original reports. Social impacts are not site specific but occur in the communities and stakeholders in the social area of influence. Communities experience one project, and do not separate activities as is done in the EIA regulations. It is therefore difficult to compartmentalise which specific impact will be associated with any specific activity, but this addendum aims to highlight the most significant impacts.

None of the possible impacts is seen as a fatal flaw in the possible successful execution of the proposed project. Most of the potential impacts can be mitigated. The importance of addressing the potential impacts as early in the project cycle as possible must be underlined, since failure to do so may result in the development of risks and an exponential increase in project cost. The following key social impacts have been identified:

- Change of land use/Livelihoods
- Property values
- Traffic and roads
- Damage to farm infrastructure
- Economic opportunities
- Sense of place

There will also be cumulative impacts from other phases of this project and other similar projects in the area, which have been discussed in the August 2022 SIA. Based on the findings of this study, the following key recommendations are made:

- A community liaison officer that is trusted by the community and has the necessary skills must be appointed before construction commences.
- Protocols on farm access, compensation, communication, and road maintenance must be agreed upon and be in place before construction commences.
- A grievance mechanism and claims procedure in case of damage to infrastructure or loss of livestock must be in place and shared with all the stakeholders before the construction commences; and
- Economic benefits must be enhanced, and local labour and procurement should be prioritised.

Based on the findings of this report, it is recommended that the project continues, on the conditions that the mitigation measures are implemented.

Declaration of Independence

Equispectives Research and Consulting Services declare that:

- All work undertaken relating to the proposed project were done as independent consultants;
- They have the necessary required expertise to conduct social impact assessments, including the required knowledge and understanding of any guidelines or policies that are relevant to the proposed activity;
- They have undertaken all the work and associated studies in an objective manner, even if the findings of these studies were not favourable to the project proponent;
- They have no vested interest, financial or otherwise, in the proposed project or the outcome thereof, apart from remuneration for the work undertaken under the auspices of the abovementioned regulations;
- They have no vested interest, including any conflicts of interest, in either the proposed project or the studies conducted in respect of the proposed project, other than complying with the relevant required regulations;
- They have disclosed any material factors that may have the potential to influence the competent authority's decision and/or objectivity in terms of any reports, plans or documents related to the proposed project as required by the regulations.

Record of Experience

This report was compiled by San-Marié Aucamp and Ilse Aucamp.

Ilse Aucamp holds a D Phil degree in Social Work obtained from the University of Pretoria in 2015. She also has Masters' degree in Environmental Management (Cum Laude) from the Potchefstroom University for Christian Higher Education, which she obtained in 2004. Prior to that she completed a BA degree in Social Work at the University of Pretoria. She is frequently a guest lecturer in pre- as well as post-graduate programmes at various tertiary institutions. Her expertise includes social impact assessments, social impact management plans, social and labour plans, social auditing, training, human rights, gender, social research, and public participation. She is a co-author of the *Social Impact Assessment: Guidance for assessing and managing the social impacts of projects* document published by the International Association for Impact Assessment.

San-Marié Aucamp is a registered Research Psychologist with extensive experience in both the practical and theoretical aspects of social research. She has more than 20 years' experience in social research, and she occasionally presents guest lectures on social impact assessment. Her experience includes social impact assessments, social and labour plans, training, group facilitation as well as social research. She is a past council member of the Southern African Marketing Research Association (SAMRA).

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GLOSSARY OF TERMS

Sense of place: Defining oneself in terms of a given piece of land. It is the manner in which humans relate or feel about the environments in which they live.

Social impact: Something that is experienced or felt by humans. It can be positive or negative. Social impacts can be experienced in a physical or perceptual sense.

Social change process: A discreet, observable, and describable process that changes the characteristics of a society, taking place regardless of the societal context (that is, independent of specific groups, religions etc.) These processes may, in certain circumstances and depending on the context, lead to the experience of social impacts.

Social Impact Assessment: The processes of analysing, monitoring, and managing the intended and unintended social consequences, both positive and negative, of planned interventions (policies, programs, plans, projects) and any social change processes invoked by these interventions. Its primary purpose is to bring about a more sustainable and equitable biophysical and human environment.

Social license to operate: The acceptance and belief by society, and specifically local communities, in the value creation of activities.

Social risk: Risk resulting from a social or socio-economic source. Social risk comprises both the objective threat of harm and the subjective perception of risk for harm.

LIST OF ABBREVIATIONS

BA	Basic Assessment
DM	District Municipality
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
LM	Local Municipality
NEMA	National Environmental Management Act
SIA	Social Impact Assessment

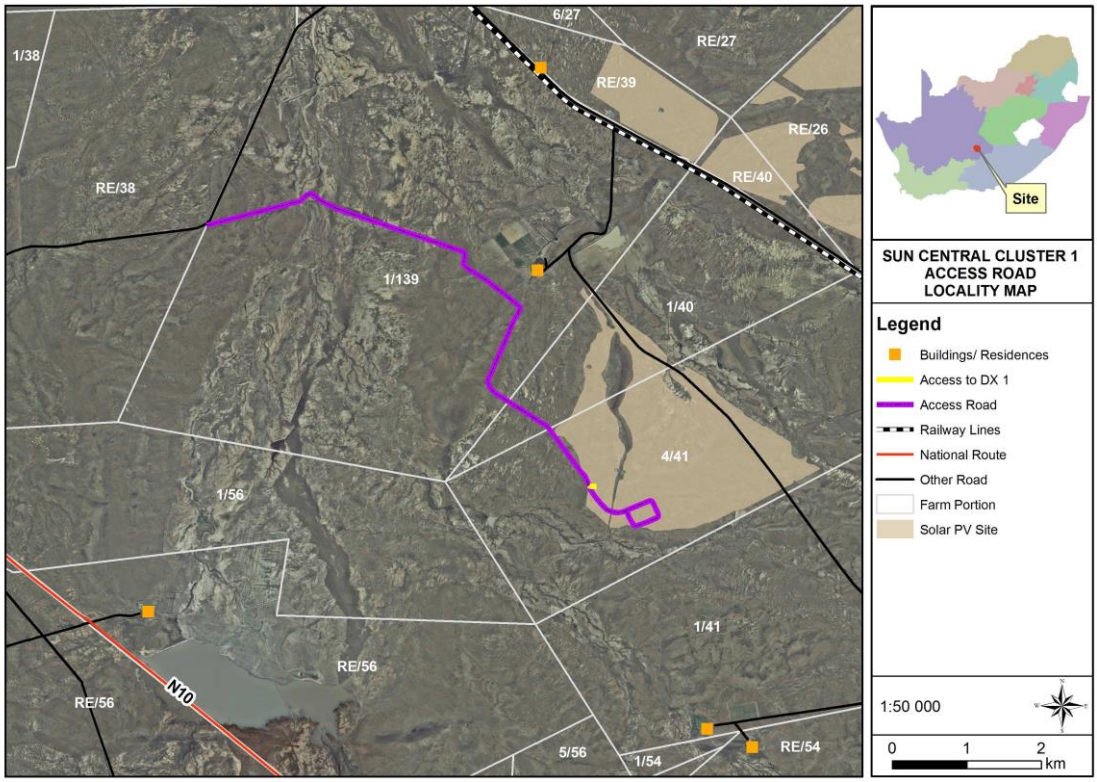
1 Introduction

In 2016 Soventix SA (Pty) Ltd (now SolarAfrica Energy) applied for the development of a 225 MW Solar PV facility between Hanover and De Aar in the Northern Cape. Environmental authorisation for the central footprint (PV02) was granted in 2016. An amendment to increase the capacity of the facility to 300 MW due to technological advancements in solar photovoltaic efficiency and electrical output was granted in 2020. In 2021 a second amendment was granted for the inclusion of containerised lithium-ion battery storage and dual-fuel backup generators with associated fuel storage. The application was part of the REIPPP or RMIPPP bid rounds that formed part of a Strategic Infrastructure Project as described in the National Development Plan of 2011. Soventix SA (Pty) Ltd was an unsuccessful bidder but has since partnered with another company with 1.5 GW in private renewable energy offtake agreements, making it economically feasible to develop two more 300 and 400 MW facilities and associated infrastructure (Phases 2 and 3 respectively). The company is now known as SolarAfrica Energy (Pty) Ltd. The PV03 footprint where Phase 2 is proposed was considered during the initial SEIA for Phase 1. The proposed site for Phase 3 was not assessed in the SEIA for Phase 1 and a SEIA for this site was conducted in August 2022.

Further authorisations are required for an amendment to the project to include a batching plant, additional operation and maintenance buildings and an Integrated Water Use License Application. In addition, a Basic Assessment is required for the upgrading and development of an access road from the N10/'Burgerville' district road (2448) turn-Off into the Farm Riet Fountain No. 39C and to the switching station and main transmission substation on Sun Central Cluster 1 (300 MW) Solar PV Facility.

Figure 1 shows the proposed location for the project and access road.

Figure 1: Locality of the proposed project and access road.



The purpose of this report is to assess potential additional social impacts that may be created by the access road and additional facilities. It is an addendum to the full ESIA and must be read with the August 2022 SEIA report. The socio-economic baseline described in the original ESIA provide baseline information regarding the socio-economic environment which is still relevant. The aim of the addendum is to identify possible social and economic risks/fatal flaws and to suggest ways in which these impacts can be mitigated. This will assist decision-makers on the project in making informed decisions by providing information on the potential or actual consequences of their proposed activities.

Ecoleges Environmental Consultants was appointed to manage the Environmental Impact Assessment for the project, and they appointed Equispectives Research and Consulting Services to amend the social impact assessment for the proposed project. This report only represents the findings and recommendations of social impacts specific to the amendment and Basic Assessment.

2 Scope of Work

The purpose of the SIA addendum is to provide input in the Environmental Impact Assessment (EIA) Amendment and Basic Assessment Reports for the proposed development. The SIA addendum includes the following:

- A detailed social impact assessment based on the activities that from part of the amendment and Basic Assessment;
- Identification and description of sensitivities and constraints from a social perspective;
- Include 'need and desirability' taking into account the social and economic aspects;
- Make recommendations with regard to the planning, construction and operation of the activities described in the amendment and BA report that will benefit all stakeholders, including the community;
- Contribution to the preparation of an EMP relating to the specific field of expertise and impacts identified;
- Providing detailed mitigation / management measures for the management of the identified impacts for inclusion in the EMP. The mitigation / management measures will be presented in a tabulated format for each phase of the project and will include;
    - Detailed description of mitigation measures or management options;
    - Roles and Responsibilities for implementation;
    - Timeframes for implementation;
    - Means of measuring successful implementation (Targets & Performance Indicators).

The methodology, policy and planning requirements, socio-economic baseline and stakeholder identification and analysis are included in the full SIA report of August 2022.

3 Social impact assessment

"Almost all projects almost always cause almost all impacts. Therefore, more important than predicting impacts is having on-going monitoring and adaptive management." Frank Vanclay.

It must be stated that the impact tables and ratings have been adapted from the environmental sciences and that it is not always possible to compartmentalise the social impacts. For the sake of consistency with the EIA amendment and Basic Assessment reports, this has been attempted, but it is not innate to social sciences. Allowance for the changing and adaptive nature of social impacts should be made when interpreting the impact tables. Social impacts are not footprint specific, but relates to the social environment surrounding the proposed project

3.1 Impact Assessment Methodology

Social impacts were assessed using the approach outlined below. Social impacts were identified systematically by considering how the site-specific activities for each phase of development will interact with all elements of the receiving social environment. All impacts were measured against the current land-use activity (the no-go option/option of not implementing the activity) and systematically assessed by rating a suite of generic criteria established by the Department of Environmental Affairs and Tourism (DEAT 2002). The criteria are:

- Extent or spatial scale,
- Intensity or severity of the impact,
- Duration of the impact,
- Mitigation potential,
- Social acceptability,
- Degree of certainty,
- Status of the impact, and
- Legal requirements.

The magnitude and significance of impacts were determined by describing the impacts in terms of the above criteria. The criteria provide a consistent and systematic basis for the comparison and application of judgements.

The suite of criteria was sought for its applicability to EIA, specifically by making provision for the variety of perspectives. Significance is an anthropocentric concept that makes use of value judgements and science-based criteria. Judgement and values are used to greater extent in EIA than science-based criteria and standards (DEAT 2002). Considering value judgements can vary greatly amongst different stakeholders, professional judgement, such as that of the specialist, should ideally be used in conjunction with the different value judgements expressed by various stakeholders. In other words, significance should be communicated from a variety of perspectives other than the professional opinion of a multidisciplinary study team, and include environmental, socio-economic or cultural attributes perceived by society to be significant. Despite the potential variety of perspectives, they can be categorized into three broad forms of recognition for determination of impact significance, namely institutional (laws, plans or policy statements), public and technical (scientific or technical knowledge or judgement of critical resource characteristics) recognition (DEAT 2002). Consequently, the magnitude and significance of impacts were as far as possible determined by reference to legal requirements, accepted scientific standards and/or social acceptability.

Significance is relative and must always be set in a context to show whose values they represent. The selected criterion provides such a context, taking all three forms of recognition into account by asking whether impacts are legally, publicly and professionally recognized as important. The thresholds, against which significance of a given environmental effect was measured or determined, were provided by a set of ratings for each criterion. Thresholds of significance were as far as possible based on/determined by reference to legal requirements, accepted scientific standards or social acceptability. Ratings are High (H- 4), Moderate (M-3), Low (L-2) or No Impact (N-1) and determined according to clearly defined descriptors. The ‘No Impact’ rating includes reference to ‘no impacts beyond prescribed thresholds’. In other words,

mitigations that change the ratings of any particular criteria to 'N' do not necessarily infer zero impact, but rather that the impact is restricted to prescribed thresholds as defined in the goal and objective(s) of the proposed mitigation(s). The significance of the impacts of the proposed project was assessed both with and without mitigation action.

Table 1: Impact Evaluation Criteria, Ratings and Descriptors.

Criteria	Ratings and Descriptors			
	High (4)	Moderate (3)	Low (2)	No Impact (1)
Spatial Scale/ Extent	Provincial, National, or International. Far beyond the site boundaries. Widespread. Impact affect closest towns.	Local (within the farm boundary) to Regional (beyond the farm boundary, impact affects neighbours).	Development footprint to within the site boundary.	No area is affected.
Intensity/ Magnitude	Functioning of processes will cease. Magnitude of impact exceeds legal limits, scientific standards, or social acceptability.	Modified processes will continue. Disturbance of potential social systems or livelihood resources.	Social of economic processes are affected, but not modified. Disturbance of degraded areas.	Social or economic processes are not affected.
Duration	Permanent. Beyond decommissioning. Long term (>2yr).	Temporary. Lifespan of the operational phase. Medium term (>1<2yr).	Immediate, once-off. Lifespan of the construction phase. Short term (<1yr).	
Mitigation Potential	High potential to mitigate and achieve objectives.	There is a moderate potential to mitigate, and achieve objectives.	There is a potential to mitigate, but there remains a risk of the objectives not being met.	No mechanism for mitigation and achieving the objectives.

Acceptability	Unacceptable Abandon project or design.	Manageable with expensive regulatory controls and the project proponent's commitments.	Some risk to public health/ environment, but it is easily averted using simple controls/ mitigations.	Acceptable No risk to public health/ environment.
	Definite (D- 4)	**Probable (P -3)**	**Improbable (I- 2)**	**No Impact (N- 1)**
Degree of Certainty/Probability of the impact occurring	Substantial supportive data. Impact will occur regardless of preventive measures. High probability. >95%.	There is a chance/risk of the impact occurring. Moderate probability. 5-95%.	It is unlikely that the impact will occur. Low probability. <5%.	The impact will not occur. 0%.
	Negative	**Neutral**	**Positive**	
Status	Net loss of resource. Adverse.	No net loss or gain.	Net gain of resource. Beneficial.	

3.2 Impacts identified, mitigation and management plan

This section describes and assesses the specific social impacts that will be associated with the proposed amendment and Basic Assessment. The impacts identified in the August 2022 report are still relevant. Only new impacts are described and assessed in this report. It must be considered that social impacts are not footprint specific but occurs in communities and affected land owners surrounding the project. It is therefore difficult to separate specific impacts relevant only to the amendment activities and the access road. Stakeholders do not separate activities but see the project as a whole. The impacts described in the SIA of August 2022 are therefore all relevant to both the amendment and access road. However, some impacts may increase in its intensity and be more relevant than others. The table below indicate which impacts has been identified in previous phases of the Sun Central Cluster 1 project and the August 2022 SIA report. The impacts that will increase in intensity are highlighted in yellow and discussed in the section below. These impacts should be highlighted in the amendment and BA reports. It is not anticipated that the

amendment activities (relating to the batching plant and additional groundwater abstraction**)** or access road will create impacts that have not been identified before. The table below indicates whether identified impacts are applicable to the amendment and the Basic Assessment:

Table 2: Impacts previously identified and assessed

Social impacts already identified	Relevant to amendment	Relevant to BA
Expectations about community benefits	Yes	Yes
Uncertainty amongst land owners	Yes	Yes
Change of land use/livelihoods	Yes	Yes
Traffic and roads	Yes	Yes
Damage to farm infrastructure	Yes	Yes
Safety and security concerns due to more people in the area	Yes	Yes
Social disturbance and community safety	Yes	Yes
Economic opportunities	Yes	Yes
Sense of place	Yes	Yes
Generation of renewable energy	Yes	Yes
Expectations and community relations	Yes	Yes
Property values	Yes	Yes

When the mitigation and management of social impacts are considered, one must take into consideration that social impacts occur in communities surrounding the proposed project, and although the project proponent may be the catalyst for some impacts, there may be a number of external factors contributing to the impact. Many of these factors are outside the control of the project proponent. Many of the social impacts the proponent cannot mitigate alone, and partnerships with local government and Non-Profit Organisations are often required. Social impacts must be managed in the long term. This complex process requires insight in the social environment and community dynamics. The social environment adapts to change quickly, and social impacts therefore evolve and change throughout the project cycle.

3.3 Impacts that will intensify due to the EIA amendment

3.3.1 Change of land use/Livelihoods

Description of impact

The proposed site is situated in a rural area on a sheep farm. The site is currently used for grazing purposes. The construction of a solar electricity generating facility and its associated infrastructure will lead to a change of land use, and this change of land use can potentially impact negatively on the livelihood of the affected farmer, which is currently sheep farming. Additional infrastructure may extend the construction period and create less grazing. Although it may be a hybrid agrivoltaic system, meaning that sheep could continue to graze amongst the solar panels, the areas available for grazing will be less if the project is implemented, and this could mean that the farmer would need to cut down on his production rates, which would impact negatively on his livelihood. It is possible for sheep to graze in between the solar panels, but to achieve that the farmer would need more labour than he is currently using. The reason for this is that he would need to divide his flocks and have them graze in separate areas. This entails the movement of the flock between camps and managing of the flock in the solar area. During the construction phase all livestock would need to be moved to different parts of the farm as the construction activities may be distressing for the animals. This is also the case with game, but it is not that easy to move game around on the farms. Farmers indicated that they would not be able to introduce new game on their properties during the construction phase due to the sensitivity of game to environmental factors such as noise and constant movement. Construction traffic may impact on the movement of the livestock around the farm. Farmers are also concerned about the impact of the quality of the roads on their quality of life and ability to transport their goods. In addition, the project will be implemented in an arid region where water is scarce and essential for livestock farming. Additional water abstraction is a source of concern.

Changing the land use means that the land in question must be rezoned from agricultural to renewable energy infrastructure (Draft ELM Land Use Scheme, 2021). This have tax implications for the farmer, as taxes on renewable energy infrastructure

is higher than taxes on agricultural land. Neighbouring farmers are also concerned that their property tax may be increased due to the development.

In some cases, the neighbouring farmers will benefit from the construction of the facility since they can offer accommodation or other related services that can supplement their income.

Impact mitigation

While it is true that the landowner will lose productive grazing areas, it must be considered that he will be compensated for the use of the land through a commercial transaction with SolarAfrica. This should allow him to find an alternative source of grazing, either by buying or renting additional land. The increase in his taxes should also be considered in the renting transaction. In addition, the design of the solar farm is such that the land may still be used for grazing purposes.

Livestock must have right of way. Construction vehicles must wait for the animals to cross before they continue with their journey. The contractor must compensate the farmer for any losses of livestock due to irresponsible behaviour by the construction teams. A compensation policy must be compiled before the construction commence. The farmers must be given a construction programme with sufficient leeway to ensure that they can move their livestock before construction activities commence.

The principle of “locals first” must be used to ensure that neighbouring land owners benefit from requirements for accommodation or any other services that they can deliver.

Should there be issues with the availability of the water, humans and livestock must be accommodated first.

3.3.2 Property values

Description of impact

Neighbouring farmers expressed their concerns about the potential impact of living adjacent to a solar facility on the value of their properties. A number of aspects such as interest rates, economic conditions, climate, terrain, carrying capacity and the availability of water, amongst others, can influence the property price of farms.

Impacts on property values cannot be predicted with a high level of confidence, and as such should be treated with caution. Due to the recent droughts in the Karoo, even after receiving some rain prices remains depressed as it will take some time for the natural grazing to recover and farmers to build their herds (Kriel, 2021). A search of estate agent's databases indicated only one or two farms for sale in the Hanover/De Aar area (Compare Private Property; AgriSell; Property24; SAFarmTraders; ReMax South Africa). No local studies could be found regarding the impact of solar farms on property prices of neighbouring properties. Local studies on the impact of wind farms on property prices indicates that there is no measurable or statistically significant effect on sales prices (Van Zyl & Kinghorn, 2022). American studies found that properties immediately adjacent to a solar farm may see a negative impact, but tactics to hide the solar farm from view could help offset those effects (ASFMRA press, 2021). Rich Kirkland, who has conducted more than 100 property valuation studies across 19 states concluded that: *"In rural and suburban areas, I'm not finding any consistent negative impact from solar farms as long as there's at least 100 feet between the [solar] farm and the property, and enough landscaping to hide the panels."* (ASFMRA press, 2021). In the Netherlands evidence was found that house prices within 1km of a solar farm decrease by 2-3%, but the researchers did not have a high level of confidence in their findings as there are relatively few solar farms in the Netherlands (Koster & Droes, 2020). It is therefore estimated that the proposed development will not have a significant impact on the property values, although there are many external factors that may influence this potential impact. The additional infrastructure and abstraction of water may intensify the perception of farmers that their property values will decrease.

Impact mitigation

Impacts on property values are dependent on how the site is developed and managed to minimise negative biophysical and social impacts. The measures recommended in other specialist reports to these impacts (primarily the minimisation of visual, heritage, traffic and ecological impacts) and in this study would thus also minimise property value impacts. The following specific measures must be implemented:

- Dust suppression measures must be implemented when required.

- Water abstraction must be monitored to ensure that the water use of the plant does not affect farmers or farming activities.

3.3.3 Damage to farm infrastructure

Description of impact

The movement of workers and vehicles on the site could cause damage to farm infrastructure (e.g., fencing, water troughs and gates), during construction and operation. Farm owners are concerned about the impact of fences on water flow during heavy rain. If fences are not kept clear of debris, there is a risk that it can affect the waterflow into dams in the area, which is critical in an arid area like the Karoo. Another concern is the waterflow around the wetland and the potential impact on the road. There is also a risk of stock loss due to farm gates being left open, or not being closed properly by construction teams. The increase in physical infrastructure may intensify this impact from the farmer's perspective.

Impact mitigation

If any damage to farm infrastructure or stock losses occurs, SolarAfrica must compensate the affected landowner for his losses. SolarAfrica must develop a grievance mechanism and a complaints procedure that allows the landowners to log their grievance and submit a claim for damages. The construction teams must be educated about the impact of damages to fences, water troughs and gates on the activities of the farmers through toolbox talks. Inspections of boundary fences and gates should be done on a daily basis in areas where there are activities. All fences should be inspected and be kept clear of debris, especially in the rainy season, even if the fences are not crossing water courses.

3.3.4 Sense of place

Description of impact

There is a strong sense and spirit of place associated with the Karoo landscape. The surrounding farms are used for sheep farming, game farming and hunting. The current residents and farm owners have a strong sense of place associated with the farms. Many things can impact on a person's perception of sense of place. Farms are generally noisy places if one considers animal-sounds and farming activities. From the

receptors' perspective, this kind of noise is acceptable and even attractive, because this is what living on a farm is all about. Noises such as alarms and reverse hooters are not "normal" and disturb the sense of place and the value that people place on the auditory environment. Although lights are used as a security measure on farms, one of the things people values is the absence of bright lights and that they can see the stars. Lights for any other use than lightening up their direct environment is seen as invasive and disturbs the sense of place. Visual aspects are an important consideration in the experience of sense of place. If people are used to unspoiled vistas, or seeing open fields, the establishment of any buildings or infrastructure that they feel do not belong there can alter their sense of place. Sense of place refers to an individual's personal relationship with his/her local environment, both social and natural, which the individual experiences in his/her everyday daily life (Vanclay et al, 2015). It is highly personal, and once it is affected, it cannot be restored. It is also difficult to quantify. Part of the sense of place is the emotional attachment that the farmers have to their properties, and the hopes that they have for it to serve future generations (their children). The environmental philosopher Glenn Albrecht noted a consistent theme of distress caused by coal mining in Australia by the assault on the people's sense of identity, place, belonging, control, and good health. He identified a melancholia from the loss of solace and comfort connected with their home which he termed 'solastalgia' – a form of homesickness that one gets when one is still at 'home' associated with the major project impacts they experienced (Albrecht et al, 2007). Social impacts can therefore range from significant health impacts to the loss of a cherished landscape and associated loss of a sense of place.

The spirit of place associated with an area is an important factor in tourism and hunting and the marketing of these activities. Spirit of place refers to the unique, distinctive, and cherished aspects of a place. Whereas 'sense of place' is the personal feelings an individual has about a place, spirit of place refers the inherent characteristics of the place (Vanclay et al, 2015). In this case the spirit of place includes the unique tangible and intangible heritage and biodiversity of the area.

Aspects that will impact on the sense and spirit of place include an increase in noise and activity levels from construction activities, but this will be a temporary impact

during the construction phase. The **construction phase** will see a total transformation from the current setting and landscape of the proposed site. It is inevitable that the visual impact during the construction phase will be affected by dust, increase in vehicle traffic and other construction activities. Potential visual impacts caused by construction activities will include the visual changes brought about by clearance of vegetation for the solar arrays, ancillary buildings, and laydown areas; visual disturbance caused by construction of roads, buildings, energy collectors, power lines, increased traffic (and number of large vehicles), worker presence and activity, and dust emissions. Other visual disturbances may include soil stockpiles (from excavation for building foundations and other structures), soil scars, as well as potential for invasive plant species to develop on disturbed soils and soil stockpiles, which may contrast with existing vegetation.

During the **operational phase**, visual impacts such as glare from the solar panels, buildings, power lines, lack of vegetation and light at night will also impact on the sense and spirit of place and will be an impact as long as the plant is operational. Modern solar modules are designed to absorb the solar radiation and hence are not susceptible to reflection or glinting. Nonetheless, the contrast between the solar arrays and surrounding vegetation will exist, in colour, form, line and texture. The impact of lights in a dark rural area known for its beautiful night sky is a special concern of land owners. Although the preferred site may not influence the sense of and spirit of place of the Karoo as such, it will have a significant impact on the sense and spirit of place of the direct neighbours.

Although there are visual and biodiversity impact assessment reports that suggest mitigation, it must be acknowledged that the sense of place will be altered permanently and given the personal experience of this impact from some stakeholders, successful mitigation is extremely hard to do. In the eye of the affected parties the only thing that will not alter the sense and spirit of the place in this instance is to avoid any further development.

There are various actions related to **decommissioning** of the facility that have an impact on sensitive visual receptors. Immediate visual impacts during decommissioning will be like those caused during construction of the facility, but of a

much shorter duration. Impacts may include road redevelopment, removal of aboveground structures and equipment, movement and activities of workers, increased traffic, dust emissions and presence of dismantled equipment. Rehabilitation of the decommissioned site could entail grading, scarifying, seeding, and planting. Disturbed and rehabilitated areas may take a long time to recover to pre-project conditions, and contrast between existing and newly planted vegetation may persist many seasons.

Decommissioning and removal of the facilities will include all the structures for PV and buildings and related concrete foundations. Reversibility of the visual impact is therefore moderate to high, keeping in mind that it may take several years for the vegetation to fully recover. The effect of decommissioning the plant could have a positive permanent improvement to the visual resources.

Impact mitigation

It is difficult to mitigate the impact on sense of place as it is experienced on a personal level. In general, the mitigation measures suggested in the other relevant specialist studies such as visual, terrestrial ecology and heritage should be adhered to. The relevant specialists will provide scientific mitigation measures for the aspects relevant to their studies. Sense of place is a personal experience, but successful rehabilitation will go a long way in recreating a rural sense of place. The public perception would be negative or positive depending on the successful implementation of the rehabilitation after construction. Specific mitigation measures include:

- Grievance mechanism and contact person that can deal with enquiries from local residents.
- Dust suppression measures must be implemented when required.
- Residents near the development site should be notified 24 hours prior to any planned activities that will be visible.
- SolarAfrica should demarcate construction boundaries and minimise areas of surface disturbance.
- Construction of new roads should be minimised, and existing roads should be used where possible.

- Night lighting of the construction sites should be minimised within requirements of safety and efficiency.
- All structures and infrastructure associated with the proposed facilities should be dismantled and transported off-site on decommissioning.

3.4 Social impact ratings relevant to amendments to the project

The table below shows the impact ratings relevant to the amendments to the project.

Table 3: Social impact ratings

Phase	Aspect	Impact	Mitigation Action	Extent	Magnitude	Duration	Probability	Significance	Acceptability	Status	Mitigation potential (to meet objectives)
Construction	Change of land use	Change in livelihood activities of directly affected and neighbouring properties	Without	3	3	2	4	32	3	Negative	M
			With	3	2	2	3	21	2	Neutral	
	Reason for Score: The amendment will increase the construction activities, and the water use may impact on the availability of water in times of drought.										
	Construction activities such as transport of workers and materials	Damage to farm infrastructure	Without	3	3	2	4	32	3	Negative	H
			With	3	2	2	3	21	2	Negative	
	Reason for Score: Damage of farm infrastructure during construction is almost inevitable, but if all mechanisms is in place it is relatively straight forward to mitigate.										
			Without	2	4	3	4	36	3	Negative	H

Phase	Aspect	Impact	Mitigation Action	Extent	Magnitude	Duration	Probability	Significance	Acceptability	Status	Mitigation potential (to meet objectives)
	Construction and development of renewable energy facility	Local experience of sense and spirit of place	With	2	3	2	3	21	3	Negative	
	Reason for Score: The visual qualities of the environment will change. Neighbours expressed concerns about the visual impacts.										
Operation	Change of land use	Change in livelihood activities for directly affected landowner and new opportunities for neighbouring properties	Without	3	3	4	3	30	1	Positive	H
			With	3	2	4	4	36	2	Positive	
	Reason for Score: Land owner will benefit from rental agreement and new economic opportunities may be presented to the neighbouring properties										
	Change of land use by neighbour	Impact on value of property	Without	3	2	3	3	24	2	Neutral	M
			With	3	1	3	2	14	1	Neutral	
	Reason for Score: Research indicates that impact on property prices are neglible										
			Without	3	3	4	4	40	2	Negative	M

Phase	Aspect	Impact	Mitigation Action	Extent	Magnitude	Duration	Probability	Significance	Acceptability	Status	Mitigation potential (to meet objectives)
	Visual disturbances associated with solar facility	Sense and spirit of place	With	3	2	4	3	27	2	Negative	
	Reason for Score: Sense and spirit of place is a highly personal experience, but can also change over time										
Decommissioning	Change of land use	Change in livelihood activities	Without	3	3	2	4	32	3	Negative	M
			With	3	2	2	3	21	2	Neutral	
	Reason for Score: If the solar facility is removed similar impacts than in the construction phase will occur										
	Construction activities such as transport of workers and materials	Damage to farm infrastructure	Without	3	3	2	4	32	3	Negative	H
			With	3	2	2	3	21	2	Negative	
	Reason for Score: More traffic and vehicles will be on the site and the adjacent properties										
	Removal of solar infrastructure	Sense and spirit of place	Without	3	3	4	3	30	1	Positive	H
			With	3	2	4	4	36	1	Positive	
	Reason for Score: When the solar panels are removed and the landscape is rehabilitated some individuals will feel that the sense and spirit of place is restored.										

3.5 Impacts that will intensify due to the access road (Basic Assessment)

3.5.1 Traffic and roads

Description of impact

The main access is off the N10 between De Aar and Hanover, which enters the site from the west. The provincial unsurfaced road (Burgersville District Road) and the existing farm access road will also be used. Once on the farm, an Eskom servitude road will be used to access the main gate to the operational area and on-site substation. During the dry season the area is very dry and dusty. During the wet season, the roads can become muddy, and vehicles can get stuck easily. The district road is used by a number of farmers in the area to access their properties. It also traverses or is adjacent to some of the neighbouring properties. The construction of an access road of a high quality will be a positive impact. Currently, stakeholders are concerned about the quality of the roads, especially if heavy construction vehicles are used. They are also concerned about the increase in traffic on their fence lines and how more traffic and strangers in the area will impact on their properties. The construction phase will generate significant additional traffic on the roads – just the transport of the workers will mean two trips per day, and then the delivery of construction material and management activities must also be considered. Neighbours are concerned about the generation of dust. Although the proposed site is far from any communities, it is relatively close to some of the farmers, but the biggest concern is the impact that the dust will have on the quality of the grazing. Farmers acknowledge that the dust will be washed of by rain, but it is an arid area with relatively low rainfall in general.

Impact mitigation

The construction of an access road to the site will benefit all the road users. It is important that SolarAfrica in partnership with Eskom must maintain the access road for the life of the project. Road maintenance and access to individual properties is especially important in the construction phase, where the most severe impacts are expected. Dust suppression measures must be implemented in line with the recommendations from the BA. These measures must consider the arid nature of the

area and the scarcity of water. If possible, local service providers must be used for road construction, maintenance, and dust suppression activities. Vehicles must be clearly marked, and the necessary road signage must be erected on the affected roads to warn road users about the construction activities and traffic. SolarAfrica must have a Traffic Management Plan to address the flow of traffic and road safety. Aspects such as speeding, driving while tired, transport of passengers, driving on un-tarred roads and general road safety must be included in the plan and in the induction of workers.

3.5.2 Economic opportunities

Description of impact

The proposed project will create positive economic impacts in the area, which will increase with the addition of the construction of an access road. The most direct impact on a community level is job creation. Although the road construction phase jobs are temporary and will not contribute to the unemployment levels in the long term, it would have a significant positive impact on the short term. The increase in disposable income (via the project workers) will result in increased demand for goods and services, and greater spending within the local community

It can be anticipated that there are semi-skilled and unskilled labour present in the area that has experience of road construction work during the establishment of the existing solar farms in the area. The municipality noted that they feel that the skills transfer from renewable energy companies up to now has been limited, and they would like to see more skills transfer programmes on a local level.

Apart from the direct employment opportunities, there. will also be significant indirect economic opportunities for local entrepreneurs. Opportunities include transport, fencing, road maintenance, accommodation, meals, and laundry services. Several people reported that they established businesses that provide services to the renewable sector and has benefitted from the presence of these facilities in the area. The highly skilled technical people will need accommodation and other hospitality services while they reside in the area during the construction period. Some of the adjacent farms offer accommodation, which may be a viable option for some of the workers. Whilst some of the technical jobs need highly skilled people that are not

available locally, service providers must make use of the secondary opportunities that are available locally.

Impact mitigation/enhancement

As far as possible local labour must be used for the road construction. This will minimise the potential negative social impacts on the community and optimise the positive impacts. SolarAfrica need to liaise with the Local Economic Development section of the municipality, local leaders, and NGOs about their recruitment policy to ensure it is in line with the local practices and tap into existing knowledge. The recruitment policy must set reasonable targets for the employment of local people and women.

As far as possible materials must be procured locally. SolarAfrica must develop a policy about local procurement. Workers from outside the area must be provided with a list of local service providers for their accommodation and other social needs.

3.6 Social impact ratings relevant to the access road

The table below shows the impact ratings created by the access roads

Table 4: Social impact ratings

Phase	Aspect	Impact	Mitigation Action	Extent	Magnitude	Duration	Probability	Significance	Acceptability	Status	Mitigation potential (to meet objectives)
Construction	Construction activities such as transport of workers and materials	Impact on road quality and safety	Without	3	3	2	4	32	3	Negative	M
			With	3	2	2	3	21	2	Negative	
	Reason for Score: Construction activities may cause a disruption of movement patterns and dust that may impact on the quality of the grazing next to the road										
	Construction of road	Economic opportunities	Without	4	3	2	3	27	1	Positive	H
			With	4	4	3	4	44	1	Positive	
	Reason for Score: A variety of economic opportunities will arise on a local, provincial and national level										
Operation	Operational activities and movement of people	Impact on road quality and safety	Without	3	2	4	3	27	2	Positive	H
			With	3	3	4	3	30	2	Positive	
	Reason for Score: Roads are currently in a bad condition, and the construction of the access road will improve road safety and quality of life										
	Road maintenance activities	Economic opportunities	Without	3	2	3	3	24	2	Positive	H
			With	4	3	4	4	44	1	Positive	
	Reason for Score: Roads will need to be maintained and this will create additional jobs										

Phase	Aspect	Impact	Mitigation Action	Extent	Magnitude	Duration	Probability	Significance	Acceptability	Status	Mitigation potential (to meet objectives)
Decommission	Construction activities such as transport of workers and materials	Impact on road quality and safety	Without	3	3	2	4	32	3	Negative	M
			With	3	2	2	3	21	2	Negative	
	Reason for Score: There will be an increase in traffic and construction teams will be required to break down the facility										

3.7 Social impact management plan

The table below presents the social impact management plan that is suggested for the life of the project. The social impact management plan does not replace the social mitigation measures but must be implemented in addition to the suggested mitigation measures.

Table 5: Social impact management plan

SOCIAL IMPACT MANAGEMENT PLAN				
Phase	**Management action**	**Timeframe for implementation**	**Responsible party for implementation (frequency)**	**Responsible party for monitor/audit/review (frequency)**
Planning and Design Phase	Develop social impact management plan	As soon as project enters public domain	Applicant (involve municipality where appropriate)	CLO *Internal once appointed* Social expert

				External but not legally required
	Appoint appropriately qualified community liaison officer (CLO) to deal with social aspects of the project throughout the life of the project	Before consultation with stakeholders start (excluding EIA consultation)	Applicant Appointment for the life of the project	Not required apart from usual HR processes
	Develop community relations and stakeholder engagement strategy	Before consultation with stakeholders start (excluding EIA consultation)	Applicant Continued for the life of project	CLO *Internal* *No external review required*
	Develop safety plan, access protocols, grievance mechanism and compensation policy	In consultation with stakeholders	Applicant Continued for the life of project	CLO *Internal* *No external review required*
Construction Phase	Monitoring of social mitigation and management measures	Throughout construction	Applicant (CLO) Continued for the life of project	Management *Once a year or as required*
	Implementation of community relations and stakeholder engagement strategy	Throughout construction	Applicant (CLO) Continued for the life of project	Management *Once a year or as required*
	Implement safety plan, access protocols, grievance mechanism and compensation policy	Throughout construction	Applicant (CLO) Continued for the life of project	Management *Once a year or as required*
Operation Phase	Monitoring of social mitigation and management measures	Throughout operation	Applicant (CLO) Continued for the life of project	Management *Once a year or as required*

	Implementation of community relations strategy	Throughout operation	Applicant (CLO) Continued for the life of project	Management *Once a year or as required*
	Implement safety plan, access protocols, grievance mechanism and compensation policy	Throughout operation	Applicant (CLO) Continued for the life of project	Management *Once a year or as required*
Decommissioning, Closure and Rehabilitation Phase	Implement safety plan, access protocols, grievance mechanism and compensation policy	Throughout decommissioning until all rehabilitation activities have ceased	Applicant (CLO) Continued for the life of project	Management *Once a year or as required*
	Continue community relations strategy and stakeholder engagement plan until all activities on site cease and rehabilitation is completed	Throughout decommissioning until all rehabilitation activities have ceased	Applicant (CLO) Continued for the life of project	Management *Once a year or as required*
	Implement social mitigation for closure	Throughout decommissioning	Applicant (CLO) Continued for the life of project	Management *Once a year or as required*

4 Conclusions and recommendations

This report is an addendum to the Social Impact Assessment dated August 2022. The focus of the report is only on the additional impacts that will be created by the aspects included in the EIA amendment and the construction of the access road. The impacts described in the August 2022 SIA are therefore all relevant to the project. These impacts have been omitted from this report, because they have been assessed in the original reports. Social impacts are not site specific but occur in the communities and stakeholders in the social area of influence. Communities experience one project, and do not separate activities as is done in the EIA regulations. It is therefore difficult to compartmentalise which specific impact will be associated with any specific activity, but this addendum aims to highlight the most significant impacts.

None of the possible impacts is seen as a fatal flaw in the possible successful execution of the proposed project. Most of the potential impacts can be mitigated. The importance of addressing the potential impacts as early in the project cycle as possible must be underlined, since failure to do so may result in the development of risks and an exponential increase in project cost. The following key social impacts have been identified:

- Change of land use/Livelihoods
- Property values
- Traffic and roads
- Damage to farm infrastructure
- Economic opportunities
- Sense of place

There will also be cumulative impacts from other phases of this project and other similar projects in the area, which have been discussed in the August 2022 SIA. Based on the findings of this study, the following key recommendations are made:

- A community liaison officer that is trusted by the community and has the necessary skills must be appointed before construction commences.
- Protocols on farm access, compensation, communication, and road maintenance must be agreed upon and be in place before construction commences.
- A grievance mechanism and claims procedure in case of damage to infrastructure or loss of livestock must be in place and shared with all the stakeholders before the construction commences; and
- Economic benefits must be enhanced, and local labour and procurement should be prioritised.

Based on the findings of this report, it is recommended that the project continues, on the conditions that the mitigation measures are implemented.

5 References

American Society of Farm Managers and Rural Appraisers (ASFMRA) 2021. **Solar's impact on rural property values.**

Du Preez, M. & Perold, J. 2005. **Scoping/feasibility study for the development of a new landfill site for the Northern Areas of the Metropolitan Municipality of Johannesburg. Socio-Economic Assessment.** Mawatsan.

Emthanjeni Municipality Final Integrated Development Plan 2021/2022. Final review of the 4th generation. 9 June 2021. Emthanjeni Local Municipality.

Esteves, A.M., Franks, D. & Vanclay, F. 2012. **Social impact assessment: The state of the art**, Impact Assessment & Project Appraisal 30(1): 35-44

International Association for Impact Assessment. 2003. **Social Impact Assessment: International Principles.** Special Publication Series no.2. IAIA; Fargo.

Koster, H. & Droes, M. 2020. **Wind turbines and solar farms drive down house prizes.**

Vanclay, F. 2003. **Conceptual and methodological advances in Social Impact Assessment.** In Vanclay, F. & Becker, H.A. 2003. *The International Handbook for Social Impact Assessment*. Cheltenham: Edward Elgar Publishing Limited.

Vanclay, F., Esteves, A.M., Aucamp, I. & Franks, D. 2015. **Social Impact Assessment: Guidance for assessing and managing the social impacts of projects**. Fargo ND: International Association for Impact Assessment.

Van Zyl, H. & Kinghorn, J. 2022. **The proposed Hoogland Wind Farms and Grid Connections. Southern cluster: Hoogland 3 Wind Farm and Hoogland 4 Wind Farm.** Socio-economic impact assessment report. Independent Economic Researchers for SLR consulting