ENVIRONMENTAL IMPACT ASSESSMENT PROCESS
FINAL BASIC ASSESSMENT REPORT

PROPOSED WATERCOURSE CROSSINGS WITHIN THE AUTHORISED SONNENBERG SOLAR PV FACILITY AND ASSOCIATED INFRASTRUCTURE ON A SITE NEAR KEIMOES, NORTHERN CAPE PROVINCE

(DENC REF NO: NC/BA/40/ZFM/KAI!/KEI2/2013)

Final Basic Assessment Report
Submitted to DENC
April 2014

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DEPARTMENT OF
ENVIRONMENT & NATURE
CONSERVATION

Porofensi Ya Kapa Bokone
LEFAPHA LA TIKOLOGO LE
TSHOMARELO YA TLHAGO

BASIC ASSESSMENT REPORT

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(For official use only)

File Reference Number:	
Application Number:	
Date Received:	

Basic Assessment Report in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended, and the Environmental Impact Assessment Regulations, 2010.

Kindly note that:

1. This **basic assessment report** is a standard report that may be required by a competent authority in terms of the EIA Regulations, 2010 and is meant to streamline applications. Please make sure that it is the report used by the particular competent authority for the activity that is being applied for.

2. The report must be typed within the spaces provided in the form. The size of the spaces provided are not necessarily indicative of the amount of information to be provided. The report is in the form of a table that can extend itself as each space is filled with typing.

3. Where applicable **tick** the boxes that are applicable or **black out** the boxes that are not applicable in the report.

4. An incomplete report may be returned to the applicant for revision.

5. The use of "not applicable" in the report must be done with circumspection because if it is used in respect of material information that is required by the competent authority for assessing the application, it may result in the rejection of the application as provided for in the regulations.

6. This report must be handed in at offices of the relevant competent authority as determined by each authority.

7. No faxed or e-mailed reports will be accepted.

8. The report must be compiled by an independent environmental assessment practitioner.

9. Unless protected by law, all information in the report will become public information on receipt by the competent authority. Any interested and affected party should be provided with the information contained in this report on request, during any stage of the application process.

10. A competent authority may require that for specified types of activities in defined situations only parts of this report need to be completed.

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PROJECT DETAILS

DENC Reference No. : NC/BA/40/ZFM/KAI!/KEI2/2013

Title : Environmental Assessment Process
Basic Assessment Report for the proposed watercourse crossings within the authorised Sonnenberg Solar PV facility and associated infrastructure on a site near Keimoes, Northern Cape Province

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Client : Networx S28 Energy (Pty) Ltd

Report Status : Final Basic Assessment submitted to DENC

When used as a reference this report should be cited as: Savannah Environmental (2014) Final Basic Assessment Report: Proposed watercourse crossings within the authorised Sonnenberg Solar PV facility and associated infrastructure on a site near Keimoes, Northern Cape Province

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SUMMARY AND OVERVIEW OF THE PROPOSED PROJECT

Networx S28 Energy (Pty) Ltd obtained environmental authorisation for the Sonnenberg Photovoltaic Plant (DEA reference: 12/12/20/2231) on a site located approximately 30 km west of Keimoes in the Northern Cape, in July 2012. The authorisation included authorisation for the proposed PV facility and associated infrastructure, including the impacts on biodiversity and ecology, heritage sites and the social environment associated with these activities. This authorisation did however not include the activities associated with the crossing of watercourses by roads or encroachment on watercourses by infrastructure as it was expected that these could be avoided. However, though detailed planning, it has been determined that the facility will encroach onto drainage lines within the development site and some infrastructure will be located within these drainage lines (refer to Figure 2). The proposed activities are to include the upgrade of the existing gravel road (if required), construction of internal gravel access roads and construction of PV panel support structures, each with a footprint of approximately 0,07m2, being ~1,5m deep.

In terms of the Environmental Impact Assessment (EIA) Regulations published in terms of Section 24(5) of the National Environmental Management Act (NEMA, Act No. 107 of 1998), Networx S28 Energy requires authorisation for this activity. In terms of sections 24 and 24D of the National Environmental Management Act (No 107 of 1998), as read with the EIA Regulations of GN R543 – R546 a Basic Assessment process is required to be undertaken for the proposed project. The following listed activities are applicable:

Number and date of the relevant notice	Activity No (s) (in terms of the relevant notice)	Description of each listed activity as per project description
GN 544, 18 June 2010	11	The construction of: (x) buildings exceeding 50 square metres in size; or (xi) infrastructure or structures covering 50 square metres or more Where such construction occurs within a watercourse or within 32 metres of a watercourse, measures from the edge of a watercourse, excluding where such construction will occur behind the development setback line. ***Infrastructure associated with the authorised Sonnenberg PV facility will encroach on and/or be within drainage lines present on the site***
GN 544, 18 June 2010	18	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 or more than 5 cubic metres from:

Number and date of the relevant notice	Activity No (s) (in terms of the relevant notice)	Description of each listed activity as per project description
		(i) a watercourse; ***Infrastructure associated with the authorised Sonnenberg PV facility will encroach on and/or be within drainage lines present on the site***
GN 546, 18 June 2010	13(c)ii	The clearance of an area of 1 hectare or more of vegetation where 75% or more of the vegetative cover constitutes indigenous vegetation. ***The construction of infrastructure will require clearance of vegetation of an area of 1 hectare or more. The site appears to fall within Environmental Control Zone 6 of the ZF Mgcawu (formerly Siyanda) District Municipality Environmental Management Framework (EMF)) – i.e. an area classified as being a sensitive area in terms of potential for wind erosion areas and areas containing sensitive vegetation***
GN 546, 18 June 2010	16(iii) & (iv)	The construction of (iii) buildings with a footprint exceeding 10 square metres in size or (iv) infrastructure covering 10 square metres or more where such construction occurs within a watercourse or within 32 metres of a watercourse, measured from the edge of a watercourse, excluding where such construction will occur behind the development setback line. ***Infrastructure associated with the authorised Sonneberg PV facility will encroach on and/or be within drainage lines present on the site. The site appears to fall within Environmental Control Zone 6 of the ZF Mgcawu (formerly Siyanda) District Municipality Environmental Management Framework (EMF)) – i.e. an area classified as being a sensitive area in terms of potential for wind erosion areas and areas containing sensitive vegetation***

The nature and extent of the proposed project and the associated impacts are explored in more detail in this Basic Assessment Report. This report has been compiled in accordance with the requirements of the EIA Regulations and includes details of the activity description; the site, area and property description; the public participation process; the impact assessment; and the recommendations of the Environmental Assessment Practitioner.

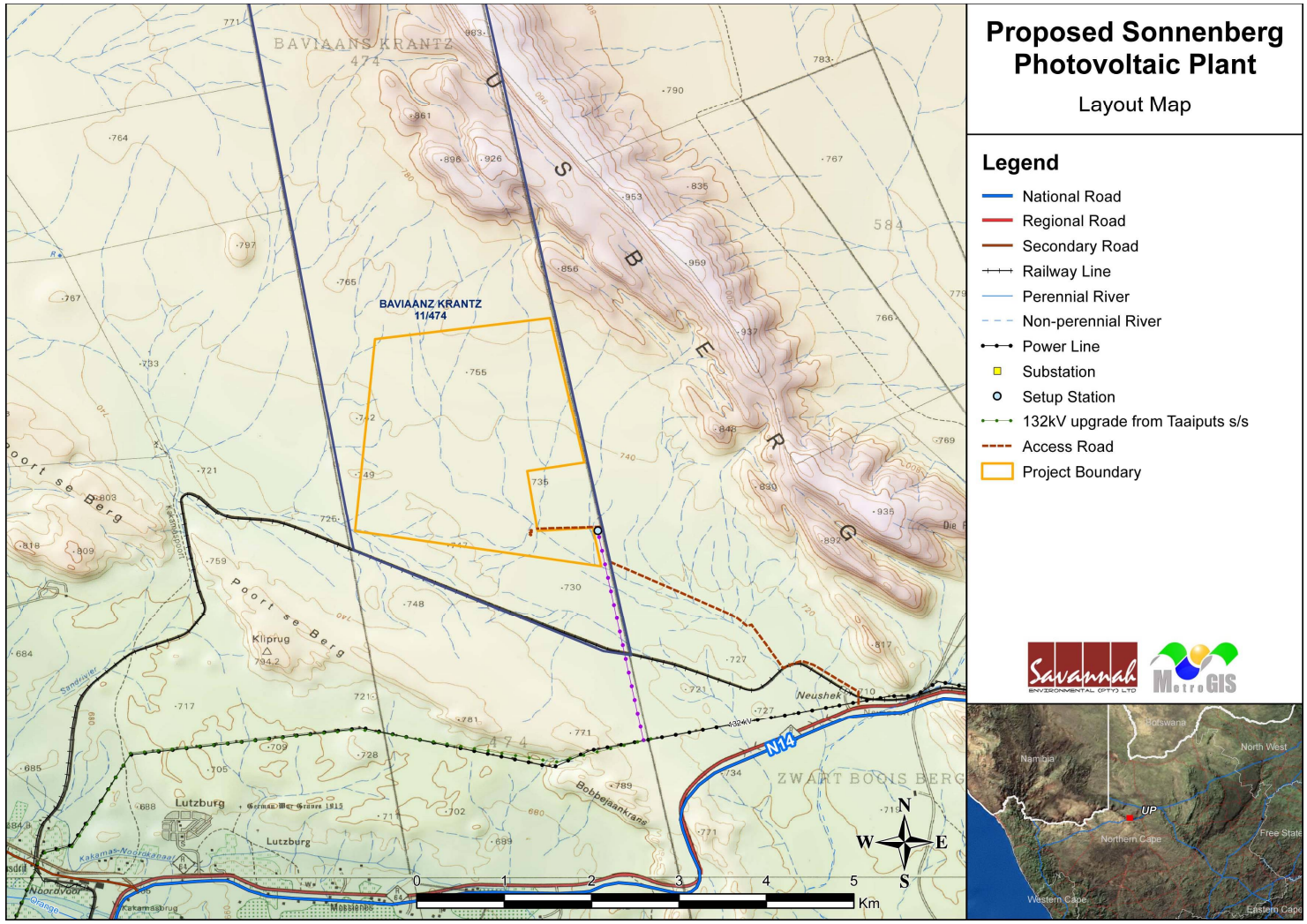

Figure 2: Watercourse crossings within the Sonnenberg Solar PV facility site

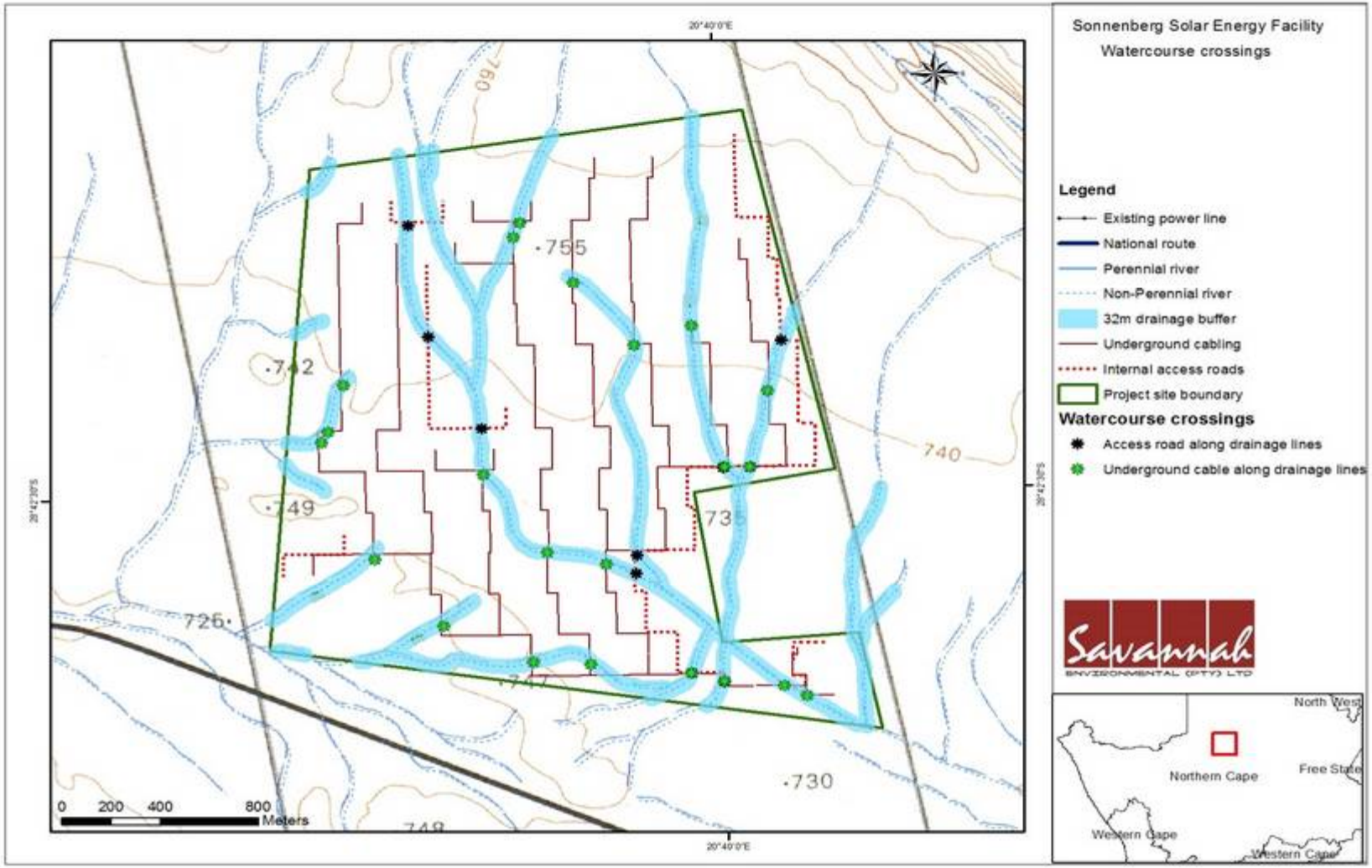

Figure 2: Locality map indicating the watercourse crossings due to internal access roads and underground cable trenches within the Sonnenberg Solar PV facility site

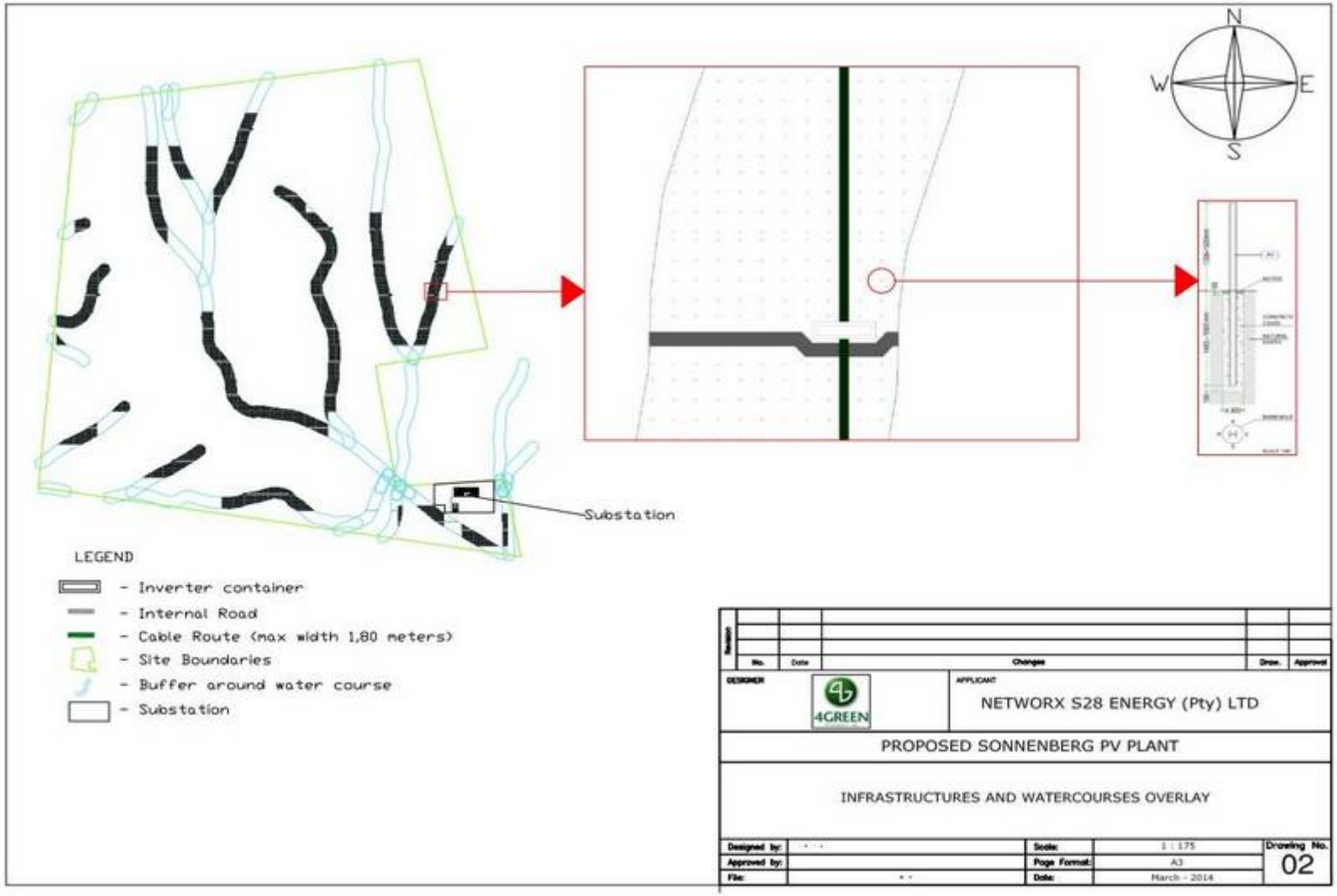

Figure 3: Map indicating watercourse crossings due to PV array foundations (pilings) and gravel access road sections

1.1. Details of environmental assessment practitioner and expertise to conduct the basic assessment

Savannah Environmental has been appointed as the independent environmental consultant to undertake the Environmental Basic Assessment to identify and assess the potential environmental impacts associated with the proposed watercourse crossings. Neither Savannah Environmental nor any of its specialist sub-consultants on this project are subsidiaries of or are affiliated to Networx S28 Energy. Furthermore, Savannah Environmental does not have any interests in secondary developments that may arise out of the authorisation of the proposed project.

Savannah Environmental is a specialist environmental consulting company providing holistic environmental management services, including environmental impact assessments and planning to ensure compliance and evaluate the risk of development; and the development and implementation of environmental management tools. Savannah Environmental benefits from the pooled resources, diverse skills and experience in the environmental field held by its team.

The Savannah Environmental team has considerable experience in environmental impact assessments and environmental management, and have been actively involved in undertaking environmental studies, for a wide variety of projects throughout South Africa, including those associated with electricity generation. Savannah Environmental was also the EAP for the authorised Sonnenberg PV Solar Energy Facility.

Jo-Anne Thomas, the principle Environmental Assessment Practitioner (EAP) for this project, is a registered Professional Natural Scientist and holds a Master of Science degree. She has over 14 years experience consulting in the environmental field. Her key focus is on strategic environmental assessment and advice; management and co-ordination of environmental projects, which includes integration of environmental studies and environmental processes into larger engineering-based projects and ensuring compliance to legislation and guidelines; compliance reporting; the identification of environmental management solutions and mitigation/risk minimising measures; and strategy and guideline development. She is currently responsible for the project management of EIAs for several renewable energy projects across the country.

Geraldine Mogashane, the EAP responsible for preparation of this Basic Assessment report holds a national Diploma in Environmental Management. Her key focus is on environmental impact assessment, public participation, environmental plans and programmes.

BASIC ASSESSMENT REPORT FOR REVIEW

This Basic Assessment Report has been prepared by Savannah Environmental in order to assess the potential environmental impacts associated with the watercourse crossings within the authorised Sonnenberg PV Solar Energy Facility. This process is being undertaken in support of an application for Environmental Authorisation in terms of the National Environmental Management Act (NEMA; Act 107 of 1998). The report has been made available for public review at the following locations:

» Keimoes Public Library (Main street, Keimoes)
» www.savannahsa.com

The 40-day period for review of the Draft Basic Assessment report was from the **15 January to 23 February 2014**. As required in terms of Regulation 56(3), this Final Basic Assessment Report has been made available to registered interested and affected parties for comment and has also been submitted to DENC, as the competent authority, for review and decision-making. I&APs have been advised to submit any additional comments to the DENC with a copy to Savannah Environmental, in accordance with Regulation 56(6).

SECTION A: ACTIVITY INFORMATION

Has a specialist been consulted to assist with the completion of this section?	NO

If YES, please complete form XX for each specialist thus appointed:
Any specialist reports must be contained in Appendix D.

1. ACTIVITY DESCRIPTION

Describe the activity, which is being applied for, in detail:

Networx S28 Energy (Pty) Ltd obtained an environmental authorisation from the National Department of Environmental Affairs for the proposed 200 MW Sonnenberg solar energy facility in July 2012 (DEA Ref No:12/12/20/2231), on a site located approximately 30 km west of Keimoes in the Northern Cape Province. The authorisation included authorisation for the proposed PV facility and associated infrastructure, including the impacts on biodiversity and ecology, heritage sites and the social environment associated with these activities. This authorisation did however not include the activities associated with the crossing of watercourses by roads or encroachment on watercourses by infrastructure as it was expected that these could be avoided. However, though detailed planning, it has been determined that the facility will encroach onto drainage lines within the development site and some infrastructure will be located within these drainage lines. The proposed activities are to include the upgrade of the existing gravel road (if required), construction of internal gravel access roads and construction of PV panel support structures, each with a footprint of approximately 0,07m2, being ~1,5m deep.

The proposed project triggers the following activities in terms of the EIA Regulations:

Listed activity as described in GN R.544, 545 and 546	**Description of project activity**
GN 544, 18 June 2010, activity 11 *The construction of* *(x)_ building exceeding 50 square meters in size, or* *(xi) infrastructure or structures covering 50 square metres or more* *Where such construction occurs a watercourse r within 32 metres of a water course, measures from the edge of the watercourse, excluding whre such construction will occur behind the development setback line*	*Infrastructure associated with the authorised Sonnenberg PV facility will encroach on and/or be within drainage lines present on the site*

GN 544, 18 June 2010, activity 18 *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 or more than 5 cubic metres from:* *(i) a watercourse;*	*Infrastructure associated with the authorised Sonnenberg PV facility will encroach on and/or be within drainage lines present on the site*
GN 546, 18 June 2010, activity 13(c)ii *The clearance of an area of 1 hectare or more of vegetation where 75% or more of the vegetative cover constitutes indigenous vegetation*	*The construction of infrastructure will require clearance of vegetation of an area of 1 hectare or more. The site appears to fall within Environmental Control Zone 6 of the ZF Mgcawu (formerly Siyanda) District Municipality EMF – i.e. an area classified as being a sensitive area in terms of potential for wind erosion areas and areas containing sensitive vegetation*
GN 546, 18 June 2010, activity 16(iii) & (iv) *The construction of (iii) buildings with a footprint exceeding 10 square metres in size or (iv) infrastructure covering 10 square metres or more where such construction occurs within a watercourse or within 32 metres of a watercourse, measured from the edge of a watercourse, excluding where such construction will occur behind the development setback line.*	*Infrastructure associated with the authorised Sonnenberg PV facility will encroach on and/or be within drainage lines present on the site. The site appears to fall within Environmental Control Zone 6 of the ZF Mgcawu (formerly Siyanda) District Municipality EMF – i.e. an area classified as being a sensitive area in terms of potential for wind erosion areas and areas containing sensitive vegetation*

2. FEASIBLE AND REASONABLE ALTERNATIVES

"alternatives", in relation to a proposed activity, means different means of meeting the general purpose and requirements of the activity, which may include alternatives to—

(a) the property on which or location where it is proposed to undertake the activity;
(b) the type of activity to be undertaken;
(c) the design or layout of the activity;
(d) the technology to be used in the activity;
(e) the operational aspects of the activity; and
(f) the option of not implementing the activity.

Describe alternatives that are considered in this application. Alternatives should include a consideration of all possible means by which the purpose and need of the proposed activity could be accomplished in the specific instance taking account of the interest of the applicant in the activity. The no-go alternative

must in all cases be included in the assessment phase as the baseline against which the impacts of the other alternatives are assessed. The determination of whether site or activity (including different processes etc.) or both is appropriate needs to be informed by the specific circumstances of the activity and its environment. After receipt of this report the competent authority may also request the applicant to assess additional alternatives that could possibly accomplish the purpose and need of the proposed activity if it is clear that realistic alternatives have not been considered to a reasonable extent.

a) Site Alternatives

The proposed watercourse crossings fall within the footprint of the authorised Sonnenberg PV Facility development site and along the existing gravel access road. The siting of these crossings are therefore determined by the routing of the existing access road and have been sited in accordance with technical considerations associated with this facility. No feasible alternative sites have been identified for the proposed watercourse crossings

b) Activity alternatives

The proposed watercourse crossings fall within the footprint of the approved Sonnenberg PV Facility development site. There is therefore no feasible alternative to the proposed activities.

c) Design or layout alternatives

The proposed watercourse crossings fall within the footprint of the authorised Sonnenberg PV Facility development site. The detailed design of the facility avoided the drainage lines within the site as far as possible. However, it was determined that it is not feasible to avoid all of the drainage lines on the site as was originally considered for the facility. These crossings have been sited in accordance with technical considerations associated with this facility. No feasible layout alternatives have been identified for the proposed watercourse crossings.

Design of the crossings will be based on the site-specific conditions and technical requirements. There are no feasible design alternatives for the proposed watercourse crossings.

Paragraphs 3 – 13 below should be completed for each alternative.

3. ACTIVITY POSITION

Indicate the position of the activity using the latitude and longitude of the centre point of the site for each alternative site. The co-ordinates should be in degrees and decimal minutes. The minutes should have at least three decimals to ensure adequate accuracy. The projection that must be used in all cases is the WGS84 spheroid in a national or local projection.
List alternative sites if applicable.

Centre point of the PV site **Alternative:**	**Latitude (S):**		**Longitude (E):**	
Alternative S1[1] (preferred or only site alternative)	28°	42.189‘	20°	39.516‘
Alternative S2 (if any)	°	‘	°	‘
Alternative S3 (if any)	°	‘	°	‘

In the case of linear activities: **Alternative:**	**Latitude (S):**		**Longitude (E):**	
Alternative S1 (preferred or only route alternative)				
• Starting point of the activity	°	‘	°	‘
• Middle point of the activity	°	‘	°	‘
• End point of the activity	°	‘	°	‘
Alternative S2 (if any)				
• Starting point of the activity	°	‘	°	‘
• Middle point of the activity	°	‘	°	‘
• End point of the activity	°	‘	°	‘
Alternative S3 (if any)				
• Starting point of the activity	°	‘	°	‘
• Middle point of the activity	°	‘	°	‘
• End point of the activity	°	‘	°	‘

For route alternatives that are longer than 500m, please provide an addendum with co-ordinates taken every 250 meters along the route for each alternative alignment.

[1] “Alternative S..” refer to site alternatives.

4. PHYSICAL SIZE OF THE ACTIVITY

Indicate the physical size of the preferred activity/technology as well as alternative activities/technologies (footprints):

Alternative:	**Size of the activity:**
Alternative A1[2] (preferred activity alternative)	~5 000 000 m^2(size of approved PV site)
Alternative A2 (if any)	m^{20}
Alternative A3 (if any)	m^2

or, for linear activities:

Alternative:	**Length of the activity:**
Alternative A1 (preferred activity alternative)	M
Alternative A2 (if any)	M
Alternative A3 (if any)	M

Indicate the size of the alternative sites or servitudes (within which the above footprints will occur):

Alternative:	**Size of the site/servitude:**
Alternative A1 (preferred activity alternative)	m^2
Alternative A2 (if any)	m^2
Alternative A3 (if any)	m^2

5. SITE ACCESS

Does ready access to the site exist?	YES [redacted]
If NO, what is the distance over which a new access road will be built	M

[2] "Alternative A.." refer to activity, process, technology or other alternatives.

Describe the type of access road planned:

The site is easily accessible from Upington via the N14 which runs from Upington to Augrabies. There is a main gravel road extending up the eastern boundary of the site, which provides access to the site. This gravel road connects directly to the N14 located to the south of the site. New access roads will include those approved as part the Sonnenberg Solar PV facility.

Include the position of the access road on the site plan and required map, as well as an indication of the road in relation to the site.

6. SITE OR ROUTE PLAN

A detailed site or route plan(s) must be prepared for each alternative site or alternative activity. It must be attached as Appendix A to this document.

The site or route plans must indicate the following:

6.1 the scale of the plan which must be at least a scale of 1:500;

6.2 the property boundaries and numbers of all the properties within 50 metres of the site;

6.3 the current land use as well as the land use zoning of each of the properties adjoining the site or sites;

6.4 the exact position of each element of the application as well as any other structures on the site;

6.5 the position of services, including electricity supply cables (indicate above or underground), water supply pipelines, boreholes, street lights, sewage pipelines, storm water infrastructure and telecommunication infrastructure;

6.6 all trees and shrubs taller than 1.8 metres;

6.7 walls and fencing including details of the height and construction material;

6.8 servitudes indicating the purpose of the servitude;

6.9 sensitive environmental elements within 100 metres of the site or sites including (but not limited thereto):

- rivers;
- the 1:100 year flood line (where available or where it is required by DWA);
- ridges;
- cultural and historical features;
- areas with indigenous vegetation (even if it is degraded or invested with alien species);

6.9 for gentle slopes the 1 metre contour intervals must be indicated on the plan and whenever the slope of the site exceeds 1:10, the 500mm contours must be indicated on the plan; and

6.10 the positions from where photographs of the site were taken.

A site plan is included within **Appendix A**.

7. SITE PHOTOGRAPHS

Colour photographs from the centre of the site must be taken in at least the eight major compass directions with a description of each photograph. Photographs must be attached under Appendix B to this form**.** It must be supplemented with additional photographs of relevant features on the site, if applicable.

Site photographs are included within **Appendix B.**

8. FACILITY ILLUSTRATION

A detailed illustration of the activity must be provided at a scale of 1:200 as Appendix C for activities that include structures. The illustrations must be to scale and must represent a realistic image of the planned activity. The illustration must give a representative view of the activity.

A Facility Illustration is included within **Appendix C**.

9. ACTIVITY MOTIVATION

9(a) Socio-economic value of the activity

What is the expected capital value of the activity on completion?	R2 000 000 000
What is the expected yearly income that will be generated by or as a result of the activity?	R175 000 000
Will the activity contribute to service infrastructure?	YES [redacted]
Is the activity a public amenity?	[redacted] NO
How many new employment opportunities will be created in the development phase of the activity?	500
What is the expected value of the employment opportunities during the development phase?	R10 000 000
What percentage of this will accrue to previously disadvantaged individuals?	70%
How many permanent new employment opportunities will be created during the operational phase of the activity?	20

What is the expected current value of the employment opportunities during the first 10 years?	R15 000 000
What percentage of this will accrue to previously disadvantaged individuals?	75%

9(b) Need and desirability of the activity

Motivate and explain the need and desirability of the activity (including demand for the activity):

The proposed watercourse crossings are required as part of support structure for the already approved Sonnenberg solar PV facility which was authorised in July 2012. The main purpose of the watercourse crossings is to provide a means for the roads and other infrastructure within the solar energy facility to be constructed within or across the identified drainage lines on the site. The establishment of the Sonnenberg PV Plant is proposed by NetWorx S28 Energy in response to the growing electricity demand within South Africa, as well as the country's targets for renewable energy NetWorx S28 Energy proposes to sell the electricity to Eskom as part of the Renewable Energy Independent Power Producers (IPP) Procurement Programme which has been introduced by the Department of Energy (DoE) to promote the development of renewable power generation facilities by IPPs. NetWorx S28 Energy will be required to apply for a generation license from the National Energy Regulator of South Africa (NERSA), as well as a power purchase agreement from Eskom (i.e. typically for a period of 20 - 25 years) in order to build and operate the proposed facility. As part of the agreement, NetWorx S28 Energy will be remunerated per kWh by Eskom who will be financially backed by government. Depending on the economic conditions following the lapse of this period, the facility can either be decommissioned or the power purchase agreement may be renegotiated and extended.

At a provincial level the Northern Cape Provincial Growth and Development Strategy notes that availability of inexpensive energy is a key requirement in order to promote economic growth in the Northern Cape. The key NCGDS goes on to indicated that "the development of energy sources such as solar energy, the natural gas fields, bio-fuels etc. could be some of the means by which new economic opportunity and activity is generated in the Northern Cape.

At a local level the Kai! Garib IDP lists a number of strategies aimed at addressing poverty and unemployment in the region. These include skills development and capacity building programmes, especially amongst the youth. The proposed watercourse crossing project is associated with the approved Sonnenberg Solar PV facility which will offer employment opportunities, skills development and capacity building programmes. The establishment of the

facility therefore has the potential to support a number of key strategies in the IDP.

There is need for solar energy generation facilities within the country. According to the SDF, the Kai! Garib Municipality has become a hotspot for Solar Energy developments and numerous developments are currently under investigation. The resulting economic spin-offs are eagerly anticipated.

The findings of the review of the relevant policies and documents pertaining to the energy sector therefore indicate that solar energy and the establishment of solar energy facilities are supported at a national, provincial and local level. The watercourse crossings are required for the successful establishment of the approved Sonnenberg Solar Facility. Therefore, there is a need for this project to proceed.

Indicate any benefits that the activity will have for society in general:

The proposed project will support the approved Sonnenberg solar PV facility. The solar facility represents an investment in infrastructure for the generation of clean, renewable energy, which given the challenges created by climate change, represents a positive high social benefit for society as a whole. Through the generation of renewable energy, society can benefit from increased energy security, a reduction in greenhouse gas emissions, employment creation and reduced pollution levels associated with conventional electricity production.

Indicate any benefits that the activity will have for the local communities where the activity will be located:

The proposed project forms part of the supporting infrastructure for the approved Sonnenberg solar PV facility which will provide renewable energy to the national grid. Job opportunities, albeit limited, will be created during the construction and operation of the proposed facility. As part of the Department of Energy REIPPP, NetWorx S28 Energy will be required to employ local people for a percentage of the workforce for the Sonnenberg Solar Facility. The local community will therefore benefit through job creation, skills development opportunities and training which will reduce poverty levels in the local area. As part of the above mentioned IPP, Networx S28 Energy will be required to identify needs of the surrounding communities and to formulate strategies on how such needs could be met utilising Socio-Economic Development Contributions (as a percentage of the yearly revenue Networx S28 Energy will obtain by selling the electricity to the designated off-taker). In addition, local and regional economic benefits will be realised through the additional revenue generated as a result of the proposed project through direct and indirect job opportunities, local spend, local procurement, etc.

DESIRABILITY:			
1.	Does the proposed land use / development fit the surrounding area?	YES	
2.	Does the proposed land use / development conform to the relevant structure plans, SDF and planning visions for the area?		NO
3.	Will the benefits of the proposed land use / development outweigh the negative impacts of it?	YES	
4.	If the answer to any of the questions 1-3 was NO, please provide further motivation / explanation:		
	The main purpose of the watercourse crossing is to provide a means for the roads and infrastructure within the approved Sonnenberg PV solar facility to be constructed across the watercourses. The project is not specifically considered within the existing SDF. However, the relevant property portion has been rezoned to accommodate the solar facility and will therefore be reflected as such in the municipality planning going forward.		
5.	Will the proposed land use / development impact on the sense of place?	YES	
6.	Will the proposed land use / development set a precedent?		NO
7.	Will any person's rights be affected by the proposed land use / development?		NO
8.	Will the proposed land use / development compromise the "urban edge"?		NO
9.	If the answer to any of the question 5-8 was YES, please provide further motivation / explanation.		
	The proposed water crossings themselves will not impact on the sense of place. However, the proposed water crossings are associated with the authorised Sonnenberg PV energy facility. The PV facility could be seen as an intrusion on the rural visual environment which is currently associated with farming and agriculture. This issue was however assessed within the EIA undertaken for the solar facility and indicated to be of low significance due to the location of the PV facility within an area which is sparsely populated.		

BENEFITS:			
1.	Will the land use / development have any benefits for society in general?	YES	
	Explain:		
	The proposed project will support the approved Sonnenberg solar PV		

	facility. The solar facility represents an investment in infrastructure for the generation of clean, renewable energy, which given the challenges created by climate change, represents a positive high social benefit for the society as a whole. Through the generation of renewable energy, society can benefit from increased energy security, a reduction in greenhouse gas emissions, employment creation and reduced pollution levels associated with conventional electricity production.		
2.	Will the land use / development have any benefits for the local communities where it will be located?	YES	
	Explain:		
	The proposed project forms part of the supporting infrastructure for the approved Sonnenberg solar PV facility which will provide renewable energy to the national grid. Job opportunities, albeit limited, will be created during the construction and operation of the proposed facility. As part of the Department of Energy REIPPP, NetWorx S28 Energy will be required to employ local people for a percentage of the workforce for the Sonnenberg Solar Facility. The local community will therefore benefit through job creation, skills development opportunities and training which will reduce poverty levels in the local area. As part of the above mentioned IPP, Networx S28 Energy will be required to identify needs of the surrounding communities and to formulate strategies on how such needs could be met utilising Socio-Economic Development Contributions (as a percentage of the yearly revenue Networx S28 Energy will obtain by selling the electricity to the designated off-taker). In addition, local and regional economic benefits will be realised through the additional revenue generated as a result of the proposed project through direct and indirect job opportunities, local spend, local procurement, etcIn addition, local and regional economic benefits will be realised through the additional revenue generated as a result of the proposed project through direct and indirect job opportunities, local spend, local procurement etc.		

10. APPLICABLE LEGISLATION, POLICIES AND/OR GUIDELINES

List all legislation, policies and/or guidelines of any sphere of government that are applicable to the application as contemplated in the EIA regulations, if applicable:

Title of the Legislation /Policy/Guideline	Application to the project	Relevant Authority	Date
National Environmental Management Act (Act No 107 of 1998)	EIA Regulations have been promulgated in terms of Chapter 5. Activities which may not commence without an environmental authorisation are identified within these Regulations. In terms of Section 24(1) of NEMA, the potential impact on the environment associated with these listed activities must be considered, investigated, assessed and reported on to the competent authority (the decision-maker) charged by NEMA with granting of the relevant environmental authorisation. In terms of GNR 544 of June 2010, a Basic Assessment process is required to be undertaken for the proposed project	Northern Cape Department of Environment and Nature Conservation – leading Authority.	1998
National Environmental Management Act (Act No 107 of 1998)	In terms of the Duty of Care provision in S28(1) the project proponent must ensure that reasonable measures are taken throughout the life cycle of this project to ensure that any pollution or degradation of the environment associated with this project is avoided, stopped or minimised. In terms of NEMA, it has become the legal duty of a project proponent to consider a project holistically, and to consider the cumulative effect of a variety of impacts.	Department of Environmental Affairs (as regulator of NEMA).	1998
National Environmental Management: Waste Act (Act No 59 of 2008)	The purpose of this Act is to reform the law regulating waste management in order to protect health and the environment by providing for the licensing and control of waste management activities. To set standards for waste management on the project.	Provincial Environmental Authorities – general waste National DEA – hazardous waste	2008

Title of the Legislation /Policy/Guideline	Application to the project	Relevant Authority	Date
National Water Act (Act No 36 of 1998)	In terms of Section 19, the project proponent must ensure that reasonable measures are taken throughout the life cycle of this project to prevent and remedy the effects of pollution to water resources from occurring, continuing or recurring. In terms of Section 21, a water use license is required for certain identified activities. The impacting on watercourses as is proposed for this project is listed as such an activity and therefore a Water use License will be required to be obtained	Department of Water Affairs (as regulator of NWA)	1998
National Heritage Resources Act (Act No 25 of 1999)	Section 38 states that Heritage Impact Assessments (HIAs) are required for certain kinds of development including » the construction of a road, power line, pipeline, canal or other similar linear development or barrier exceeding 300 m in length; » any development or other activity which will change the character of a site exceeding 5 000 m^2 in extent. The relevant Heritage Resources Authority must be notified of developments such as linear developments (such as roads and power lines), bridges exceeding 50 m, or any development or other activity which will change the character of a site exceeding 5 000 m^2; or the re-zoning of a site exceeding 10 000 m^2 in extent. This notification must be provided in the early stages of initiating that development, and details regarding the location, nature and extent of the proposed development must be provided.	South African Heritage Resources Agency (SAHRA)	1999

Title of the Legislation /Policy/Guideline	Application to the project	Relevant Authority	Date
	Standalone HIAs are not required where an EIA is carried out as long as the EIA contains an adequate HIA component that fulfils the provisions of Section 38. In such cases only those components not addressed by the EIA should be covered by the heritage component. An HIA was undertaken for the site as part of the EIA completed for the solar energy facility		
National Environmental Management: Biodiversity Act (Act No 10 of 2004)	In terms of Section 57, the Minister of Environmental Affairs has published a list of critically endangered, endangered, vulnerable and protected species in GNR 151 in Government Gazette 29657 of 23 February 2007 and the regulations associated therewith in GNR 152 in GG29657 of 23 February 2007, which came into effect on 1 June 2007. In terms of GNR 152 of 23 February 2007: Regulations relating to listed threatened and protected species, the relevant specialists must be employed during the EIA phase of the project to incorporate the legal provisions as well as the regulations associated with listed threatened and protected species (GNR 152) into specialist reports in order to identify permitting requirements at an early stage of the EIA phase. the developer has a responsibility for: » The conservation of endangered ecosystems and restriction of	National Department of Environmental Affairs	2004

Title of the Legislation /Policy/Guideline	Application to the project	Relevant Authority	Date
	activities according to the categorisation of the area (not just by listed activity as specified in the EIA regulations). » Promote the application of appropriate environmental management tools in order to ensure integrated environmental management of activities thereby ensuring that all development within the area are in line with ecological sustainable development and protection of biodiversity. » Limit further loss of biodiversity and conserve endangered ecosystems.		
Conservation of Agricultural Resources Act (Act No 43 of 1983)	Regulation 15 of GNR1048 provides for the declaration of weeds and invader plants, and these are set out in Table 3 of GNR1048. Declared Weeds and Invaders in South Africa are categorised according to one of the following categories: » Category 1 plants: are prohibited and must be controlled. » Category 2 plants: (commercially used plants) may be grown in demarcated areas providing that there is a permit and that steps are taken to prevent their spread. » Category 3 plants: (ornamentally used plants) may no longer be planted; existing plants may remain, as long as all reasonable steps are taken to prevent the spreading thereof, except within the floodline of watercourses and wetlands. These regulations provide that Category 1, 2 and 3 plants must not occur on land and that such plants must be controlled by the methods set out in Regulation 15E.	Department of Agriculture	1983
National Veld and Forest	In terms of Section 12 the applicant would be obliged to burn	Department of Agriculture, Forestry	1998

Title of the Legislation /Policy/Guideline	Application to the project	Relevant Authority	Date
Fire Act (Act 101 of 1998)	firebreaks to ensure that should a veld fire occur on the property, that it does not spread to adjoining land. In terms of section 13 the applicant must ensure that the firebreak is wide and long enough to have a reasonable chance of preventing the fire from spreading, not causing erosion, and is reasonably free of inflammable material. In terms of section 17, the applicant must have such equipment, protective clothing and trained personnel for extinguishing fires.	and Fisheries	
National Forests Act (Act 84 of 1998)	In terms of S15 (1) no person may cut, disturb, damage or destroy any protected tree or possess, collect, remove, transport, export, purchase, sell donate or in any other manner acquire or dispose of any protected tree or any forest product derived from a protected tree, except under a license granted by the Minister to an (applicant and subject to such period and conditions as may be stipulated". GN 877 of 22 November 2013provides a list of protected tree species.	Department of Agriculture, Forestry and Fisheries	1998
Provincial legislation			
Northern Cape Nature Conservation Act,(Act 9 of 2009)	This Act provides for the sustainable utilisation of wild animals, aquatic biota and plants; provides for the implementation of the Convention on International Trade in Endangered Species of Wild Fauna and Flora; provides for offences and penalties for contravention of the Act; provides for the appointment of nature	Northern Cape DENC	2009

Title of the Legislation /Policy/Guideline	Application to the project	Relevant Authority	Date
	conservators to implement the provisions of the Act; and provides for the issuing of permits and other authorisations. Amongst other regulations, the following may apply to the current project: » Boundary fences may not be altered in such a way as to prevent wild animals from freely moving onto or off of a property; » Aquatic habitats may not be destroyed or damaged; » The owner of land upon which an invasive species is found (plant or animal) must take the necessary steps to eradicate or destroy such species. The Act provides lists of protected species for the Province.		

11. WASTE, EFFLUENT, EMISSION AND NOISE MANAGEMENT

11(a) Solid waste management

Will the activity produce solid construction waste during the construction/initiation phase?	YES
If yes, what estimated quantity will be produced per month?	unknown at this stage

How will the construction solid waste be disposed of (describe)?

The solid waste will be disposed of at a licensed facility by a suitably qualified contractor

Where will the construction solid waste be disposed of (describe)?

Waste will be disposed of at the nearest licensed landfill site. There are a number of licensed general waste landfills in the broader study area.

Will the activity produce solid waste during its operational phase?	NO
If yes, what estimated quantity will be produced per month?	m^3

How will the solid waste be disposed of (describe)?

Where will the solid waste be disposed if it does not feed into a municipal waste stream (describe)?

If the solid waste (construction or operational phases) will not be disposed of in a registered landfill site or be taken up in a municipal waste stream, then the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

Can any part of the solid waste be classified as hazardous in terms of the relevant legislation?	NO

If yes, inform the competent authority and request a change to an application for scoping and EIA.

Is the activity that is being applied for a solid waste handling or treatment facility?	NO

If yes, then the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

11(b) Liquid effluent

Will the activity produce effluent, other than normal sewage, that	NO

will be disposed of in a municipal sewage system?	
If yes, what estimated quantity will be produced per month?	m^3
Will the activity produce any effluent that will be treated and/or disposed of on site?	NO

If yes, the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

Will the activity produce effluent that will be treated and/or disposed of at another facility?	NO

If yes, provide the particulars of the facility:

Facility name:			
Contact person:			
Postal address:			
Postal code:			
Telephone:		Cell:	
E-mail:		Fax:	

Describe the measures that will be taken to ensure the optimal reuse or recycling of waste water, if any:

Not applicable

11(c) Emissions into the atmosphere

Will the activity release emissions into the atmosphere?	NO
If yes, is it controlled by any legislation of any sphere of government?	

If yes, the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

If no, describe the emissions in terms of type and concentration:

Minor dust emissions may be generated by construction activities but these will not exceed acceptable limits.

11(d) Generation of noise

Will the activity generate noise?	NO
If yes, is it controlled by any legislation of any sphere of government?	

If yes, the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

If no, describe the noise in terms of type and level:

Noise may be generated by vehicular movements during the construction phase but will not exceed acceptable limits.

12. WATER USE

Please indicate the source(s) of water that will be used for the activity by ticking the appropriate box(es)

Municipal	water board	groundwater	river, stream, dam or lake	other	the activity will not use water

If water is to be extracted from groundwater, river, stream, dam, lake or any other natural feature, please indicate

the volume that will be extracted per month:	N/A
Does the activity require a water use permit from the Department of Water Affairs?	YES

If yes, please submit the necessary application to the Department of Water Affairs and attach proof thereof to this application if it has been submitted.

An application will be submitted to the Department of Water Affairs once the project has received authorisation

13. ENERGY EFFICIENCY

Describe the design measures, if any, that have been taken to ensure that the activity is energy efficient:

Not applicable

Describe how alternative energy sources have been taken into account or been built into the design of the activity, if any:

Not applicable

SECTION B: SITE/AREA/PROPERTY DESCRIPTION

Important notes:

1. For linear activities (pipelines, etc) as well as activities that cover very large sites, it may be necessary to complete this section for each part of the site that has a significantly different environment. In such cases please complete copies of Section C and indicate the area, which is covered by each copy No. on the Site Plan.

Section C Copy No. (e.g. A): [ ]

2. Paragraphs 1 - 6 below must be completed for each alternative.

3. Has a specialist been consulted to assist with the completion of this section? [ ] NO

If YES, please complete form XX for each specialist thus appointed:
All specialist reports must be contained in Appendix D.
Specialists reports for the authorised Sonnenberg PV facility are included in **Appendix D**

1. GRADIENT OF THE SITE

Indicate the general gradient of the site.

Alternative S1:

Flat	1:50 – 1:20	1:20 – 1:15	1:15 – 1:10	1:10 – 1:7,5	1:7,5 – 1:5	Steeper than 1:5

Alternative S2 (if any):

Flat	1:50 – 1:20	1:20 – 1:15	1:15 – 1:10	1:10 – 1:7,5	1:7,5 – 1:5	Steeper than 1:5

Alternative S3 (if any):

Flat	1:50 – 1:20	1:20 – 1:15	1:15 – 1:10	1:10 – 1:7,5	1:7,5 – 1:5	Steeper than 1:5

2. LOCATION IN LANDSCAPE

Indicate the landform(s) that best describes the site:

2.1 Ridgeline
2.2 Plateau
2.3 Side slope of hill/mountain

2.4 Closed valley
2.5 Open valley
2.6 Plain
2.7 Undulating plain / low hills
2.8 Dune
2.9 Seafront

3. GROUNDWATER, SOIL AND GEOLOGICAL STABILITY OF THE SITE

Is the site(s) located on any of the following (tick the appropriate boxes)?

	Alternative S1:		**Alternative S2 (if any):**			**Alternative S3 (if any):**	
Shallow water table (less than 1.5m deep)		NO	YES	NO		YES	NO
Dolomite, sinkhole or doline areas		NO	YES	NO		YES	NO
Seasonally wet soils (often close to water bodies)		NO	YES	NO		YES	NO
Unstable rocky slopes or steep slopes with loose soil		NO	YES	NO		YES	NO
Dispersive soils (soils that dissolve in water)		NO	YES	NO		YES	NO
Soils with high clay content (clay fraction more than 40%)		NO	YES	NO		YES	NO
Any other unstable soil or geological feature		NO	YES	NO		YES	NO
An area sensitive to erosion		NO	YES	NO		YES	NO

If you are unsure about any of the above or if you are concerned that any of the above aspects may be an issue of concern in the application, an appropriate specialist should be appointed to assist in the completion of this section. (Information in respect of the above will often be available as part of the project information or at the planning sections of local authorities. Where it exists, the 1:50 000 scale Regional Geotechnical Maps prepared by the Council for Geo Science may also be consulted).

4. GROUNDCOVER

Indicate the types of groundcover present on the site:

4.1 Natural veld – good condition [E]
4.2 Natural veld – scattered aliens [E]
4.3 Natural veld with heavy alien infestation [E]
4.4 Veld dominated by alien species [E]
4.5 Gardens
4.6 Sport field
4.7 Cultivated land
4.8 Paved surface
4.9 Building or other structure
4.10 Bare soil

The location of all identified rare or endangered species or other elements should be accurately indicated on the site plan(s).

Natural veld - good condition[E]	Natural veld with scattered aliens[E]	Natural veld with heavy alien infestation[E]	Veld dominated by alien species[E]	Gardens
Sport field	**Cultivated land**	Paved surface	Building or other structure	**Bare soil (existing access roads)**

If any of the boxes marked with an "[E] "is ticked, please consult an appropriate specialist to assist in the completion of this section if the environmental assessment practitioner doesn't have the necessary expertise.

The proposed site consists mainly of the Kalahari Karroid Shrubland. Dominant species in this vegetation type include small tree, Acaia mellifera, Parkinsonia Africana and Boscia foetida, , the tall shrubm Rhigozum trichotomum, the low shrubs, Hermannia spinosa and Phaeoptilum spinosum, the herbs, Dicoma capensis, chamaesyce inaequilatera and Limeum aethiopicum and grasses, Aristida adscensionis, Enneapogon desvauxii, Escaberm Stipagrostis obtuse and Aristida congesta. At a national scale the vegetation has been transformed only a small amount. Although only a small amount is conserved in Augrabies Falls National Park, it is considered to be Least Threatened. Two tree species protected under the National Forest Act were found on site. Ten individuals of Acacia erioloba and two species of Boscia albitrunca. Both these species occur are associated with drainage lines (refer to figure 4 below). However, no PV

array foundation infrastructure will be placed on those site positions. The PV panels and associated foundation infrastructure will be positioned to avoid protected tree species. In addition,a permit will have to be obtained if these species are disturbed by PV panels and associated infrastructure.

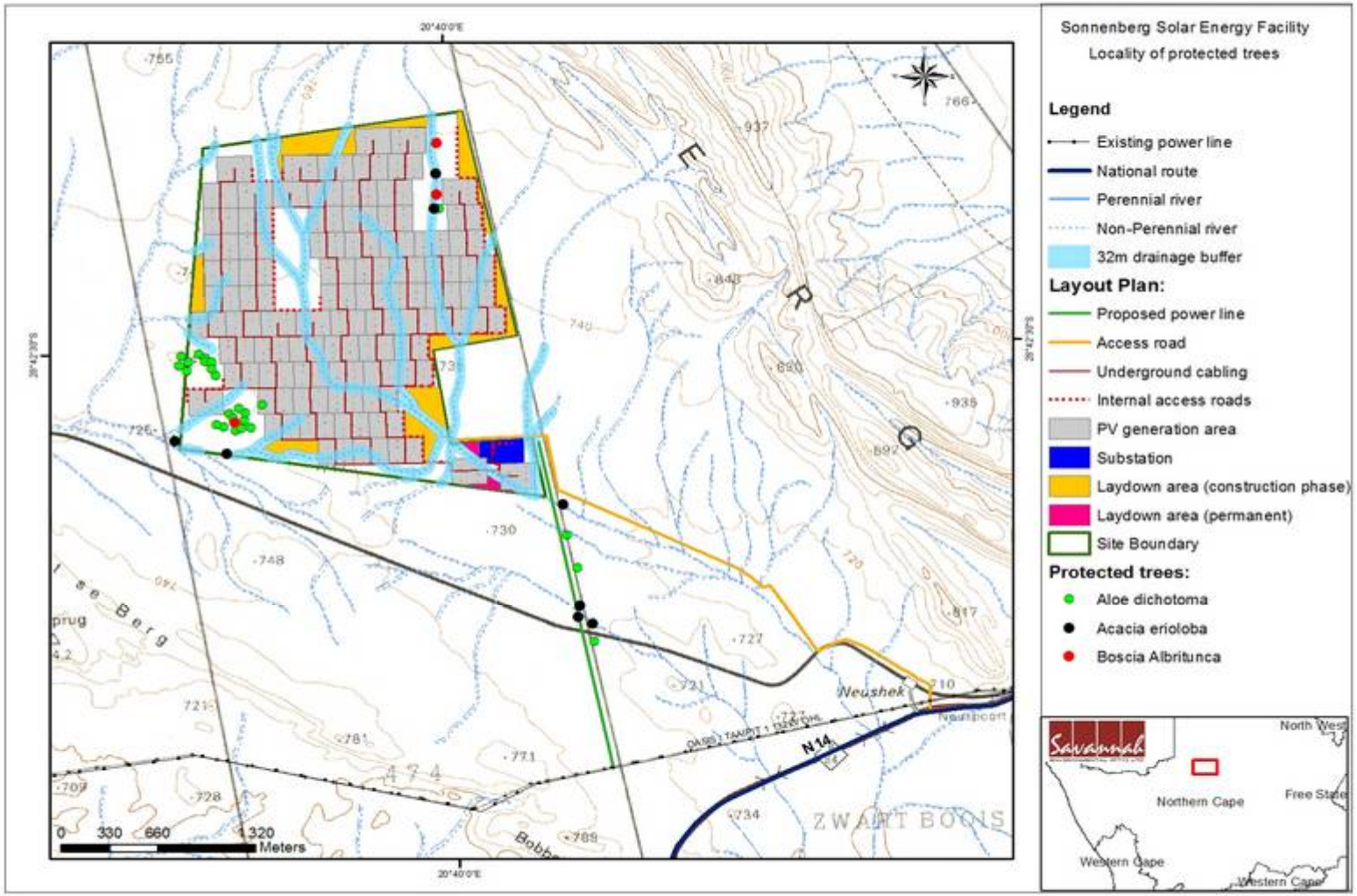

Figure 4: Map indicating the protected tree species within the authorised Sonnenberg Energy Facility

5. LAND USE CHARACTER OF SURROUNDING AREA

Indicate land uses and/or prominent features that does currently occur within a 500m radius of the site and give description of how this influences the application or may be impacted upon by the application:

5.1 Natural area
5.2 Low density residential
5.3 Medium density residential
5.4 High density residential
5.5 Informal residential[A]
5.6 Retail commercial & warehousing
5.7 Light industrial
5.8 Medium industrial [AN]
5.9 Heavy industrial [AN]
5.10 Power station
5.11 Office/consulting room
5.12 Military or police base/station/compound
5.13 Spoil heap or slimes dam[A]
5.14 Quarry, sand or borrow pit
5.15 Dam or reservoir
5.16 Hospital/medical centre
5.17 School
5.18 Tertiary education facility
5.19 Church
5.20 Old age home
5.21 Sewage treatment plant[A]
5.22 Train station or shunting yard [N]
5.23 Railway line [N]
5.24 Major road (4 lanes or more) [N]
5.25 Airport [N]
5.26 Harbour
5.27 Sport facilities
5.28 Golf course
5.29 Polo fields
5.30 Filling station [H]
5.31 Landfill or waste treatment site
5.32 Plantation
5.33 Agriculture
5.34 River, stream or wetland
5.35 Nature conservation area
5.36 Mountain, koppie or ridge

5.37 Museum
5.38 Historical building
5.39 Protected Area
5.40 Graveyard
5.41 Archaeological site
5.42 Other land uses (describe)

If any of the boxes marked with an "[N] "are ticked, how this impact will / be impacted upon by the proposed activity.

If YES, specify and explain:	

If any of the boxes marked with an "[An]" are ticked, how will this impact / be impacted upon by the proposed activity.

If YES, specify and explain:	

If any of the boxes marked with an "[H]" are ticked, how will this impact / be impacted upon by the proposed activity.

If YES, specify and explain:	

6. CULTURAL/HISTORICAL FEATURES

Are there any signs of culturally or historically significant elements, as defined in section 2 of the National Heritage Resources Act, 1999, (Act No. 25 of 1999), including Archaeological or paleontological sites, on or close (within 20m) to the site?	[redacted]	NO
If YES, explain:		

If uncertain, conduct a specialist investigation by a recognised specialist in the field to establish whether there is such a feature(s) present on or close to the site.

Specialists reports for the authorised Sonnenberg PV facility are included in **Appendix D**

Briefly explain the findings of the specialist:	The proposed site consists of Middle Stone Age MSA artefacts eroding around quartz that protrudes through the thick sand cover of the area. Seven Stone Age sites were identified during the survey. They are mostly considered to be of MSA origin but some LSA material may be present. These sites must be demarcated during development to avoid impact. Final comments on the proposed watercourse crossings were obtained from SAHRA as part of this process No objection to the proposed activities was raised. Comments from SAHRA regarding this project are included in **Appendix E1**. SAHRA has no objections regarding the approved Sonnenberg Solar PV facility as indicated in their comments on the EIA study undertaken for the facility. A copy of the comments received from the Sonnenberg facility during the EIA process completed for the PV facility is included in **Appendix E3**

Will any building or structure older than 60 years be affected in any way?	NO
Is it necessary to apply for a permit in terms of the National Heritage Resources Act, 1999 (Act 25 of 1999)?	NO

If yes, please submit or, make sure that the applicant or a specialist submits the necessary application to SAHRA or the relevant provincial heritage agency and attach proof thereof to this application if such application has been made.

SECTION C: PUBLIC PARTICIPATION

Record of Public Involvement Process is included in **Appendix H**

1. ADVERTISEMENT

The person conducting a public participation process must take into account any guidelines applicable to public participation as contemplated in section 24J of the Act and must give notice to all potential interested and affected parties of the application which is subjected to public participation by—

(a) fixing a notice board (of a size at least 60cm by 42cm; and must display the required information in lettering and in a format as may be determined by the competent authority) at a place conspicuous to the public at the boundary or on the fence of—
  (i) the site where the activity to which the application relates is or is to be undertaken; and
  (ii) any alternative site mentioned in the application;
(b) giving written notice to—
  (i) the owner or person in control of that land if the applicant is not the owner or person in control of the land;
  (ii) the occupiers of the site where the activity is or is to be undertaken or to any alternative site where the activity is to be undertaken;
  (iii) owners and occupiers of land adjacent to the site where the activity is or is to be undertaken or to any alternative site where the activity is to be undertaken;
  (iv) the municipal councillor of the ward in which the site or alternative site is situated and any organisation of ratepayers that represent the community in the area;
  (v) the municipality which has jurisdiction in the area;
  (vi) any organ of state having jurisdiction in respect of any aspect of the activity; and
  (vii) any other party as required by the competent authority;
(c) placing an advertisement in—
  (i) one local newspaper; or
  (ii) any official *Gazette* that is published specifically for the purpose of providing public notice of applications or other submissions made in terms of these Regulations;
(d) placing an advertisement in at least one provincial newspaper or national newspaper, if the activity has or may have an impact that extends beyond the boundaries of the metropolitan or local municipality in which it is or will be undertaken: Provided that this paragraph need not be complied

with if an advertisement has been placed in an official *Gazette* referred to in subregulation 54(c)(ii); and

(e) using reasonable alternative methods, as agreed to by the competent authority, in those instances where a person is desiring of but unable to participate in the process due to—

(i) illiteracy;

(ii) disability; or

(iii) any other disadvantage.

Adverts were placed as follows:

Publication name	Volksblad	Gemsbok
Date published	15 January 2014	15 January 2014
Site notice position	**Latitude**	**Longitude**
	28°43'57.13"S	20°41'58.60"E
Date placed	11 December 2013	

2. CONTENT OF ADVERTISEMENTS AND NOTICES

A notice board, advertisement or notices must:

(a) indicate the details of the application which is subjected to public participation; and

(b) state—

(i) that the application has been submitted to the competent authority in terms of these Regulations, as the case may be;

(ii) whether basic assessment or scoping procedures are beingapplied to the application, in the case of an application for environmental authorisation;

(iii) the nature and location of the activity to which the application relates;

(iv) where further information on the application or activity can be obtained; and

(iv) the manner in which and the person to whom representations in respect of the application may be made.

Proof of adverts placed is included within **Appendix H1**

3. PLACEMENT OF ADVERTISEMENTS AND NOTICES

Where the proposed activity may have impacts that extend beyond the municipal area where it is located, a notice must be placed in at least one provincial newspaper or national newspaper, indicating that an application will be submitted to the competent authority in terms of these regulations, the nature and location of the activity, where further information on the proposed activity can be obtained and the manner in which representations in respect of the application can be made, unless a notice has been placed in any *Gazette* that is published specifically for the purpose of providing notice to the public of applications made in terms of the EIA regulations.

Advertisements and notices must make provision for all alternatives.

Due to the localised nature of the project, the adverts were placed in local and regional newspapers only.

- » Site notices were placed on the farm entrance gate.
- » Adverts were placed in the Volksblad and Gemsbok newspapers to notify the public of the proposed project, and regarding the availability and comment period of the Draft BAR

4. DETERMINATION OF APPROPRIATE MEASURES

The practitioner must ensure that the public participation is adequate and must determine whether a public meeting or any other additional measure is appropriate or not based on the particular nature of each case. Special attention should be given to the involvement of local community structures such as Ward Committees, ratepayers associations and traditional authorities where appropriate. Please note that public concerns that emerge at a later stage that should have been addressed may cause the competent authority to withdraw any authorisation it may have issued if it becomes apparent that the public participation process was inadequate.

The public participation consultation has included the publishing of notices regarding the proposed project as well as the distribution of notification lettrs to identified I&APs .

In terms of the requirement of Chapter 6 of the EIA Regulations of June 2010, the following public participation tasks are required to be undertaken:

» Distribution of Letters of Notification to identified and registered I&APs to inform them of the project.
» Fixing a notice board at a place conspicuous to the public at the boundary or on the fence of the site where the activity to which the application relates is or is to be undertaken.
» Giving written notice to:
    (i) the owner or person in control of that land if the applicant is not the owner or person in control of the land;
    (ii) the occupiers of the site where the activity is or is to be undertaken or to any alternative site where the activity is to be undertaken;
    (iii) Owners and occupiers of land adjacent to the site where the activity is or is to be undertaken or to any alternative site where the activity is to be undertaken;
    (iv) the municipal councillor of the ward in which the site or alternative site is situated and any organisation of ratepayers that represent the community in the area;
    (v) the municipality which has jurisdiction in the area;
    (vi) any organ of state having jurisdiction in respect of any aspect of the activity; and
    (vii) any other party as required by the competent authority.
» Placing an advertisement in local and regional newspapers
» Open and maintain a register/ database of interested and affected parties and organs of state
» Release of a Draft BA Report for Public Review for a 40-day period.
» Providing opportunity for Focus Group Meetings to discuss and share information on the project, should these be required by registered parties. No requests for meetings were received.
» Preparation of a Comments and Responses Report which document all the comments received and responses from the project team.

Public participation documentation is included within Appendices E and H.

Key stakeholders (other than organs of state) identified in terms of Regulation 54(2)(b) of GN R543:

Registered I&AP Database is included within **Appendix H2**

Title, Name and Surname	Affiliation/ key stakeholder status	Contact details (tel number or e-mail address)
Hendrik Henning	Hydrologist & Water Specialist Kakamas	
Bester De Kock	Farmer	
Mr Jannie Spangenberg	Farmer	

Title, Name and Surname	Affiliation/ key stakeholder status	Contact details (tel number or e-mail address)
Carolyn Ah Sheen-Verdoom	Birdlife South Africa	
Nathan Afrikaner	Bongasie security	
Sampie Beukes	Community and Legal Resources Centre Keimoes	
G.A Spangenberg	Keimoes Hotel	
Suzanne Erasmus	Wildife and Environment Society of South Africa (Wessa)	
John Geeringh	Eskom	

Record of Public Involvement Process is included in appendix H

5. COMMENTS AND RESPONSE REPORT

The practitioner must record all comments and respond to each comment of the public before the application is submitted. The comments and responses must be captured in a comments and response report as prescribed in the EIA regulations and be attached to this application. The comments and response report must be attached under Appendix E.

No comments have been received on the project to date. Comments received during the review period of the Draft Basic Assessment report will be included in the Final Basic Assessment Report.

6. AUTHORITY PARTICIPATION

Authorities are key interested and affected parties in each application and no decision on any application will be made before the relevant local authority is provided with the opportunity to give input. The planning and the environmental sections of the local authority must be informed of the application at least 30 (thirty) calendar days before the submission of the application.

List of authorities informed:

Kai! Garib Local Municipality //Khara Hais Local Municipality Department of Agriculture and Forestry Department of Energy Department of mineral Resources Department of Water Affairs Northern Cape Department of Agriculture, Land Reform & Rural Development Northern Cape Department of Roads and Public Works Northern Cape Provincial Heritage Resources Agency South African Heritage Resources Agency (SAHRA) South African National Roads Agency ZF Mgcawu District Municipality

List of authorities from whom comments have been received:

South African Heritage Resources Agency Comments from authorities are included in **Appendix E1**

7. CONSULTATION WITH OTHER STAKEHOLDERS

Note that, for linear activities, or where deviation from the public participation requirements may be appropriate, the person conducting the public participation process may deviate from the requirements of that sub regulation to the extent and in the manner as may be agreed to by the competent authority.

Any stakeholder that has a direct interest in the site or property, such as servitude holders and service providers, should be informed of the application at least 30 (thirty) calendar days before the submission of the application and be provided with the opportunity to comment.

Has any comment been received from stakeholders?	NO

If "YES", briefly describe the feedback below (also attach copies of any correspondence to and from the stakeholders to this application):

None

SECTION D: IMPACT ASSESSMENT

The assessment of impacts must adhere to the minimum requirements in the EIA Regulations, 2010, and should take applicable official guidelines into account. The issues raised by interested and affected parties should also be addressed in the assessment of impacts.

1. ISSUES RAISED BY INTERESTED AND AFFECTED PARTIES

List the main issues raised by interested and affected parties.

Public review of the Draft Basic assessment was undertaken from 15 January to 23 February 2014. Comments received have been included in the final basic assessment Report. A comments and response Report is included in **Appendix E2**.

Response from the practitioner to the issues raised by the interested and affected parties (A full response must be given in the Comments and Response Report that must be attached to this report):

Responses to comments raised are provided in the comments and responses report contained in **Appendix E2**

2. IMPACTS THAT MAY RESULT FROM THE PLANNING AND DESIGN, CONSTRUCTION, OPERATIONAL, DECOMMISSIONING AND CLOSURE PHASES AS WELL AS PROPOSED MANAGEMENT OF IDENTIFIED IMPACTS AND PROPOSED MITIGATION MEASURES

List the potential direct, indirect and cumulative property/activity/design/technology/operational alternative related impacts (as appropriate) that are likely to occur as a result of the planning and design phase, construction phase, operational phase, decommissioning and closure phase, including impacts relating to the choice of site/activity/technology alternatives as well as the mitigation measures that may eliminate or reduce the potential impacts listed.

Activity	Impact summary	Significance	Proposed mitigation
Installation of hard surfaces	***Direct impacts:*** Impact as a result of flow diversion and increased surface flow velocities - structures could interfere with natural run-off patterns, diverting flows and increasing the velocity of surface water flows. Impact would be limited to once the roads, stormwater management features, erosion protection structures and the culvert watercourse crossings have been constructed	Low	• A stormwater management and erosion control plan, as well as a rehabilitation plan should be implemented. • Stormwater and any runoff generated by the hard surfaces should be discharged into retention swales or areas with rock rip-rap. • Culvert crossings should not trap any run-off, thereby creating inundated areas, but allow for free flowing systems • Ground surfaces within the proposed site must be properly maintained to avoid erosion impacts
	Indirect impacts: Potential to increase the potential for erosion in the study area, while increasing sedimentation of downstream areas, once flows subside	Low	
	Cumulative impacts: Increased potential for erosion in the study area, and increased sedimentation of downstream areas	Low	
Road and culvert construction involves the creation of hard surfaces, which usually includes the provision of stormwater drainage.	***Direct impacts:*** Diversion of flow away from one water body, while increasing flow velocities of run-off into another, during the operational phase.	Low	• A stormwater and erosion control plan, as well as a rehabilitation plan should be developed and implemented. • Stormwater and any runoff generated by the hard surfaces should be discharged into retention swales or areas with rock rip-rap
	Indirect impacts: The soils within the study area are susceptible to erosion when subjected to high flows (high	Low	

Activity	Impact summary	Significance	Proposed mitigation
	volumes and velocities), with head-cuts readily forming within the streams and drainage lines. This creates bed and bank instability of the aquatic ecosystems and consequent sedimentation of downstream areas. Should surface water flows be diverted, changes in regional hydrological patterns could also occur, i.e. lead to the drying out of certain areas.		• All stormwater control features should have soft engineered areas that attenuate flows allowing for water to percolate in the local aquifers
	Cumulative impacts: Increased potential for erosion in the study area, and increased sedimentation of downstream areas	Low	
Use of various materials, such as sediments, diesel, oils and cement during construction	***Direct impacts:*** Threat to the continued functioning of the stream areas and drainage lines, if by chance it is dispersed via surface run-off, or are allowed to permeate into the groundwater.	Low	• A stormwater management and erosion control plan, as well as a rehabilitation plan should be developed and implemented. • Chemicals used for road surfacing and culverts must be stored safely on site and surrounded by bunds. Chemical storage containers must be regularly inspected so as to prevent leaks into aquatic systems. • Littering and contamination of water sources during construction must be mitigated by effective construction
	Indirect impacts: None	Low	
	Cumulative impacts: Due to the agricultural activities in the study area (cultivated lands and livestock grazing) the aquatic systems already contain high levels of nitrates, phosphates and organic matter. Impacts associated with spillages could increase	Low	

Activity	Impact summary	Significance	Proposed mitigation
	the significance of this impact.		camp management. • Emergency plans must be in place in case of spillages onto road surfaces and watercourses. • No stockpiling should take place within a watercourse. • All stockpiles must be protected from erosion, stored on flat areas where run-off will be minimised, and be surrounded by bunds. • Stockpiles must be located away from the wetland and watercourse areas if at all possible and for as short a time as possible. • Erosion control of all banks must take place so as to reduce erosion and sedimentation into watercourses. • The construction camp and necessary ablution facilities meant for construction workers must be well removed from the wetland and watercourse areas, preferably at a distance greater than 100m.
Construction of infrastructure needed	***Direct impacts:*** • Loss of vegetation and species of	Low-moderate	• Position infrastructure to avoid plant species of observation concerns

Activity	Impact summary	Significance	Proposed mitigation
to support the PV facility	conservation concern (including protected tree species) due to clearing • Loss or fragmentation of indigenous natural vegetation • Loss of farmlands		• Efforts must be made to not damage plants and trees that are outside the developments areas • Where infrastructure needs to cross watercourses they should not alter flow patterns of the watercourses • Manage erosion control and limit the footprint area of the construction • Vehicles should not be allowed to drive indiscriminately over watercourses • Implement waste management as per EMP • Monitor the establishment of alien invasive species and remove as soon as detected using appropriate measures. No herbicides should be used. • Obtain permits for impacting on protected trees and plants of conservation concern prior to undertaking construction activities • All areas disturbed by construction related activities such as construction platforms, workshop areas etc., should be rehabilitated at the end of the
	Indirect impacts: Possible establishment of alien species due the disturbance	Low	
	Cumulative impacts: • Ecological degradation/ loss of ecological integrity • Alien invasion may lead to additional loss of habitat that could exacerbate the impact	Low	

Activity	Impact summary		Significance	Proposed mitigation
				construction phase
Alternative 2: N/A				
	Direct impacts:			
	Indirect impacts:			
	Cumulative impacts:			
Alternative 3: N/A				
	Direct impacts:			
	Indirect impacts:			
	Cumulative impacts:			

3. ENVIRONMENTAL IMPACT STATEMENT

Taking the assessment of potential impacts into account, please provide an environmental impact statement that summarises the impact that the proposed activity and its alternatives may have on the environment after the management and mitigation of impacts have been taken into account, with specific reference to types of impact, duration of impacts, likelihood of potential impacts actually occurring and the significance of impacts.

Alternative A (Preferred alternative)

There are no indicators of wetland conditions on site, however the site is characterised by a number of drainage depressions and dry stream beds. Construction may lead to some direct or indirect loss or damage to these areas or cause changes to the catchment characteristics such as:

- Change in the water quality
- Diversion and increased velocity of surface water flow and reducing the permeability of the surface
- Increase in erosion potential

These impacts will occur at the site of the proposed watercourse crossings, but could have downstream impacts. The extent of the impact is therefore on the site and in the surrounding area. The impact will occur during construction. The significance of the impact is low with the implementation of appropriate mitigation measures. Based on the nature and the extent of the proposed activity the potential impacts associated with the activity can be mitigated to an acceptable level. It is concluded that the project is acceptable from an environmental perspective.

Alternative B

No-go alternative (compulsory)

This is the option of not undertaking the proposed activities and retaining the current status quo of the site. This option will result in limited or no impacts occurring on the biophysical environment. The proposed activities form part of the infrastructure of the approved Sonnenberg Solar PV facility. In terms of the detailed planning for this facility, it has been determined that the facility will encroach onto drainage lines within the development area and some infrastructure will be located within these drainage lines. In this regard the no-go option will impact on the technical feasibility of the approved Sonnenberg solar PV facility. This could result in this PV facility not being constructed. A no development option would therefore represent a lost opportunity for the local area in terms of:

- Improved energy security
- Employment and business opportunities
- Climate friendly development
- Pollution reduction

As a result, the no-go alternative is therefore not preferred.

SECTION E: RECOMMENDATION OF PRACTITIONER

Is the information contained in this report and the documentation attached hereto sufficient to make a decision in respect of the activity applied for (in the view of the environmental assessment practitioner)?	YES
Is an EMPr attached?	YES

The EMPr must be attached as Appendix F.

If "NO", indicate the aspects that should be assessed further as part of a Scoping and EIA process before a decision can be made (list the aspects that require further assessment):

If "YES", please list any recommended conditions, including mitigation measures that should be considered for inclusion in any authorisation that may be granted by the competent authority in respect of the application:

The overall impacts of the proposed activities are of low significance, with mitigation measures implemented. Based on the nature and extent of the proposed project, the potential impacts associated with the proposed activities can be mitigated to an acceptable level.

The following mitigation and management measures should be implemented:

- A stormwater management and erosion control plan, as well as a rehabilitation plan should be developed and implemented.
- Suitable stormwater structures should be used to ensure that run-off from sites is attenuated prior to discharge into watercourses. These structures should not cause erosion, siltation or sedimentation.
- Minimise erosion and sedimentation into watercourses through effective stabilisation.
- An Environmental Control Officer should be employed to ensure the implementation of the stormwater management and erosion control plan, the rehabilitation plan and the environmental monitoring programme. The ECO for the PV facility can undertake this task.
- Limit the removal of indigenous vegetation to the construction footprint and implement a rehabilitation plan as soon as cleared areas are available for planting and seeding with indigenous plants. Vegetation clearing should occur in parallel with the construction progress to minimise erosion and/or run-off.
- Where feasible, undertake stream diversions (if necessary) for culvert construction and upgrades during the dry season.
- An alien plant control programme should be initiated as part of the development, to assist Working for Water in removing the alien trees and rehabilitating the drainage lines (watercourses)
- Infrastructure must be contained within the development footprint

- The developer must obtain all relevant environmental permits (e.g. Water Use License, permit ot impact on protected trees and indigenous vegetation) associated with the proposed project.

SECTION F: APPENDICES

The following appendices must be attached as appropriate:

Appendix A: Site plan(s)

Appendix B: Photographs

Appendix C: Facility illustration(s)

Appendix D: Specialist reports

Appendix E: Comments and responses report

Appendix F: Environmental Management Programme (EMPr)

Appendix G: Other information

Appendix H: Record of Public Involvement Process