Final Scoping Report

FINAL SCOPING REPORT FOR THE PROPOSED BOLUBEDU SOLAR PARK ON REMAINDER OF THE FARM KROMRIVIERFONTEIN 360 LT, AND REMAINDER OF THE FARM WORCESTER 200 LT, LIMPOPO PROVINCE

Short name: Bolobedu Solar Park

February 2016

Commissioned by: Ms. Mikateko Gail Nelwamondo
Document version 2.0 – Final
Compiled by: HP Jannasch & EA Grobler

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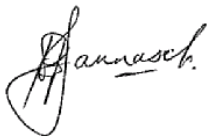

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Final Scoping Report:

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DOCUMENT HISTORY

Report No	Date	Version	Status
1.0	January 2016	1.0	Consultation Scoping Report
2.0	February 2016	2.0	Final Scoping Report

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1 OBJECTIVE OF THE SCOPING PROCESS

According to Regulation No R 982 of 4 December 2014, the objective of the scoping process is to, through a process of consultation:

a. Identify the policies and legislation relevant to the study
b. Motivate the need and desirability of the proposed activity including the need and desirability of the activity in the context of the preferred location
c. Identify and confirm the preferred activity and technology alternative through an impact assessment and ranking process
d. Identify and confirm the preferred site trough a detailed selection process which includes an impact assessment and risk ranking process which includes cumulative impacts and a ranking process of all the identified alternatives focussing on the geographical, physical, biological, social, economic and cultural aspects of the environment.
e. Identify the key issues to be addressed in the assessment phase
f. Agree on the level of assessment to be undertaken, including the methodology to be applied, the expertise required, as well as the extent of further consultation to be undertaken to determine the impacts and risks that the activity will impose on the preferred site through the life of the activity. This must include the nature, significance, consequence, extent, duration and probability of the impacts to inform the location of the development within the preferred site
g. Identify suitable measures to avoid, manage or mitigate identified impacts and determine the extent of the residual risks that need to be managed and monitored.

2 DETAILS OF THE ENVIRONMENTAL ASSESSMENT PRACTITIONER (EAP)

Name of EAP: AGES – Engela Grobler and Hein Jannasch
Contact details of EAP:

Physical Address: 120 Marshall Street,
Polokwane, 0699
Telephone number: 015 291 1577
Fax number: 015 291 1577

Expertise of EAP: A Master's Degree in Environmental Management and 7 years of experience with the management and conducting of EIA's. A number of renewable energy projects which participated in the IPP Programme, issued 3rd August 2011 by the Department of Energy have been awarded Preferred Bidder Status. Curriculum Vitae of EAP is included in Appendix A.

4 LOCATION OF ACTIVITY

4.1 SURVEYOR GENERAL 21 DIGIT CODES OF DEVELOPMENT AREAS

Kromrivierfontein 360 LT -	T0LT00000000036000000
Worcester 200 LT	T0LT00000000020000000

4.2 PHYSICAL ADDRESS AND FARM NAME

Remainder of Kromrivierfontein 360 LT and remainder of Worcester 200 LT, Limpopo Province, Greater Letaba local Municipality, Mopani District Municipality, Limpopo Province.

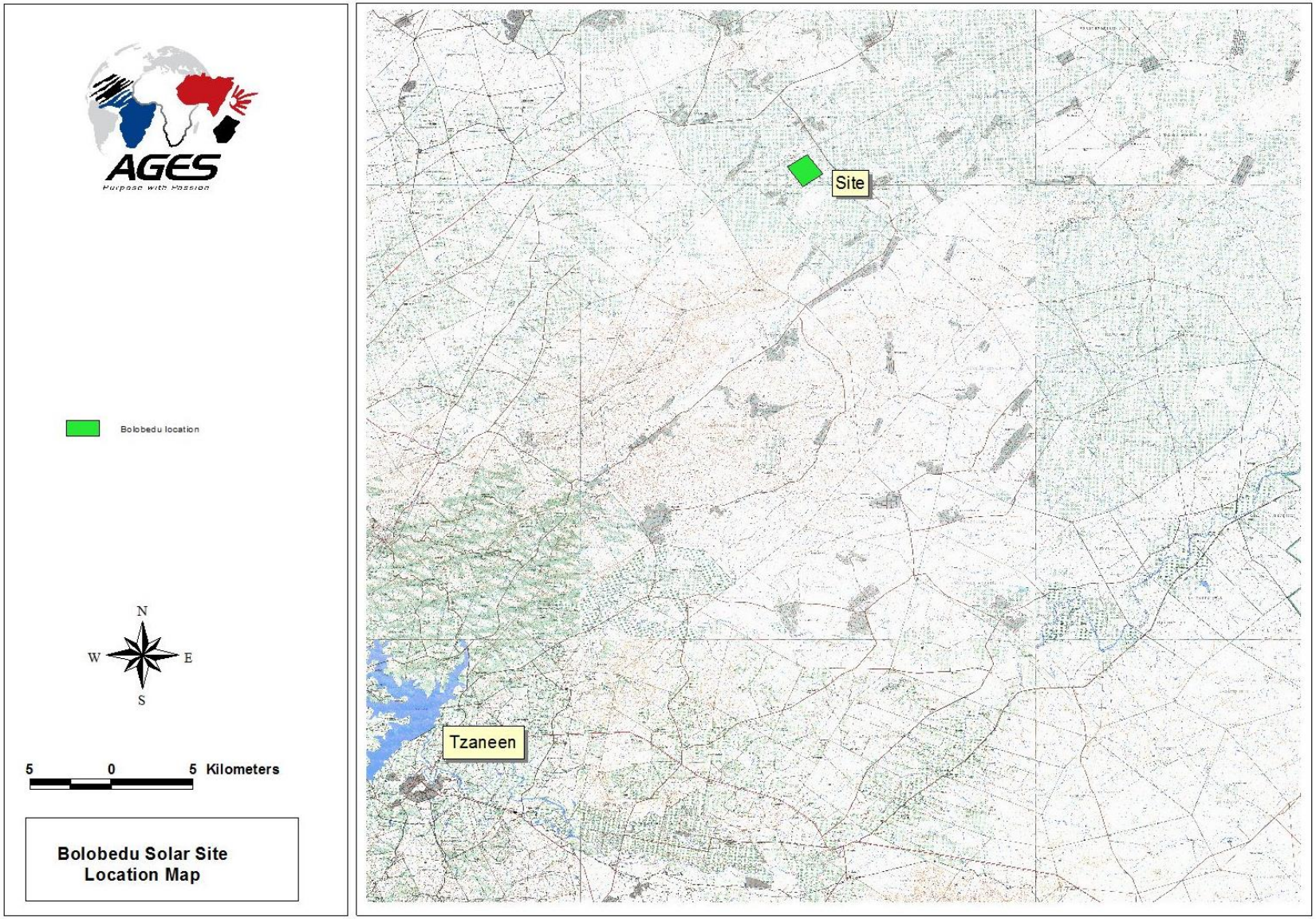
4.3 COORDINATES OF PROPERTY BOUNDARIES

South West Corner:	23º30'06.88"S
	30º22'20.25"E
South East Corner:	23º29'40.91"S
	30º22'59.12"E
North West Corner:	23º29'26.55"S
	30º21'48.98"E
North East Corner:	23º29'03.07"S
	30º22'28.80"E

The proposed development site is located 49km south west of Giyani and 75 north east of Tzaneen. Modjadjiskloof is 58km south west of the project site. The proposed development site is located on communal land and is surrounded by rural villages.

5 PLAN OF THE PROPOSED ACTIVITY

Figure 1 Location of the proposed Bolobedu Solar Park



6 SCOPE OF THE PROPOSED ACTIVITY

6.1 LISTED ACTIVITIES TRIGGERED IN TERMS OF NEMA

Relevant notice	Description
GN R.983 Item 11 (i) ***The development of facilities or infrastructure for the transmission and distribution of electricity -*** ***(i) outside urban areas or industrial complexes with a capacity of more than 33 but less than 275 kilovolts.***	Bolobedu Solar Park will be connected to the **Eskom Bolobedu distribution substation**, directly adjacent to the east of the project site, via a new 132 kV power line less than 500 m long
GN R.983, Item 12 (xii) ***The development of -*** ***(xii) infrastructure or structures with a physical footprint of 100 square metres or more;*** ***where such development occurs -*** ***(a) within a watercourse;***	The Photovoltaic Power Plant and connection infrastructure will interfere with drainage lines / wetlands / pans / watercourses. An Ecological Impact Assessment was conducted on the property and a wetland specialist was appointed to conduct a Wetland Delineation Study.
GN R.983, Item 19 (i) ***The infilling or depositing of any material of more than 5 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 5 cubic metres from -*** ***(i) a watercourse***	The Photovoltaic Power Plant and connection infrastructure will interfere with drainage lines / watercourses and material will be needed during the construction period of the proposed Solar Park. An Ecological Impact Assessment was conducted on the property and a wetland specialist was appointed to conduct a Wetland Delineation Study.
GN R.983 Item 24 (ii) ***The development of –*** ***(ii) a road with a reserve wider than 13,5m, or where no reserve exists where the road is wider than 8m.***	Access to the Bolobedu Solar Park will be from a secondary road from R81. During the construction phase, the road reserve may be wider than 13.5 meters in order to allow the transportation of abnormal loads. Internal roads will be maximum 8.0 m wide with a road reserve maximum 12.0 m wide.
GN R.984 Item 1 ***The development of facilities or infrastructure for the generation of electricity from a renewable resource where the electricity output is 20 MW or more***	The project will consist of construction, operation and maintenance of a Photovoltaic (PV) Power Plant with a maximum generation capacity up to 75 MW with associated infrastructure and structures and will be called Bolobedu Solar Park.
GN R.984 Item 15 ***The clearance of an area of 20 ha or more of indigenous vegetation***	The Photovoltaic Power Plant with associated infrastructure and structures will be constructed and operated on a footprint bigger than 20 ha (± 200 ha) and the required footprint will have to be cleared from existing bushes and trees.

7 LEGAL AND POLICY REQUIREMENTS

The following is a broad overview of the relevant policy and legal requirements related to the environment, applicable to the proposed project. Legislation is not limited to this list:

Table 1: Review of relevant legislation

National Legislation
Constitution of the Republic of South Africa (Act no. 108 of 1996)
Fencing Act (Act no. 31 of 1963)
Conservation of Agricultural Resources Act (Act no. 43 of 1983) Regulation 15 of GN R0148
Environment Conservation Act (Act no. 73 of 1989)
National Water Act (Act no. 36 of 1998)
National Forests Act (Act no. 84 of 1998)
National Environmental Management Act (Act no. 107 of 1998) NEMA EIA Regulations 2014 (GN R. 982, 983, 984, 985 of 4 December 2014)
National Heritage Resources Act (Act no. 25 of 1999)
National Environmental Management: Biodiversity Act (Act no. 10 of 2004) GN R150: Commencement of Threatened and Protected Species GN R15: Lists of critically endangered, vulnerable and protected species GN R152: Threatened Protected Species Regulations
National Environmental Management: Air Quality Act (Act no. 39 of 2004)
National Environmental Management: Waste Management Act (Act no. 59 of 2008) GN921 of 29 November 2013-Listed activities
National Veld and Forest Fires Act, 1998 (Act 101 of 1998)
Limpopo Environmental Management Act (2004)
Occupational Health and Safety Act (Act No. 85 of 1993)

Guideline Documents
South African National Standard (SANS) 10328, Methods for environmental noise impact assessments in terms of NEMA no. 107 of 1998

8 NEED/DESIRABILITY FOR PHOTOVOLTAIC POWER GENERATION AT BOLOBEDU

South Africa currently relies principally on fossil fuels (coal and oil) for the generation of electricity. At the present date, Eskom generates approximately 95% of the electricity used in South Africa. On the other hand, South Africa has a largely unexploited potential in renewable energy resources such as solar, wind, biomass and hydro-electricity to produce electricity as opposed to other energy types (fuel or coal).

South Africa's electricity supply still heavily relies upon coal power plants, whereas the current number of renewable energy power plants is very limited. In the last few years, the demand for electricity in South Africa has been growing at a rate approximately 3% per annum.

These factors, if coupled with the rapid advancement in community development, have determined the growing consciousness of the significance of environmental impacts, climate change and the need for sustainable development. The use of renewable energy technologies is a sustainable way in which to meet future energy requirements.

The REIPP Procurement Programme, issued on 3rd August 2011, plans the commissioning of 3725 MW of renewable projects (1450 MW with solar photovoltaic technology) capable of beginning commercial operation before the end of 2017. The Department of Energy has already announced the intention to procure an additional **3,600 MW** of renewable energy projects by **2020** (DOE Media Statement of 12 December 2014).

Therefore, the development of photovoltaic power plants will represent a key feature in the fulfilment of the proposed target goal and the reduction of CO2 emissions. The purpose of the Bolobedu Solar Park is to add new capacity for the generation of renewable electric energy to the national electricity supply in compliance with the IPP Procurement Programme.

The use of solar radiation for power generation is considered as a non-consumptive use and a renewable natural resource which does not produce greenhouse gas emissions. The generation of renewable energy will contribute to the growth of South Africa's electricity market, which has been primarily dominated up to this date by coal-based power generation. With specific reference to photovoltaic energy, and the proposed project, it is important to consider that South Africa has one of the highest levels of solar radiation in the world.

The reasons for the location of the project in the selected area can be synthesized as follows:

- low requirement for municipal services;
- compliance with national and provincial energy policies and strategies;
- no impact on people health and wellbeing;
- no waste and noise;
- no impact on air quality;
- compatibility with the ecosystem and the surrounding landscape;
- Likelihood of social and economic development of marginalized, rural communities.

9 CONSIDERATION OF ALTERNATIVES

9.1 DETAILS OF ALTERNATIVES CONSIDERED

The location of the proposed site has been considered mainly due to the connectivity to the Eskom grid via the Bolobedu sub-station. The proposed property is on communal land and is surrounded by six rural villages including Ditshoseng, Ga-Femane, GaRamaroka, Lebaka, Mohlabaneng and Xawela. The project area falls under the jurisdiction of the Modjadji Traditional Authority and all proposals should be directed through the Traditional Authority and its prescribed procedures. This include the involvement of the representatives of each of the villages that are adjacent to the proposed project.

The village closest to the project is Mohlabaneng and the chairperson of the Mohlabaneng Tribal Authority has already been engaged directly with regard to this project.

The size of the area to be used for the purpose of the solar plant is 200 ha and the exact location of the planned development area was solely based on the possibility of connection to the Bolobedu Sub-Station.

An Ecological Impact Assessment as well as a Wetland Delineation study were conducted. Based on the findings in these two reports, a second alternative is no proposed to the applicants. It was found that a number of tributaries from the Molototsi River bisects the proposed development site from West to East. These drainage channels are considered water courses with riparian woodland and a band of 30 meters was delineated around the periphery of the riparian zones to act as a buffer zone.

After this delineation was considered it was found that the development site would not be suitable in terms of size, for the establishment of a 75mW Solar Plant. An alternative is now being investigated to increase the development area to the west in order to have enough surface area as needed for a 75mW PV power plant whilst avoiding the drainage channels and buffer zones.

The information as received in the ecological and wetland delineation reports will be used as a basis in order to determine an alternative site lay out.

9.2 DETAILS OF PUBLIC PARTICIPATION PROCESS UNDERTAKEN

The public participation process was followed according to Chapter 6 of the New EIA Regulations (2014). Notification posters were put up on site as well as in other areas of the development site on 6 October 2015. The poster notifications were both in English and Sepedi. Advertisements were published in two newspapers in English and Sepedi. The first was published on 8 October 2015 in the Review and the second advertisement was published on 9 October 2015 in the Capricorn Voice. Background Information Documents (BIDs) were sent to the relevant Government Departments. There was direct consultation with the chairperson of the Mohlabaneng Tribal Authority and the kgoshi of the Mohlabaneng tribe on 6 October 2015. (BIDs were given to the chairperson of the Mohlabaneng Tribal Authority to distribute). There will be further consultation with the Mohlabaneng tribe as well as with representatives of the other communities in the area. There will also be liaising with the Modjadji Tribal Authority and the Department of Co-Operative Governance, Human Settlements and Traditional Affairs (COGHSTA) in order to obtain the necessary community resolution in order to proceed with the project. The community resolution will be regarded the landowner's consent as the land to be used for the proposed development is tribal land.

The initial public participation process was from 13 October 2015 until 13 November 2015. The Draft Scoping Report was available for comments from 7 December 2015 until 1 February 2016. The period from 15 December 2015 until 5 January 2016 was excluded from this time period.

During the commenting period on the draft scoping report only two letters were received, containing comments. One was from the Department of Environmental Affairs and the other was from the Limpopo Department of Economic Development, Environment and Tourism.

A meeting was held at the Mohlabaneng tribal office on Sunday 21 February 2016. This meeting was supposed to be attended by the Department of Rural Development in order to discuss the community resolution, amongst others. However, they had to cancel but the EAP and applicant still attended the meeting.

The EAP presented the project to the community members and there was a discussion between the EAP, applicant and the community with regard to the application. The site lay out plan was discussed as well as the changes made to the lay out plan. The attendance register and minutes of the meeting is included in Annexure C. Issues raised at the meeting is discussed in the next section.

Another meeting has been arranged for 3 April 2016 and the Department of Rural Development should then be in attendance to finalize the community resolution.

9.3 SUMMARY OF ISSUES RAISED BY INTERESTED AND AFFECTED PARTIES

There are no other registered I&APs except for the local community and their comments and issues area listed in the minutes of the meeting held on Sunday 21 February 2016.

The issues mentioned include the following:

- Land no longer available for agricultural purposes including grazing and crop production.
- Job opportunities.
- Skills development and program.
- Direct benefits to the local community.
- Long term benefits to the local community as opposed to short term benefits.
- Level of consultation with local community.
- Investigation into the direct impacts the proposed development will have on the local community.

It is clear from the abovementioned list that the issues in terms of the process include mostly socio-economic aspects. A socio-economic assessment was done and will be summarized and included in the EIA Report. However, the economist appointed to do the report knows the Limpopo Province very well and is aware of the challenges in the rural areas in the Limpopo Province. He will be further consulted and further negotiations will take place between the applicant and the local community.

The specific benefits to the community will be discussed with the community after it has been established what their specific needs are. At the next meeting the applicant, together with the EAP, will present to the community programs and projects designed specifically for this area and its communities.

9.4 ENVIRONMENTAL ATTRIBUTES ASSOCIATED WITH THE ALTERNATIVES

Alternative 1 can be considered to be the original site as identified before any specialist studies were conducted. It is approximately 200 ha in size and is directly adjacent to the Bolobedu Eskom to the West of the substation.

Alternative 2 is the original site but with another 100 ha added to the development area, to the west.

On the Alternative 1 site there is a southern water course and dam. This is in a highly eroded state and is classified as having a Seriously Modified PES (Present Ecological State). These areas have a low Ecological Importance and Sensitivity and is not sensitive to flow and habitat modifications. They also play an insignificant role in moderating the quantity and quality of water flow in major rivers.

There are also non-perennial water courses and riparian woodland in the northern section of the proposed development area. These water courses have a Largely Natural Present Ecological State and a Moderate Ecological Importance and Sensitivity. These water courses support ecosystem functioning, especially in terms of connectivity towards the larger area. Both these demarcated areas in the north and to the south should be excluded from the development. This leads to a markedly smaller area available for the development footprint. For the project to be financially (and otherwise) viable the footprint area needed for a 75mW solar plant is at least 200 ha.

With the exclusion of the demarcated wetland and drainage line areas, the area is no longer large enough to support a 75mW PV power plant and thus a second alternative had to be investigated.

Alternative 2 relates to the area first area earmarked for the proposed development, excluding the water courses and dam but with an extension of the area to the west to include another 100 ha to the west. There are also drainage lines bisecting this area which is also to be excluded from any developments. However, the new area together with the original area will be enough for a 75mW PV power plant.

9.5 IMPACTS AND RISKS IDENTIFIED WITH EACH ALTERNATIVE

Potential environmental impacts associated with a PV Solar Park include mainly the following:

- Visual impact
- Impact on biodiversity (including the potential loss of plant life and animals)
- Impact on soils (mainly in terms of soil erosion)
- Impact on water resources in terms of water quantity and water quality
- Impact on agricultural resources which will no longer be available.
- Potential impact on heritage resources and potential occurrences of graves as this is a rural, undeveloped area.
- Potential impacts on river systems, drainage channels and wetlands.
- Socio-economic impacts, which is probably very positive as the development site is located in an area with a high unemployment rate and very low income households.

9.5.1 DEGREE TO WHICH THE IMPACTS CAN BE REVERSED

Most of the possible impacts can be reversed to a certain extent and include the following.

- Visual impact: once solar panels are removed visual impact will be insignificant.
- Biodiversity: if the solar panels are moved the area will revert back to its original state and therefore the impact on biodiversity is reversible.
- Soils and Agricultural potential: the solar park leads to an area being unavailable for agricultural purposes. However, once the solar park has been removed, the land will again be available for agricultural purposes.
- Water resources: a solar park does not generate any waste and/or emissions and would therefore not have an impact on water resources. However, there might be an impact on the dynamics of the drainage lines of the area but once the solar panels are removed, it will return to its original state.
- Heritage resources: subterranean heritage resources will not be impacted on. However, if graves and/or other significant heritage resources are found, the proper processes will be followed in order to either preserve, re-locate or document it.
- Socio-economic impact: this impact will be positive and it would be preferable that this impact not be reversed.

9.5.2 DEGREE TO WHICH THE IMPACTS MAY CAUSE IRREPLACEABLE LOSS OF RESOURCES

It is foreseen that there will be no irreplaceable loss of resources as a result of any of the potential impacts of the proposed solar park.

However, a complete impact assessment will be done and it will be numerically calculated which impacts will be significant and which won't.

9.5.3 DEGREE TO WHICH THE IMPACTS CAN BE AVOIDED, MANAGED OR MITIGATED

Most of the potential impacts can either be avoided, managed or mitigated. In order to lower the significance of the visual impact, a vegetation buffer/screen can be implemented to reduce the visual impact. However, the details of this can only be provided once the specialist Visual Impact Assessment has been conducted. Impacts on Soils, Biodiversity, Water Resources (including drainage lines and rivers) and heritage resources can all be mitigated. Specific mitigation measures for all these impacts will be discussed, in detail in the EIA Report. Where impacts can be avoided, it will be done and the detail of this will also be included in the EIA Report.

9.6 METHODOLOGY USED IN RANKING THE IMPACTS AND RISKS ASSOCIATED WITH THE ALTERNATIVES

To assess the impacts on the environment, the process will be divided into two main phases namely the Construction phase and the Operational phase. The activities, products and services present in these two phases will be studied to identify and predict all possible impacts.

In any process of identifying and recognising impacts, one must recognise that the determination of impact significance is inherently an anthropocentric concept. Duinker and Beanlands, (1986) in DEAT 2002. Thompson (1988), (1990) in DEAT 2002 stated that the significance of an impact is an expression of the cost or value of an impact to society.

However, the tendency is always towards a system of quantifying the significance of the impacts so that it is a true representation of the existing situation on site. This will be done by using where ever possible, legal and scientific standards which are applicable

The significance of the aspects/impacts of the process will be rated by using a matrix derived from Plomp (2004) and adapted to some extent to fit this process. These matrixes use the consequence and the likelihood of the different aspects and associated impacts to determine the significance of the impacts.

The consequence matrix use parameters like severity, duration and extent of impact as well as compliance to standards. Values of 1-5 are assigned to the parameters that are added and averaged to determine the overall consequence. The same process is followed with the likelihood that consists of two parameters namely frequency and probability. The overall consequence and the overall likelihood are then multiplied to give values ranging from 1 to 25. These values as shown in the following table are then used to rank the significance. It must be said however that in the end, a subjective judging of an impact can still be done, but the reasons for doing so must be qualified.

Significance ratings (Plomp 2004)

Significance	Low -	Low-Medium -	Medium -	Medium-High -	High -
Overall Consequence X Overall Likelihood	1-4.9	5-9.9	10-14.9	15-19.9	20-25

Significance	Low +	Low-Medium +	Medium +	Medium-High +	High +
Overall Consequence X Overall Likelihood	1-4.9	5-9.9	10-14.9	15-19.9	20-25

Description of the parameters used in the matrixes

Severity:

Low	Low cost/high potential to mitigate. Impacts easily reversible, non-harmful insignificant change/deterioration or disturbance to natural environments
Low-medium	Low cost to mitigate Small/ potentially harmful Moderate change/deterioration or disturbance to natural environment.
Medium	Substantial cost to mitigate. Potential to mitigate and potential to reverse impact. Harmful Significant change/ deterioration or disturbance to natural environment
Medium-high	High cost to mitigate. Possible to mitigate Great/Very Harmful Very significant change/deterioration or disturbance to natural environment
High	Prohibitive cost to mitigate. Little or no mechanism to mitigate. Irreversible. Extremely Harmful Disastrous change/deterioration or disturbance to natural environment

Duration:

Low	Up to one month
Low-medium	One month to three months
Medium	Three months to one year
Medium-high	One to ten years
High	Beyond ten years

Extent:

Low	Within industrial/construction areas
Low-medium	Within surrounding area
Medium	Within Saldanha local municipality area
Medium-high	Within West Coast district municipality
High	National

Frequency:

Low	Once/more a year or once/more during operation
Low-medium	Once/more in 6 months
Medium	Once/more a month
Medium-high	Once/more a week
High	Daily

Probability:

Low	Almost never/almost impossible
Low-medium	Very seldom/highly unlikely
Medium	Infrequent/unlikely/seldom
Medium-high	Often/Regularly/Likely/Possible
High	Daily/Highly likely/definitely

Compliance:
The following criteria are used during the rating of possible impacts.

Low	Best Practise
Low-medium	Compliance
Medium	Non-compliance/conformance to policies etc. - internal
Medium-high	Non-compliance/conformance to legislation etc. - external
High	Directive, prosecution of closure or potential for non-renewal of licences or rights.

7.1 ASSESSMENT CRITERIA

The terms of reference for the study include criteria for the description and assessment of environmental impacts. These criteria are drawn from the *Integrated Environmental Management Guidelines Series, Guideline 5: Assessment of Alternatives and Impacts*, published by the DEA in terms of the Environmental Impact Assessment. These criteria include:

Table 2: Impact Assessment Criteria

Nature of impact This is an appraisal of the type of effect the proposed activity would have on the affected environmental component. The description should include what's being affected and how.		
Extent The physical and spatial size of the impact.	**Site**	The impact could affect the whole, or a measurable portion of the above-mentioned properties.
	Local	The impacted area extends only as far as the activity, e.g. a footprint.
	Regional	The impact could affect the area including the neighbouring farms, the transport routes and the adjoining towns.
Duration The lifetime of the impact; this is measured in the context of the lifetime of the base.	**Short term**	The impact will either disappear with mitigation or will be mitigated through natural process in a span shorter than any of the phases.
	Medium term	The impact will last up to the end of the phases, where after it will be entirely negated.
	Long term	The impact will continue or last for the entire operational life of the development, but will be mitigated by direct human action or by natural processes thereafter.
	Permanent	The only class of impact, which will be non-transitory. Mitigation either by man or natural process will not occur in such a way or in such a time span that the impact can be considered transient.
Intensity	**Low**	The impact alters the affected environment in such a way that the natural processes or functions are not affected.
	Medium	The affected environment is altered, but function and process continue, albeit in a modified way.
	High	Function or process of the affected environment is disturbed to the extent where it temporarily or permanently ceases.
Probability The likelihood of impacts occurring. Impact may occur for any length of time during the life cycle of activity and not at any given time.	**Improbable**	The possibility of the impact occurring is very low, due either to the circumstances, design or experience.

	Probable	There is a possibility that the impact will occur to the extent that provisions must be made therefore.
	Highly probable	It is most likely that the impacts will occur at some or other stage of the development. Plans must be drawn up before the undertaking of the activity.
	Definite	The impact will take place regardless of prevention plans, and there can only be relied on mitigation actions or contingency plans to contain the effect.
Determination of significance. Significance is determined through a synthesis of impact characteristics. Significance is an indication of the importance of the impact in terms of both physical extent and time scale, and therefore indicates the level of mitigation required.	**No significance**	The impact is not substantial and does not require any mitigation action.
	Low	The impact is of little importance, but may require limited mitigation.
	Medium	The impact is of importance and therefore considered to have a negative impact. Mitigation is required to reduce the negative impacts to acceptable levels.
	High	The impact is of great importance. Failure to mitigate, with the objective of reducing the impact to acceptable levels, could render the entire development option or entire project proposal unacceptable. Mitigation is therefore essential.

The general approach to this study has been guided by the principles of Integrated Environmental Management (IEM). In accordance with the IEM Guidelines issued by the DEA, an open, approach, which encourages accountable decision-making, was adopted.

The principles of the IEM require:

- informed decision-making;
- accountability for information on which decisions are made;
- a broad interpretation of the term “environment”;
- an open participatory approach in the planning of proposals;
- consultation with I&APs;
- due consideration of alternatives;
- an attempt to mitigate negative impacts and enhance positive impacts of proposals;
- an attempt to ensure that social costs of developments are outweighed by the social benefits;
- democratic regard for individual rights and obligations;
- compliance with these principles during all stages of the planning, implementation and decommissioning of proposals; and
- the opportunity for public and specialist input in the decision-making process.

9.7 POSITIVE AND NEGATIVE IMPACTS THAT THE PROPOSED ACTIVITY AND ALTERNATIVES WILL HAVE ON THE ENVIRONMENT AND THE COMMUNITY

The actual impact assessment will be done during the next phase of the EIA process. Some of the specialist’s studies still need to be obtained. All information from the specialists will be used to do the actual assessment using the method as described above.

9.8 OUTCOME OF THE SITE SELECTION MATRIX

The outcome of the selection matrix will be described in the EIA report.

9.9 MOTIVATION FOR NOT INVESTIGATING ALTERNATIVES

As a result of the findings in the Ecological and Wetland and Riparian Delineation Reports, it was found that the preferred alternative will not be viable in its entirety and therefore the applicant was informed of this. The site lay out plan as based on this information.

The most important factor in the selection of a development site is firstly the location of the substation and secondly the inputs from the local communities and representatives of the local villages in the area.

The area is rural and consist of tribal land under the old Lebowa Government. In cases where the land is tribal land a community resolution is needed and this process is facilitated by the Department of Land Affairs. The inputs from the local community and community leaders will determine to a very large degree which areas will be made available for a development such as the Bolobedu Solar Park.

9.10 CONCLUDING STATEMENT INDICATING THE PREFERRED ALTERNATIVE AND LOCATION OF THE ACTIVITY

If the local communities demarcate an area for the development of a solar park and chooses to use the rest of the land, under their jurisdiction, for agricultural purposes (or any other purpose), the project will no longer be viable if there is insistence on an alternative site as the community will not agree to it.

The location of the preferred alternative is based on the location of the Bolobedu substation as well as an agreement with the local communities on the proposed use of the land for a solar park.

The community resolution, which is to be signed by all six communities in the area, under the Modjadji Traditional Authority, with the assistance of the Department of Rural Development, will be instrumental in the final decisions to be made in terms of the locality of the Bolobedy Solar Park.

11 PLAN OF STUDY FOR THE ENVIRONMENTAL IMPACT ASSESSMENT PROCESS

The following possible Key environmental impacts were identified:

ENVIRONMENTAL ISSUES	POSSIBLE CAUSE	POTENTIAL IMPACTS
Air Pollution and noise		
Dust	• Construction machines and vehicles during clearing and construction of the croplands	• Health problems • Air pollution • Public nuisance
Emissions	• During operation of construction equipment. • Spraying of insecticides and herbicides during operation • During veld fires	
Noise	• Construction noise • Farming activities during operational phase	
Water quality		
Pollution of water sources Pollution by E.coli	• Spillages of fuel & oil from vehicles during construction • Pollution from solid general waste if not removed regularly • By using insecticides and herbicides • Poorly planned and managed sanitation facilities	• Pollution of surface and groundwater • Health risk • Lower water quality • Soil degradation • Siltation of aquatic system
Silt deposition in surface water drainage lines	• Erosion from area during run-off (Rain)	
Water quantity		
Impact on amount of water resources available Over use of water allocation	• Use of water during construction of the PV solar facility • Water use during operation • Pumping of more water than the system can deliver	• Loss of a scarce resource • Increased pressure on water supply sources • Drop of water table
Land/Soil degradation		
Soil contamination and degradation	• Spillages of oil, chemicals from machinery and vehicles during construction • Site clearing during construction • Use of Pesticides and Fertilizers • Loss of Agricultural potential of soil • Erosion if storm water is not correctly managed	• Pollution of soil • Soil degradation • Loss of topsoil • Effect soil characteristics, ecology & groundwater • Loss of topsoil

ENVIRONMENTAL ISSUES	POSSIBLE CAUSE	POTENTIAL IMPACTS
Biodiversity		
Decline in fauna and flora diversity	• Clearing of site for construction • Loss of habitat due to construction of panels	• Loss of biodiversity • Loss of habitat • Negative impact on biodiversity • Negative impact on rare / endangered/ endemic species and habitats
Cultural/Heritage		
Possible loss of heritage sites	• Damage during construction or operation	• Possible loss of cultural heritage sites
Visual impact		
Change in the visual characteristics of the site	• Clearing of vegetation for panels • Presence of Solar facility	• Visual intrusion
Socio-economic impacts		
Job creation	• Increase in temporary and permanent work opportunities during the construction and operational phases	• Socio- economic benefit

11.1 DESCRIPTION OF ALTERNATIVES TO BE CONSIDERED AND ASSESSED

The only other alternative being considered and investigated is the option of changing the lay out and enlarging the proposed development area in order to ensure enough space is available for the implementing of buffer zones next to drainage lines and other drainage features. This alternative will be investigated and assessed in detail in the EIA Report.

11.2 DESCRIPTION OF ASPECTS TO BE ASSESSED DURING THE EIA PROCESS

The potential aspects to assess during the EIA process may include:

- Soils & agricultural potential;
- Ground water aspects;
- Road system and traffic aspects;
- Air quality and potential emissions aspects;
- Geology, soils and erosion;
- Avifauna aspects;
- Vegetation aspects;
- Heritage resources aspects;
- Noise aspects;
- Tourism aspects;
- Socio-economic aspects;
- Visual aspects.

These aspects will be assessed and rated according to a matrix to determine the significance of each identified aspect and its related impacts on the environment

11.3 ASPECTS TO BE ASSESSED BY SPECIALISTS

Due to the nature of the project, a number of specialist studies are required in the EIA process in order to investigate the potential environmental impacts associated with the proposed development.

Detailed studies on potentially significant impacts will be carried out to address these impacts throughout the EIA process. The public participation process provides valuable information in the identification of issues requiring further and specific investigation throughout the EIA process. Potential aspects to assess by specialists during the EIA process will include:

- Soils & agricultural potential;
- Ground water aspects;
- Geology, soils and erosion;
- Avifauna aspects;
- Vegetation aspects;
- Heritage resources aspects;
- Socio-economic aspects;
- Visual aspects

The specialist reports will be included in the consultation Environmental Impact Assessment Report (EIAR) and in the final EIAR to be submitted to the Authorities and the registered Interested and Affected Parties

11.4 TERMS OF REFERENCE FOR SPECIALIST STUDIES

The physical, biological, social, economic and cultural aspects that were identified in the scoping process will be addressed in detail in the Environmental Impact Assessment report.

The following specialist investigations will be conducted to aid in the description of the environment as well the identification and rating of impacts:

11.4.1 ECOLOGICAL ASSESSMENT – DR BUKS HENNING (EXIGO)

- A detailed ecological assessment and sensitivity analysis was conducted on the study area to anticipate and identify significant environmental issues and impacts of the development on the environment (flora & fauna). Mitigation measures were proposed.
- The following methodology was followed:
    - Baseline study of the vegetation of the proposed development footprint site;
    - Condition of all vegetation will be assessed and mapped;
    - Plant communities will be identified on site and mapped. From this map sensitive areas and a sensitivity map will be produced;
    - A plant species list for the site will be provided;
    - A description of the status and structure of the vegetation;
    - Provide a scoping on the potential mammals that might occur on the site and provide management measures. Field surveys of the larger mammals as well as the birds and reptiles will also be done for the area;
    - Potential impacts of the development on the vegetation and general ecology will be assessed;
    - Management and mitigating measures to be implemented during the development phases will be provided.
- The protected tree species were surveyed.

See Annexure D for the Ecological Impact Assessment.

11.4.2 HERITAGE ASSESSMENT

A Phase I heritage assessment (Scan) will be conducted on the footprint and authorisation will be obtained from SAHRA. If any graves or significant archaeological sites are discovered a permit needs to be obtained from SAHRA to move or destroy if it cannot be incorporated into the layout.

The Phase 1 Archaeological Impact Assessment will function subject to the following **terms of reference:**

- Provide a description of archaeological artefacts, structures (including graves) and settlements which may be expected along the project area;
- Provide a cultural context and provenience for archaeological artefacts, structures (including graves) and settlements, in the project area and in the surrounding landscape by means of a detailed desktop background study;
- Assess the nature and degree of significance of such resources within the area;
- Assess any possible developmental impacts, present and future, on the archaeological and historical remains within the larger landscape;
- Propose possible heritage management measures for following phases of heritage mitigation and management.
- Liaise and consult with the relevant Heritage Resources authority with regard to the site investigation.

11.4.3 SOCIO ECONOMIC ASPECTS-

The purpose of this assessment is to document socio-economic issues at the conceptual level that should be considered as part of the environmental impact assessment of the proposed Bolobedu Solar Park, under the jurisdiction of Greater Letaba Local Municipality in Mopani District Municipality and Limpopo Province. This report is one of several documents that consider the environmental impact of the proposed project from different perspectives, with specific consideration of the IPP procurement programme requests. Relevant development planning documents will be used and reference will be made to recent environmental impact assessments of similar projects at other locations in the country. Experts working on other elements of the Bolobedu Solar Park Environmental Impact Assessment will be also consulted.

11.4.4 VISUAL IMPACT ASSESSMENT –

The visual characteristics (form, shape, colour and texture) to be introduced by the proposed project would mainly consist of a dark black-blue band, when viewed from the PV side of the panels, and a greyish colour, when viewed from the 'back' of the panels. The greyish colour, from the zinced steel or aluminium frames and support structures, would at first be bright for up to approximately 3 months after installation where after it would become a dull grey due to the oxidation of the metal. These colours would appear as a narrow band in the horizontal plane where the solar panels protrude above and through breaks in the vegetation line. From close up, this band of colour would be texturized with fine lines in various angles. As one moves further away from the project components, these lines would fade into a fine texture and eventually into a block (area) of colour. During times of overcast skies, the PV modules would reflect the white of the clouds, drifting or hovering above, and then appear lighter in colour. At the time of such an occurrence the effect would be similar to when sunlight is reflected off a light coloured wall, which creates a stronger colour contrast in the scene than the standard black-blue band.

The lighter colour would also be more visible and may appear to be 'glaring' due to its contrast with the darker colours of the surrounding scene. However, this effect should not be confused with 'glint' and 'glare'.

Other structures (such as the control building, office workshop and warehouse) will introduce solid, rectangular blocks of colour as well as strong angular lines. These blocks would introduce strong vertical and horizontal components to the receiving scenery.

The proposed substation and security fence would introduce a see-through, greyish 'block' (substation) or 'band' (security fence) of finely texturised lines. Due to the 'see-through' nature of this component, it will quickly fade away with distance. The fine characteristic of the loop-in-loop-out connection power lines would be the first component to get absorbed / fade away with distance. During night time, the video-surveillance system will use infra-red (or micro-wave) video-cameras, which do not need a lighting system (which could reduce the functioning). Only street lamps along internal roads, for the stretch from the main access up to the HV substation inside the property, may be switched on at night. It is assumed that both construction and decommissioning activities would be restricted to daylight hours. During operational phase, security lighting will only be activated during illegal intrusion to the property. There will be no maintenance activities taking place during night time.

METHODOLOGY

The Visual Analysis will be conducted by first identifying the area from which the proposed project would be potentially be visible within a 20km radius around the proposed project components. This Zone of Visual Influence (ZVI) will be derived from a view-shed analysis. The view-shed analysis is created through a GIS or 3D package and identifies where a particular object is visible from. This forms the study boundary of the visual assessment. Theoretically the ZVI continues as far as the eye can see. However, for practical purposes, the ZVI study boundary needs to be cut off at a certain range. In most cases (as seen in the extents of the maps in the report), this is about a +20km range from the site. The most important consideration is that the cut-off occurs well-beyond where the Magnitude of Impact map reaches Negligible.

The next step is to identify Visually Sensitive Receivers (VSRs) within this ZVI and to rate their inherent sensitivity (low / medium / high). The VSRs are broadly grouped into residential (R), Travelling (T), occupational / business (B) and open space / recreational (O) users. For simplicity, similar VSRs are often grouped together.

The Magnitude (Visual Impact Magnitude / Exposure) of the impact is then determined taking in to consideration the distance of the VSR from the proposed development as well as the size (height & width / spread) of the components of the proposed development. A large impact would be in the foreground (0m – 2km) of the viewer / covering a large area in the field of vision of the viewer. An intermediate impact would occur if the proposed development is located in the middle ground (2km - 6km) of views / covers medium sized area within the field of vision of the viewer. A small impact (6km to 12km) to negligible impact (>12km) would be when the visible components of the proposed development occurs in the background of the viewer / covers only a small area within the field of vision of the viewer. Technically the impact would still be visible / noticeable however it would for the majority of VSRs not be noticeable if not made aware of it / without the aid of binoculars. The synthesis of Sensitivity (VSR sensitivity) and Magnitude (Visual Impact Magnitude / Exposure) produces the final Relevance (Visual Impact Relevance) (also sometimes referred to in the industry as the Visual Significance). The Visual Impact Relevance ranges from Very Substantial to Insubstantial which has implications on recommended mitigation measures.

11.4.5 AVIFAUNAL ASSESSMENT –

OBJECTIVES

- Compile an avifauna scoping assessment report. Determine number of bird habitats present in the direct area of the proposed development from relevant databases and field surveys (micro-habitats);

- Determine the potential ecological impacts and actions the proposed solar development will have on the avifauna populations and recommend mitigation and monitoring guidelines.

SCOPE

Bird habitat survey – in each vegetation type/plant community on site:

a) After studying the aerial photograph to identify specific bird habitats where micro-habitats might occur to be surveyed and confirm location by making use of a Geographical Positioning System (GPS);
b) List the potential bird species present and link them to the specific potential habitats that occur as identified in the habitat survey;
c) List the bird species observed during the field survey as well as specific relevant habitat characteristics.
d) An inclusive list of priority species likely to occur there, with notes on the relative value of the site for these birds,
e) Input on likely seasonality of presence/absence and/or movements for key species,
f) Identifying any obvious, highly sensitive, no-go areas to be avoided by the development from the outset.

- Identify the impact of the proposed development on the avifauna of the area, with specific relevance to the red data birds potentially occurring in the area.
- Indicate species mitigation measures and management measures to be implemented to prevent any negative impacts on the avifauna of the area.
- Make recommendations and impact rating assessments for each impact on the avifauna.

11.4.6 HYDRO-GEOLOGICAL ASSESSMENT –

The purpose of the Hydro-Geological Assessment is to assess the impact of the proposed project on the groundwater and to determine the groundwater resource available to meet the needs of the proposed project and include the following actions to be taken.

- Evaluation of the existing use, ground water potential and water quality
- Recommendations with respect to development options
- Evaluation of the impact of groundwater abstraction
- Recommendations i.t.o. boreholes, monitoring boreholes and water use authorization.

11.4.7 WETLAND AND RIPARIAN DELINEATION

OBJECTIVES

- Conduct a desktop and field investigation to confirm the presence or absence of wetlands and riparian areas within the study area;
- Delineate and map the identified wetland areas on site;
- Classify wetlands according to their hydro-geomorphic characteristics;
- Determine the impacts associated with the proposed development on the wetlands;
- Specify mitigation measures and management plan for the wetlands on site;
- Compile a report with the findings and maps.

A wetland delineation study has already been conducted as it was found that there are drainage lines on the site and these had to be studied and taken into account in terms of land available for the proposed development as well as the consideration of alternative sites and/or lay out plans.

11.4.8 AGRICULTURAL (SOIL POTENTIAL) ASSESSMENT – DR BUKS HENNING (EXIGO)

OBJECTIVES

- Conduct a soil survey on the proposed development site and identify the different soil types / forms present on the site;
- From the soil survey results link the optimal land use and other potential uses and options to the agricultural potential of the soils by classifying the soils into different Agricultural Potential classes according to the requirements set by the Department of Agriculture, South Africa. From these results soils maps and an agricultural potential map will be compiled;
- Discussion of the agricultural potential and land capability in terms of the soils, water availability, grazing capacity, surrounding developments and current status of land;
- Identify potential impacts of the development on the soils and provide mitigation measures to manage these impacts.

11.4.9 EGINEERING GEOLOGICAL ASSESSMENT

The main objectives of the investigation were to:

- Identify on-site geotechnical constraints that may affect the proposed development;
- Comment on the suitability of the site for the proposed development as from a geotechnical perspective;
- Comment on the shallow soil excavation conditions;
- Determine the basic soil properties for guideline purposes;
- Comment on the suitability of the on-site material for general construction purposes;
- Comment on the shallow founding conditions and potential for groundwater occurrences within the zone of influence of foundation work;
- Provide possible foundation options and considerations;
- Provide the geotechnical basis for basic planning purposes;
- Make recommendations on the way forward with specific reference to required investigations and analysis required for detailed design purposes.

11.5 DESCRIPTION OF THE PROPOSED METHOD OF ASSESSING ENVIRONMENTAL ASPECTS INCLUDING ASPECTS BY SPECIALISTS

An environmental impact is defined as a change in the environment, be it the physical/chemical, biological, cultural and or socio-economic environment. Any impact can be related to certain aspects of human activities in this environment and this impact can be either positive or negative. It could also affect the environment directly or indirectly and the effect of it can be cumulative.

11.6 DESCRIPTION OF THE PROPOSED METHOD OF ASSESSING DURATION AND SIGNIFICANCE

o assess the impacts on the environment, the process will be divided into two main phases namely the Construction phase and the Operational phase. The activities, products and services present in these two phases will be studied to identify and predict all possible impacts. In any process of identifying and recognising impacts, one must recognise that the determination of impact significance is inherently an anthropocentric concept. Duinker and Beanlands, (1986) in DEAT 2002. Thompson (1988), (1990) in DEAT 2002 stated that the significance of an impact is an expression of the cost or value of an impact to society.

However, the tendency is always towards a system of quantifying the significance of the impacts so that it is a true representation of the existing situation on site. This will be done by using where ever possible, legal and scientific standards which are applicable

The significance of the aspects/impacts of the process will be rated by using a matrix derived from Plomp (2004) and adapted to some extent to fit this process. These matrixes use the consequence and the likelihood of the different aspects and associated impacts to determine the significance of the impacts.

The consequence matrix use parameters like severity, duration and extent of impact as well as compliance to standards. Values of 1-5 are assigned to the parameters that are added and averaged to determine the overall consequence. The same process is followed with the likelihood that consists of two parameters namely frequency and probability. The overall consequence and the overall likelihood are then multiplied to give values ranging from 1 to 25. These values as shown in the following table are then used to rank the significance. It must be said however that in the end, a subjective judging of an impact can still be done, but the reasons for doing so must be qualified.

Table 1: Significance ratings for negative (top) and positive (bottom) impacts (Plomp 2004)

Significance	Low -	Low-Medium -	Medium -	Medium-High -	High -
Overall Consequence X Overall Likelihood	1-4.9	5-9.9	10-14.9	15-19.9	20-25

Significance	Low +	Low-Medium +	Medium +	Medium-High +	High +
Overall Consequence X Overall Likelihood	1-4.9	5-9.9	10-14.9	15-19.9	20-25

Description of the parameters used in the matrixes

Severity:

Low	Low cost/high potential to mitigate. Impacts easily reversible, non-harmful insignificant change/deterioration or disturbance to natural environments
Low-medium	Low cost to mitigate Small/ potentially harmful Moderate change/deterioration or disturbance to natural environment.
Medium	Substantial cost to mitigate. Potential to mitigate and potential to reverse impact. Harmful Significant change/ deterioration or disturbance to natural environment
Medium-high	High cost to mitigate. Possible to mitigate Great/Very Harmful Very significant change/deterioration or disturbance to natural environment
High	Prohibitive cost to mitigate. Little or no mechanism to mitigate. Irreversible. Extremely Harmful Disastrous change/deterioration or disturbance to natural environment

Duration:

Low	Up to one month
Low-medium	One month to three months
Medium	Three months to one year
Medium-high	One to ten years
High	Beyond ten years

Extent:

Low	Within footprint area
Low-medium	Whole of site
Medium	Adjacent properties
Medium-high	Communities around site area
High	Greater Letaba Municipality area

Frequency:

Low	Once/more a year or once/more during operation
Low-medium	Once/more in 6 months
Medium	Once/more a month
Medium-high	Once/more a week
High	Daily

Probability:

Low	Almost never/almost impossible
Low-medium	Very seldom/highly unlikely
Medium	Infrequent/unlikely/seldom
Medium-high	Often/Regularly/Likely/Possible
High	Daily/Highly likely/definitely

Compliance:

The following criteria are used during the rating of possible impacts.

Low	Best Practise
Low-medium	Compliance
Medium	Non-compliance/conformance to policies etc. - internal
Medium-high	Non-compliance/conformance to legislation etc. - external
High	Directive, prosecution of closure or potential for non-renewal of licences or rights.

11.7 STAGES AT WHICH THE COMPETENT AUTHORITY WILL BE CONSULTED

The competent Authority will be consulted at the following stages:

- Pre-application consultation
- Submission of application
- Submission of Consultation Scoping Report
- Submission of Final Scoping Report
- Submission of Consultation EIA Report
- Submission of Final EIA Report
- Site visits by the competent authority

11.8 PUBLIC PARTICIPATION PROCESS DURING THE EIA PROCESS

11.8.1 NEWSPAPER ADVERTISEMENT

The proposed project was advertised in English in the "Review" of 8 October 2015 and in Sepedi in the "Capricorn Voice" of 9 October 2015 to inform people about the project and request them to identify environmental issues of concern. The IAP's were requested to register as interested and Affected Parties should they wish to remain part of the consultation process. Examples of these adverts are attached in Appendix 2.

11.8.2 SITE NOTICE

Site notices in English with a description of the activity and details of the applicant and EAP was put up at the site location on 6 October 2015. An example of this said notice as well as photos of the displayed notice is attached in Appendix 2.

11.8.3 BACKGROUND INFORMATION NOTICES.

Background Information Documents (BID's) were e-mailed or hand delivered to neighbours and interested & affected parties. Background information documents were also sent to:

- Mopani District Municipality
- Greater Letaba Local Municipality-Municipal Manager
- Greater Letaba Local Municipality-Ward Councillor-ward 21
- LEDET EIA Section
- Department of Water and Sanitation
- Department of Agriculture, Forestry and Fisheries
- ESKOM
- Department of Science and Technology
- CSIR
- Endangered Wildlife Trust
- Birdlife SA
- Department of Land Reform and Rural Development
- Modjadji tribal Authority

An example of the background information document is included in Appendix 2 as well of proof of the distribution thereof.

The initial public participation process was from 13 October 2015 until 13 November 2015. The Draft Scoping Report was available for comments from 7 December 2015 until 1 February 2016. The period from 15 December 2015 until 5 January 2016 was excluded from this time period.

During the commenting period on the draft scoping report only two letters were received, containing comments. One was from the Department of Environmental Affairs and the other was from the Limpopo Department of Economic Development, Environment and Tourism.

A meeting was held at the Mohlabaneng tribal office on Sunday 21 February 2016. This meeting was supposed to be attended by the Department of Rural Development in order to discuss the community resolution, amongst others. However, they had to cancel but the EAP and applicant still attended the meeting.

The EAP presented the project to the community members and there was a discussion between the EAP, applicant and the community with regard to the application. The site lay out plan was discussed as well as the changes made to the lay out plan. The attendance register and minutes of the meeting is included in Annexure C. Issues raised at the meeting is discussed in the next section.

Another meeting has been arranged for 3 April 2016 and the Department of Rural Development should then be in attendance to finalize the community resolution.

11.8.4 ISSUES AND RESPONSES

There are no other registered I&APs except for the local community and their comments and issues area listed in the minutes of the meeting held on Sunday 21 February 2016.

The issues mentioned include the following:

- Land no longer available for agricultural purposes including grazing and crop production.
- Job opportunities.
- Skills development and program.
- Direct benefits to the local community.
- Long term benefits to the local community as opposed to short term benefits.
- Level of consultation with local community.
- Investigation into the direct impacts the proposed development will have on the local community.

It is clear from the abovementioned list that the issues in terms of the process include mostly socio-economic aspects. A socio-economic assessment was done and will be summarized and included in the EIA Report. However, the economist appointed to do the report knows the Limpopo Province very well and is aware of the challenges in the rural areas in the Limpopo Province. He will be further consulted and further negotiations will take place between the applicant and the local community. The specific benefits to the community will be discussed with the community after it has been established what their specific needs are. At the next meeting the applicant, together with the EAP, will present to the community programs and projects designed specifically for this area and its communities.

11.8.5 SCOPING REPORT AND PLAN OF STUDY FOR EIA

The Consultation Scoping Report and Plan of Study for EIA was available for a 30 day review period to relevant government departments and registered I&AP's for comments from 7 December 2015 until 1 February 2016. The period from 15 December 2015 until 5 January 2016 was excluded from this time period.

11.9 SUITABLE MEASURES TO AVOID, REVERSE, MITIGATE OR MANAGE IDENTIFIED IMPACTS AS WELL AS TO DETERMINE THE EXTENT OF RESIDUAL RISKS THAT NEED TO BE MANAGED AND MONITORED.

Measures to avoid, reverse, mitigate or mange identified impacts will be included in the Environmental Impact Report. Especially mitigation measures will be investigated but this is subject to and dependent on the findings of the specialists. Although the specialists have been appointed to do their studies and assessments, not all the reports and results have been sent to the EAP yet. However, inputs from the local communities is also vitally important when considering ways to minimize potential impacts.

Monitoring is essential to ensuring that the developer/applicant is environmentally responsible in terms of NEMA and this includes both the development and operational phases.
Details of this will also be included in the Environmental Impact Report as well as the EMPr.

12 UNDERTAKING BY THE ENVIRONMENTAL ASSESSMENT PRACTITIONER IN RELATION TO

12.1 CORRECTNESS OF INFORMATION

The Environmental Assessment Practitioner (EAP) undertakes to ensure that all information contained in this Consultation Scoping Report is factually correct and that no available information or facts have been withheld form the report. It is in the best interest of both the applicant/developer and EAP to adhere to an honest, open and factually correct application process.

12.2 INCLUSION OF COMMENTS AND INPUTS FROM I&AP'S

The Environmental Assessment Practitioner undertakes to ensure that all received comments and inputs from I&AP's are included in all reports, as well as responses from the EAP.

12.3 INFORMATION FROM THE EAP TO I&AP'S

The Environmental Assessment Practitioner undertakes to ensure that all the answers and reaction from the EAP to comments and inputs from I&AP's are included in all reports to be submitted. The EAP will endeavour to keep communication and correspondence with all I&APs open, honest and transparent.

13 UNDERTAKING BY EAP TO LEVEL OF AGREEMENT TO PLAN OF STUDY FOR EIA

The Environmental Assessment Practitioner undertakes to ensure that the plan of study for the EIA is in agreement with requirements of the Environmental Regulations, 2014 and in agreement with issues and concerns mentioned by registered Interested and Affected Parties.

14 CONCLUSIONS AND RECOMMENDATIONS

The purpose of this report is to provide the relevant authority with sufficient information regarding the potential impacts and scope of the development to make an informed decision regarding the approval of the Plan of Study for Environmental Impact Assessment as well as providing comments that will aid in the compilation of a Scoping Report which will be approved by the DEA.

The Department is therefore respectfully requested to evaluate and consider this Scoping report, as part of an application that has been lodged in terms of section 20(b) of the National Environmental Management Act , 1998 (Act 107 of 1998), in respect of the listed activities listed in section 5 of this report.

15 DESCRIPTION OF THE AFFECTED ENVIRONMENT

15.1 LAND USE

The site is located in a rural area and the area around the site is used for living space for communities as well as subsistence agriculture. On the eastern side of the site is the ESKOM Bolobedu sub-station. The site itself is currently used for grazing purposes and small subsistence agriculture.

15.2 TOPOGRAPHY

The project area is characterised by slightly undulating to flat plains with two major drainage channels bisecting the area. The topography across the site is slightly undulating with the average elevation of 580 mamsl. The topography is suitable for the development.

15.3 CLIMATE

The climate for the region can be described as warm-temperate. Giyani, which is the closest town, normally receives about 421mm of rain per year, with most rainfall occurring mainly during mid-summer. Precipitation is generally in the form of relatively short, but intense, thunder showers mainly between November and March. It receives the lowest rainfall (0mm) in June and the highest (93mm) in January. The monthly distribution of average daily maximum temperatures shows that the average midday temperatures for Giyani range from 23.9°C in June to 31°C in January. The region is the coldest during July when the mercury drops to 8°C on average during the night.

15.4 REGIONAL GEOLOGY

The site is underlain Grey biotite Gneiss and Migmatite of the Goudplaats Gneiss in the north; leucocratic Biotite Granite of Vaalian age in the south and east; many Diabase dykes

The site does not reflect any risk for the formation of sinkholes or subsidences caused by the presence of water-soluble rocks (dolomite or limestone).

15.5 SOIL CHARACTERISTICS

The land type units represented within the study area include the Ae64 and Ea70 landtypes. The soils associated with the site are red-yellow apedal, freely drained soils; red, high base status, which is > 300 mm deep (no dunes). Soils are mostly deep sandy to sandyloam on the plains, while black, alluvial soils are associated with the drainage channels. A soil potential assessment will be done to determine the potential of the soils in the area and to rate the suitability of the development in the area

15.6 ECOLOGY

The development site lies within the Savanna biome which is the largest biome in Southern Africa. It is characterized by a grassy ground layer and a distinct upper layer of woody plants (trees and shrubs). The environmental factors delimiting the biome are complex and include altitude, rainfall, geology and soil types, with rainfall being the major delimiting factor. Fire and grazing also keep the grassy layer dominant. The most recent classification of the area by Mucina & Rutherford is the Granite Lowveld Bushveld vegetation type, although most of the proposed development sites have been completely modified and represent degraded bushveld or old fields.

The vegetation structure of the Granite Lowveld Vegetation Type is typical tall shrubland with few trees to medium dense low woodland on the deep sandy uplands, while dense thicket to open savanna dominate occurs in the bottomlands. At seeplines where convex topography changes to concave, a dense fringe of Terminalia sericea occurs, with Eragrostis gummiflua in the undergrowth. The conservation status of the vegetation type is vulnerable with some 17% conserved in Kruger National Park, and the same percentage conserved in smaller private reserves. More than 20% of this vegetation type has been transformed, mainly by cultivation and by settlement development. The impact on the Ecology of the area was assessed by an Ecologist and this report is included here in Annexure D.

15.7 SURFACE DRAINAGE

The site is located within the B81G quaternary catchment and is situated in the Letaba / Levuhu Water Management Area. Drainage occurs as sheet-wash towards the major rivers. (Molototsi River to the east of the site) and will end up eventually in the Letaba River well south east of the site. A riparian delineation assessment was done to delineate the water courses on the site and the potential impact of the development of the solar facility on the riparian area. A Wetland and Riparianb Delineation Report is included in Annuxure D.

15.8 VISUAL ENVIRONMENT

The study area has a distinct rural character as the area is zoned for agriculture and scattered rural villages where the communities are living. The development of the PV Solar facility will fit in well in the surrounding area with the ESKOM substation to the east of the site. A visual impact assessment will be done to determine the visual impact of the solar facility on the surrounding environment.

15.9 AIR QUALITY AND NOISE

During the clearing phases of the proposed project noise and dust will be a factor. In the operational phase the impact of the Solar Facility will have an insignificant impact on air quality of the area. During operation of the solar facility noise impacts will be completely insignificant

Impacts and mitigation measures of these impacts will be addressed in the Consultation EIAR.

15.10 SOLID WASTE MANAGEMENT

The developer of the solar facility will be responsible for general solid waste removal and disposal at a waste disposal site permitted to receive such waste during the construction phase. During the operational phase only a small volume of waste will be generated which will be the responsibility of the operator of the site.

15.11 ARCHAEOLOGICAL AND HISTORICAL ATTRIBUTES

An Archaeological investigation will be done on the proposed site area to ensure that no heritage remains is being impacted on during construction or operation of the proposed solar facility as it is a legal requirement. It is not foreseen that any significant heritage remains will be found here as the site is in use for subsistence agriculture of the communities surrounding the site. A phase 1 heritage assessment will be done on the potential site to determine whether there are any heritage or archaeological features in the area that could be impacted on by the proposed development of the solar facility.

15.12 WATER AND WASTEWATER

The supply of potable water and water needed for construction and operation will be detailed in a services report. During construction the bulk of the water will be needed for construction purposes and for washing of the panels. During operation the bulk of the water required will be for washing of the panels while the potable water will be only a small part of the water requirement.

The handling of Sanitation waste water (sewage) will be discussed in the Consultation EIAR and the impact thereof will be rated in the impact assessment of the site.

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