

ENVIRONMENTAL BASIC ASSESSMENT PROCESS
DRAFT BASIC ASSESSMENT REPORT

PROPOSED CONSTRUCTION OF A 132
kV POWER LINE CONNECTING THE
AUTHORISED SISHEN SOLAR ENERGY
FACILITY TO THE FERRUM MTS -
UMTU KLIP KOP 132 KV POWER LINE,
NORTHERN CAPE

DEA Ref No: 14/12/16/3/3/1/574

DRAFT FOR PUBLIC REVIEW
29 May 2012 - 29 June 2012

Prepared for:
Windfall 59 Properties (Pty) Ltd

Private Bag X159
Rivonia
South Africa

Prepared by:

Savannah Environmental Pty Ltd

UNIT 606, 1410 EGLIN OFFICE PARK
14 EGLIN ROAD, SUNNINGHILL, GAUTENG
PO BOX 148, SUNNINGHILL, 2157
TEL: +27 (0)11 234 6621
FAX: +27 (0)86 684 0547
E-MAIL: INFO@SAVANNAHSA.COM
WWW.SAVANNAHSA.COM





environmental affairs

Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

(For official use only)

File Reference Number:

Application Number:

Date Received:

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

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 is 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 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.

PROJECT DETAILS

DEA Reference No.	:	14/12/16/3/3/1/574
Title	:	Environmental Basic Assessment Process Basic Assessment Report: Proposed construction of a 132 kV power line connecting the authorised Sishen Solar Energy Facility to the Ferrum MTS - Umtu Klip Kop 132 kv power line, Northern Cape May 2012
Authors	:	Savannah Environmental Sanusha Govender Gabriele Wood Karen Jodas
Sub-consultants	:	MetroGIS
Client	:	Windfall 59 Properties (Pty) Ltd
Report Status	:	Draft Basic Assessment Report for public review
Review period	:	29 May 2012 – 29 June 2012

When used as a reference this report should be cited as: Savannah Environmental (2012) Draft Basic Assessment Report: Proposed construction of a 132 kV power line connecting the authorised Sishen Solar Energy Facility to the Ferrum MTS - Umtu Klip Kop 132 kv power line, Northern Cape.

COPYRIGHT RESERVED

This technical report has been produced for Windfall 59 Properties (Pty) Ltd. The intellectual property contained in this report remains vested in Savannah Environmental Windfall 59 Properties. No part of the report may be reproduced in any manner without written permission from Windfall 59 Properties (Pty) Ltd or Savannah Environmental (Pty) Ltd.

TABLE OF CONTENTS

PROJECT DETAILS	i
TABLE OF CONTENTS	ii
APPENDICES	iv
CHAPTER 1: SUMMARY AND OVERVIEW OF THE PROPOSED PROJECT	1

SECTION A: ACTIVITY INFORMATION	6
1. ACTIVITY DESCRIPTION	6
2. FEASIBLE AND REASONABLE ALTERNATIVES.....	7
3. ACTIVITY POSITION	8
4. PHYSICAL SIZE OF THE ACTIVITY	9
5. SITE ACCESS.....	10
6. SITE OR ROUTE PLAN	10
7. SITE PHOTOGRAPHS.....	11
8. FACILITY ILLUSTRATION.....	11
9. ACTIVITY MOTIVATION	11
10. APPLICABLE LEGISLATION, POLICIES AND/OR GUIDELINES	12
11. WASTE, EFFLUENT, EMISSION AND NOISE MANAGEMENT	13
12. WATER USE.....	16
13. ENERGY EFFICIENCY.....	17

SECTION B: SITE/AREA/PROPERTY DESCRIPTION	18
1. GRADIENT OF THE SITE.....	19
2. LOCATION IN LANDSCAPE	19
3. GROUNDWATER, SOIL AND GEOLOGICAL STABILITY OF THE SITE.....	20
4. GROUND COVER.....	20
5. LAND USE CHARACTER OF SURROUNDING AREA.....	21
6. CULTURAL/HISTORICAL FEATURES	22

SECTION C: PUBLIC PARTICIPATION	23
1. ADVERTISEMENTS AND NOTICES.....	23
2. CONTENT OF ADVERTISEMENTS AND NOTICES	23
3. PLACEMENT OF ADVERTISEMENTS AND NOTICES.....	23
4. DETERMINATION OF APPROPRIATE MEASURES	24
5. COMMENTS AND RESPONSE REPORT	24
6. AUTHORITY PARTICIPATION	24
7. CONSULTATION WITH OTHER STAKEHOLDERS.....	25

SECTION D: IMPACT ASSESSMENT26

1. ISSUES RAISED BY INTERESTED AND AFFECTED PARTIES..... 26

2. POTENTIAL IMPACTS PLANNING, DESIGN, CONSTRUCTION,
OPERATIONAL, DECOMMISSIONING, AND CLOSURE PHASES. AS
WELL MANAGEMENT OF IDENTIFIED IMPACTS AND MITIGATION
MEASURES 26

3. ENVIRONMENTAL IMPACT STATEMENT 34

SECTION E. RECOMMENDATION OF THE PRACTITIONER.....38

APPENDICES

Appendix A: Site Plan (s)

Appendix B: Photo Record(s)

Appendix C: Facility Illustration(s)

Appendix D: Specialist Reports

» *D1: Motivation for Exemption from undertaking an HIA*

Appendix E: Record of public involvement process

» *Appendix E1: Media Notice*

» *Appendix E2: Site Notice*

» *Appendix E3: Letters to Stakeholders*

» *Appendix E4: I&AP Database*

» *Appendix E5: Correspondence with Authorities*

Appendix F: Draft Environmental Management Programme

Appendix G: Other information – *no other information applicable to append*

SUMMARY AND OVERVIEW OF THE PROPOSED PROJECT CHAPTER 1

Windfall 59 Properties (Pty) Ltd proposes to construct 132 kV power line of approximately 5.8 km in length east of Dibeng in the Northern Cape. This power line would connect the Flatlands Substation (a component of the authorised Sishen Solar Energy Facility) to the Ferrum MTS - Umtu Klip Kop 132 kV power line (via a loop in-loop out configuration). This proposed development is herein after referred to as the "**The Sishen Power Line**"

A 300 m wide corridor has been assessed as part of this Basic Assessment Process and includes portions of the following farms (as indicated in **Figure 1** by the orange rectangle):

- » Wincanton 472, Portion 6
- » Limebank 471, portions 1, 2, and 3
- » Halliford 466, portions 1, and 3
- » Marsh 467, remaining extent

The purpose of the sishen power line is to evacuate electricity from the Sishen Solar Energy Facility to the Eskom grid. Environmental authorisation has been issued by the Department of Environmental Affairs (DEA) for the Sishen Solar Energy Facility under the DEA Reference number **12/12/20/1860**, and 75MW of this project was awarded preferred bidder status in the Independent Power Producers by the Department of Energy (DOE) on 21 May 2012.

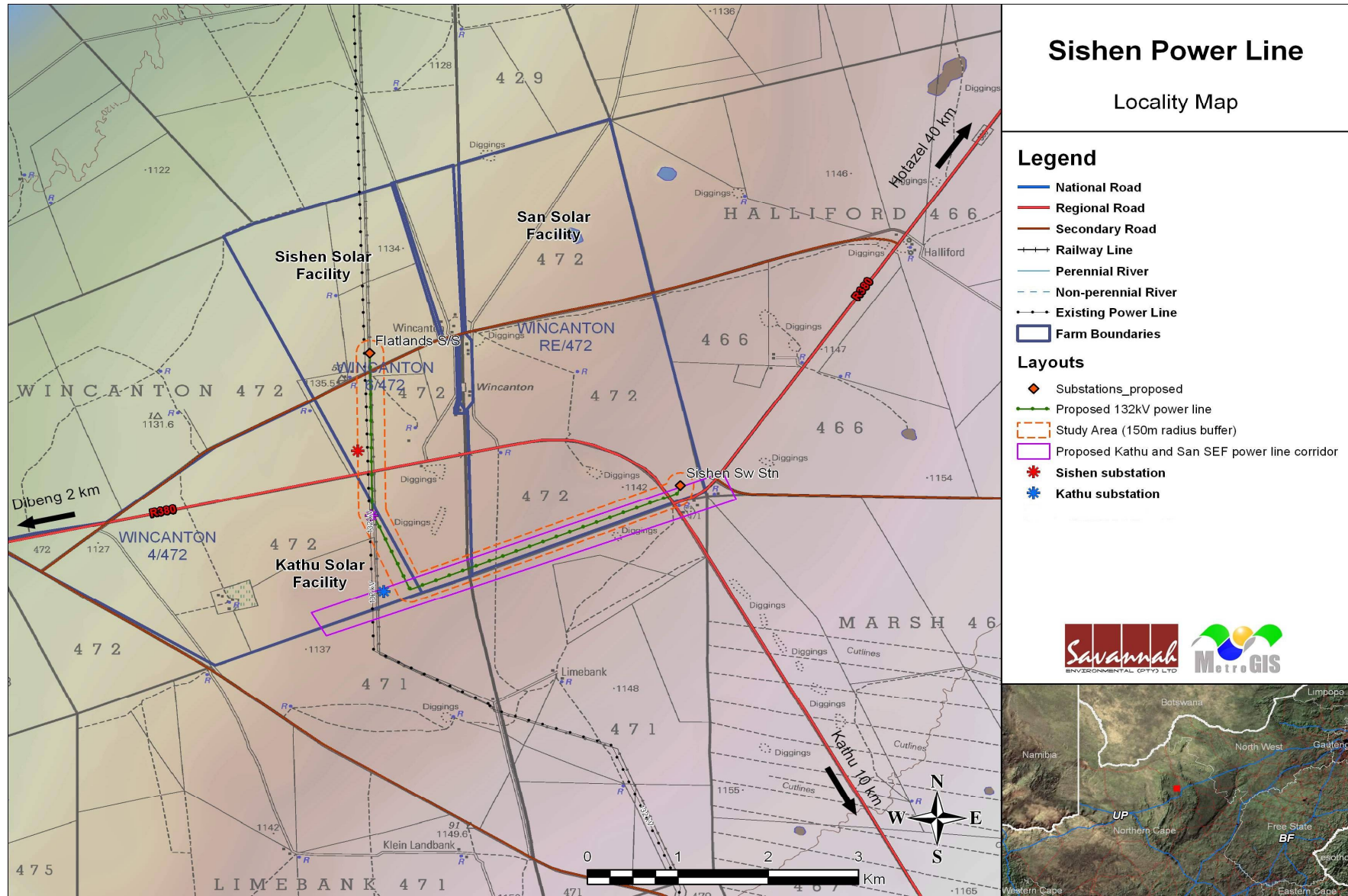
The Sishen Solar Energy Facility is located between two other solar energy facilities, namely the San Solar Energy Facility and the Kathu Solar Energy Facility (Round 1 preferred bidder). In addition, an application for authorisation has been submitted to DEA for a proposed power line to connect the San Solar and Kathu Solar Energy Facilities to the Eskom grid. The table below details all the projects in the area immediately surrounding the study area for the proposed Sishen Power Line Basic Assessment application.

Table 1: Summary of Projects proposed directly adjacent to the Sishen Power Line project

Project	DEA Reference Number	Status
San Solar Energy Facility	14/12/16/3/3/2/273	EIA process in currently in the scoping phase
Kathu Solar Energy Facility	12/12/20/1858	Received environmental authorisation from DEA on the 26/ 09 /2011. Awarded Preferred Bidder status in November 2011 (Round 1).
132 KV Power Line required for the San Solar energy	14/12/16/3/3/1/574	Final BAR has been submitted to DEA. Currently awaiting DEA

facility and the Kathu Solar Energy Facility.		decision.
Sishen Solar Energy Facility	12/12/20/1860	Received environmental authorisation from DEA on the 03/ 10 /2011. Awarded Preferred Bidder status in May 2012 (Round 2).

Both the Kathu Solar Energy Facility and the Sishen Solar Energy Facility have been awarded preferred bidder status. The development of the all three projects in this area will result in a solar energy hub for the Northern Cape and will concentrate solar projects in single vicinity. **Figure 1** below illustrates the adjacent projects in relation to this Sishen Power Line.



1.2 Requirements for a Basic Assessment Process

In terms of the EIA Regulations published in terms of Section 24(5) of the National Environmental Management Act (NEMA, Act No. 107 of 1998), authorisation is required from the National Department of Environmental Affairs¹ (DEA) (in consultation with the Northern Cape Department of Environmental and Nature Conservation (DENC)) for the establishment of the proposed project. In terms of sections 24 and 24D of NEMA, as read with the EIA Regulations of GNR543; GNR544; GNR545; and GNR546, a Basic Assessment process is required to be undertaken; and in terms of GNR544 & GNR546, the following listed activities are applicable:

Relevant Notice & Activity number	Description of the Listed Activity	Applicability to the proposed project
544, 18 June 2010, 10	The construction of facilities or infrastructure for the transmission and distribution of electricity: <ul style="list-style-type: none"> i. Outside urban areas or industrial complexes with a capacity of more than 33 but less than 275 kV; ii. Inside urban areas or industrial complexes with a capacity of 275 kV or more. 	The proposed project comprises of the development of a 132 kV power line and the Sishen Switching Station.
544, 18 June 2010, 11	The construction of: <ul style="list-style-type: none"> i. Canals; ii. Channels; iii. Bridges; iv. Dams; v. Weirs; vi. Bulk stormwater outlet structures; vii. Marinas; viii. Jetties exceeding 50 square metres in size ix. Slipways exceeding 50 m² in size x. Buildings exceeding 50 m² in size; or xi. Infrastructure or structures covering 50 m² or more 	The proposed project includes the construction of a switching station.

¹ The DEA serves as the competent (authorising) body for all power generation projects in South Africa.

Where such construction occurs within a watercourse or within 32 m of a watercourse, measures from the edge of a watercourse, excluding where such construction will occur behind the development setback line.

The project has been registered with the DEA under application reference number **14/12/16/3/3/1/574**. Savannah Environmental has been appointed as the independent environmental consultant to undertake the Basic Assessment process for the proposed power line and associated infrastructure. As part of this, interested and affected parties (I&APs) have been actively involved through a public involvement process. This process included the placement of site notices and advertisements, as well as compiling an I&AP database and distributing letters regarding the project to identified stakeholders and I&APs (refer to **Appendix E**).

The Draft Basic Assessment Report for the proposed Sishen Power Line has been made available for a 30 day public review period from the 29 May 2012 to 29 June 2012. Thereafter the comments received from I&APs will be evaluated, assessed and responded to in the Comments and Response Report which will be incorporated into the Final Basic Assessment Report.

The Final Basic Assessment Report will be submitted to the DEA for decision-making prior to issuing an Environmental Authorisation.

SECTION A: ACTIVITY INFORMATION

Has a specialist been consulted to assist with the completion of this section?

NO ✓

If YES, please complete the form entitled "Details of specialist and declaration of interest for appointment of a specialist 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 detail²:

Windfall 59 Properties (Pty) Ltd proposes to construct the authorised Sishen Solar Energy Facility however in order to proceed with the development this environmental basic assessment must be undertaken to assess the proposed corridor for the proposed Sishen Power Line. The Sishen 132kV Power line is now proposed to connect the new Flatlands Substation (A component of the Sishen Solar Energy Facility) via a loop in-loop out connection with the authorised Ferrum MTS - Umtu Klipkop 132 kV power line. The Sishen power line is approximately 5.8 km in length.

A 300 m wide corridor has been assessed as part of the Basic Assessment Process and includes portions of the following farm portions (indicated in **Figure 1** by the orange rectangle³):

- » Wincanton 472, Portion 6
- » Limebank 471, portions 1, 2, and 3
- » Halliford 466, portions 1, and 3
- » Marsh 467, remaining extent
- »

The proposed 132KV power line will connect via a loop in loop out configuration the Eskom Ferrum - Umtu Klipkop 132 KV power line. **Figure 1** indicates in orange the Sishen Power Line corridor and the Kathu and San Solar 132KV power line corridor (DEA Ref No 14/12/16/3/3/1/574) indicated by the purple rectangle.

² Please note that this description should not be a verbatim repetition of the listed activity as contained in the relevant Government Notice, but should be a brief description of activities to be undertaken as per the project description.

³ The authorised Ferrum MTS - Umtu Klipkop 132 kV power line will run in a southerly direction east of the proposed San Solar Facility.

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 are 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

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

In accordance with the requirements of the EIA Regulations⁴, alternatives are required to be considered within the EIA process, and may refer to any of the following:

- » Site alternatives;
- » Activity alternatives;
- » Design or layout alternatives;
- » Technology alternatives;
- » Operating alternatives; and
- » No-go alternative.

Site alternative – location of the power line in close proximity to the authorised Sishen Solar Energy Facility is required such that said facility can connect into the Eskom grid to evacuate its power as an Independent Power Producer. Furthermore part of the corridor that has been selected has already been assessed as part of the EIA processes for the proposed Kathu and San Solar Energy Facilities. As part of the assessments that were undertaken no fatal flaws were identified and therefore this area is considered favourable. As such, no feasible site alternatives have been identified and therefore no alternatives are assessed for the proposed project.

⁴ GNR543 27(e) calls for the applicant to identify feasible and reasonable alternatives for the proposed activity.

Activity alternative - The proposed activity can be described as the distribution of electricity using an overhead power line for electricity evacuation from the Sishen Solar Energy Facility into the National grid. As such, no activity alternatives have been considered in this Basic Assessment Process.

Technology alternative - The implementation of a technology alternative is **not applicable** for the proposed project.

Design / layout alternative - Layout alternatives refer to the spatial configuration or alignment of an activity or linear infrastructure. A corridor of 300 m has been assessed and therefore allows for alternative routings of the power line within this corridor.

The corridor has been divided into two route alternatives; north of the boundary fence and south of the boundary fence (refer to Figure 2). The northern route covers Wincanton 472, portions 6, and the remaining extent, while the southern route covers Limebank 471, portions 1, 2, and 3, remaining extent.

Operating alternative - this refers to the manner in which a facility/project would function during the operational phase. For example, should a wind energy facility prove problematic for avifauna during migrating periods, an operating alternative of switching off certain turbines during those times could be proposed. As such **no operating alternatives** would be applicable to the proposed power line.

No-go alternative - also referred to as the 'Do-nothing' option, this refers to Windfall 59 Properties (Pty) Ltd not constructing the proposed power line within the identified corridor. In this scenario the potential positive and negative environmental and social impacts as described in this Basic Assessment Report will not occur and the status quo will be maintained. However in this regard, the proposed Sishen Solar Energy Facility will not be able to evacuate its electricity into the grid thereby negating all the potential impacts (both positive and negative) associated with this renewable energy facility.

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.

Alternative:	Latitude (S):	Longitude (E):
Alternative S15	° \	° \
Alternative S2 (if any)	° \	° \
Alternative S3 (if any)	° \	° \

⁵ "Alternative S." refers to site alternatives

In the case of linear activities:

Latitude (S): Longitude (E):

Alternative:

Alternative S1 (preferred or only route alternative)

- Starting point of the activity
- Middle/Additional point of the activity
- End point of the activity

27°	34' 42.99"	22°	55'55.41
27°	25' 26.60"	22°	58' 56.99"
27°	35' 36.74"	22°	57' 44.76"

Alternative S2 (if any)

- Starting point of the activity
- Middle/Additional point of the activity
- End point of the activity

27°	34' 42.99"	22°	55'55.41
27°	25' 26.60"	22°	58' 56.99"
27°	35' 36.74"	22°	57' 44.76"

Alternative S3 (if any)

- Starting point of the activity
- Middle/Additional 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 250m along the route for each alternative alignment.

The alternative for the power line will be assessed as falling within a 300 m corridor (co-ordinates provided above). The corridor has been divided into two route alternatives; north of the boundary fence and south of the boundary fence (refer to Figure 2). The northern route covers Wincanton 472, portions 4, 6, and the remaining extent, while the southern route covers Limebank 471, portions 1, 2, and 3, remaining extent. As such the coordinates have been repeated due to close proximity.

4. PHYSICAL SIZE OF THE ACTIVITY

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

Alternative:

- Alternative A1⁶ (**South Boundary alternative**)
- Alternative A2 (**North Boundary Alternative**)
- Alternative A3 (if any)

Size of the activity:

5.8 metres in Length
5.8 metres In Length

⁶ "Alternative A." refers to activity, process, technology or other alternatives.

Or, for linear activities:

Alternative:

Alternative A1	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	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 ✓	

If NO, what is the distance over which a new access road will be built

Describe the type of access road planned:

The eastern most side of the corridor can be accessed via the R380 to Dibeng, while the western most side can be accessed via existing farm roads, also off the R380.

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);
- 6.10 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
- 6.11 The positions from where photographs of the site were taken.

A detailed site plan has been included as part of this report as 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.

Colour photographs taken in the eight major compass directions from the centre of the power line corridor being assessed.

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 will be included into the Final DBAR.

9. ACTIVITY MOTIVATION

9(b) Need and desirability of the activity

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

NEED:			
1.	Was the relevant provincial planning department involved in the application?	YES ✓	
2.	Does the proposed land use fall within the relevant provincial planning framework?	YES ✓	
3.	If the answer to questions 1 and / or 2 was NO, please provide further motivation		

	/ explanation:

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?	YES✓	
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:		
5.	Will the proposed land use / development impact on the sense of place?		NO✓
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.		

BENEFITS:			
1.	Will the land use / development have any benefits for society in general?	YES✓	
2.	Explain: The power line is required for the evacuation of additional electricity into the Eskom grid from the Sishen Solar Energy Facility. This in turn will serve to strengthen the grid in the area, and assist in the small-scale alleviation of pressure of electricity generation from coal-fired power stations.		
3.	Will the land use / development have any benefits for the local communities where it will be located?	YES✓	
4.	Explain: The benefits will be indirect. The proposed power line is required to evacuate power from a new renewable energy facility into the Eskom grid. Therefore indirect benefits exist in terms of job opportunities and the evacuation of additional energy from the Sishen Solar Energy Facility.		

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 legislation, policy or guideline: **Administering authority:** **Date:**

National Environmental Management Act (Act No 107 of 1998)	National and Provincial Department of Environmental Affairs	1998
National Environmental Management: Waste Act (Act No 59 of 2008)	Department of Environmental Affairs	2008
National Water Act (Act No 36 of 1998)	Department of Water Affairs	1998
National Heritage Resources Act (Act No 25 of 1999)	South African Heritage Resources Agency	1999
Promotion of Access to Information Act (Act No 2 of 2000)	National Department of Environmental Affairs	2000
Hazardous Substances Act (Act No. 15 of 1973)	Department of Health	1973
National Road Traffic Act (Act No 93 of 1996)	South African National Roads Agency Limited (national roads) Provincial Department of Transport	1996
Development Facilitation Act (Act No 67 of 1995)	Local and District Municipality	1995
Promotion of Administrative Justice Act (Act No. 3 of 2000)	National Department of Environmental Affairs	2000
<i>Policies and White Papers</i>		
The White Paper on the Energy Policy of the Republic of South Africa (December 1998)	N/A	1998
The White Paper on Renewable Energy (November 2003)	N/A	2003
The White Paper on the Energy Policy of the Republic of South Africa (December 1998)	N/A	N/A
<i>Miscellaneous</i>		
Gamagara Local Municipality: Integrated Development Plan	Gamagara Local Municipality	2007/08 – 2010/11
Kgalagadi District Municipality: Integrated Development Plan	Kgalagadi District Municipality	2007/08 – 2010/11
Kgalagadi District Municipality: Spatial Development	Kgalagadi District Municipality	2006/2007

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?

A minor amount of construction waste would be produced as no major earthworks will be required.

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

Any solid construction waste will be removed from site and disposed of at a licensed waste facility.

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

All waste will be disposed of a registered waste facility, likely to be in Kathu.

Will the activity produce solid waste during its operational phase?

NO ✓

If yes, what estimated quantity will be produced per month?

m³

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 will be disposed of in a municipal sewage system?

NO ✓

If yes, what estimated quantity will be produced per month?

m³

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.

--

11(c) Emissions into the atmosphere

Will the activity release emissions into the atmosphere?

	NO ✓
YES	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:

No emissions are generated through the operation of a power line.

11(d) Generation of noise

Will the activity generate noise?

	NO ✓
YES	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:

The power line will not generate any noise during the operation phase.
--

12. WATER USE

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

Municipal	Water board	Ground water	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:

Does the activity require a water use permit from the Department of Water Affairs?

	NO ✓
--	-------------

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.

13. ENERGY EFFICIENCY

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

The proposed facility will not require energy during the operational stage.

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

This is not applicable.

SECTION B: SITE/AREA/PROPERTY DESCRIPTION

Important notes:

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):

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

2. Has a specialist been consulted to assist with the completion of this section? **NO ✓**

If YES, please complete the form entitled "Details of specialist and declaration of interest" for each specialist thus appointed:

All specialist reports must be contained in **Appendix D**.

Property description/physical address:

A portion of the following farm portions:
 » Wincanton 472, portions 6
 » Limebank 471, portions 1, 2, and 3
 » Halliford 466, portions 1, and 3
 » Marsh 467, remaining extent

(Farm name, portion etc.) Where a large number of properties are involved (e.g. linear activities), please attach a full list to this application.

In instances where there is more than one town or district involved, please attach a list of towns or districts to this application.

Current land-use zoning:

Agricultural

In instances where there is more than one current land-use zoning, please attach a list of current land use zonings that also indicate which portions each use pertains to , to this application.

Is a change of land-use or a consent use application required? **NO ✓**
 Must a building plan be submitted to the local authority? **NO ✓**

Locality map: An A3 locality map must be attached to the back of this document, as Appendix A. The scale of the locality map must be relevant to the size of the development (at least 1:50 000. For linear activities of more than 25 kilometres, a smaller scale e.g. 1:250 000 can be used. The scale must be indicated on the map.) The map must indicate the following:

- An indication of the project site position as well as the positions of the alternative sites, if any;
- Road access from all major roads in the area;
- Road names or numbers of all major roads as well as the roads that provide access to the site(s);
- All roads within a 1km radius of the site or alternative sites; and
- A north arrow;
- A legend; and
- Locality GPS co-ordinates (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).

The locality map has been included and attached as **Appendix A**:

1. GRADIENT OF THE SITE

Indicate the general gradient of the site.

Alternative S1:

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

Alternative S2 (if any):

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

Alternative S3 (if any):

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

2. LOCATION IN LANDSCAPE

Indicate the landform(s) that best describes the site (**Applicable to S1 and S2**):

- 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).	<input type="checkbox"/> NO ✓	<input type="checkbox"/> NO ✓	YES	NO
Dolomite, sinkhole, or doline areas.	<input type="checkbox"/> NO ✓	<input type="checkbox"/> NO ✓	YES	NO
Seasonally wet soils (often close to water bodies).	<input type="checkbox"/> NO ✓	<input type="checkbox"/> NO ✓	YES	NO
Unstable rocky slopes or steep slopes with loose soil.	<input type="checkbox"/> NO ✓	<input type="checkbox"/> NO ✓	YES	NO
Dispersive soils (soils that dissolve in water).	<input type="checkbox"/> NO ✓	<input type="checkbox"/> NO ✓	YES	NO
Soils with high clay content (clay fraction more than 40%).	<input type="checkbox"/> NO ✓	<input type="checkbox"/> NO ✓	YES	NO
Any other unstable soil or geological feature.	<input type="checkbox"/> NO ✓	<input type="checkbox"/> NO ✓	YES	NO
An area sensitive to erosion.	<input type="checkbox"/> NO ✓	<input type="checkbox"/> 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 (Applicable to S1 and S2):

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

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.

5. LAND USE CHARACTER OF SURROUNDING AREA

Indicate land uses and/or prominent features that does currently occur within a 500 m 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 and 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 (grazing)✓

- 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) Provincial Road (R380), traction line, and a proposed power line (Ferrum MTS - Umtu Klipkop 132 kV power line.)

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

--

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:

If YES, specify:

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

	NO ✓
--	-------------

Archaeological or palaeontological sites, on or close (within 20m) to the site?

	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.

Briefly explain the findings of the specialist:

David Morris of the McGregor Museum undertook the Heritage Impact Assessment (HIA) for the proposed Kathu and Sishen Solar Energy Facilities. As such he has provided a letter stating that in his professional opinion a separate HIA is not required for the undertaking of the proposed power line project.
--

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

1. ADVERTISEMENTS AND NOTICES

- » Site notices were placed on along the power line route.
- » A stakeholder letter was distributed to an established database of interested and affected parties that was compiled for the EIA process for the Kathu and Sishen Solar Energy Facilities. The stakeholder letter served to announce the proposed project and invite comment on the draft Basic Assessment Report.
- » A notice was placed in **Die Volksblad** newspaper on **29 June 2012** to advertise the Basic Assessment process and the availability of the draft Basic Assessment Report.

Refer to Appendix E for proof of placement of the advertisements, site notice, and letters to stakeholders.

2. CONTENT OF ADVERTISEMENTS AND NOTICES

The contents of the notices and adverts were in accordance with the following requirements:

- (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 being applied 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;
 - (iv) The manner in which and the person to whom representations in respect of the application may be made.

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.

The proposed power line is unlikely to result in any impacts that extend beyond the municipal area where it is located.

The advertisement placed outlined the Basic Assessment process, the nature, and location of the proposed project, where further information on the proposed activity could be obtained and the manner in which representations on the application could be made. The advertisement also indicated the availability of the draft Basic Assessment Report for public review (refer to Appendix E). Furthermore previous public meetings were held for the San Solar Energy Facility, the Sishen Solar Facility and the Kathu Solar Energy Facility where the connecting power lines were discussed.

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.

Due to the small footprint and the localised nature of the proposed project a public meeting was not deemed necessary. The use of a stakeholder database, an advertisement in the local media, and site notices was deemed adequate for the involvement of the public in the process. No comments have been received to date.

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 written comments have been received to date.

6. AUTHORITY PARTICIPATION

Please note that a complete list of all organs of state and or any other applicable authority with their contact details must be appended to the basic assessment report or scoping report, whichever is applicable.

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.

Authorities were informed of the Basic Assessment process through the submission of a stakeholder letter.

- Department of Energy
- Department of Transport, Roads & Public Work

- Birdlife South Africa
- Northern Cape Rock Art Trust (NCRA) McGregor Museum
- Department of Agriculture, Land Reform and Rural Development
- Department of Agriculture, Forestry and Fisheries Northern Cape – Upington
- Gamagara Municipality - Kathu
- Tshipeng Water User Association.

List of authorities from whom comments have been received:

No written comments from Authorities have been received to date.

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.

Proof of any such agreement must be provided, where applicable.

Potentially affected stakeholders have been identified and consulted regarding the proposed project, including, inter alia:

- » Parastatals and service providers
- » Members of the public
- » Surrounding landowners
- » The Local and District Municipality.

A stakeholder database of is attached in Appendix E.

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):

No comments have been received to date. However any comments received following the submission of this Draft BAR will be incorporated into the Final BAR and submitted to DEA accordingly.

SECTION D: IMPACT ASSESSMENT

The assessment of impacts must adhere to the minimum requirements in the EIA Regulations, 2010, and should consider applicable official guidelines. 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.

No comments have been received to date, however all comments received will be incorporated into Final BAR which will be submitted to the Department of Environmental Affairs.

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 as Annexure E):

No comments have been received to date. A comments and response report will be included into the Final BAR.

2. IMPACTS THAT MAY RESULT FROM THE PLANNING, 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.

The following methodology was used in assessing impacts related to the proposed development. All impacts are assessed according to the following criteria:

- » The **nature**, a description of what causes the effect, what will be affected, and how it will be affected.
- » The **extent**, wherein it is indicated whether the impact will be local (limited to the immediate area or site of development), regional, national or international. A score of between 1 and 5 is assigned as appropriate (with a score of 1 being low and a score of 5 being high).
- » The **duration**, wherein it is indicated whether:
 - * The lifetime of the impact will be of a very short duration (0–1 years) – assigned a score of 1;
 - * The lifetime of the impact will be of a short duration (2-5 years) - assigned a score of 2;

- * Medium-term (5–15 years) – assigned a score of 3;
- * Long term (> 15 years) - assigned a score of 4; or;
- * Permanent - assigned a score of 5.
- » The **magnitude**, quantified on a scale from 0-10, where a score is assigned:
 - * 0 is small and will have no effect on the environment;
 - * 2 is minor and will not result in an impact on processes;
 - * 4 is low and will cause a slight impact on processes;
 - * 6 is moderate and will result in processes continuing but in a modified way;
 - * 8 is high (processes are altered to the extent that they temporarily cease); and
 - * 10 is very high and results in complete destruction of patterns and permanent cessation of processes.
- » The **probability** of occurrence, which describes the likelihood of the impact actually occurring. Probability is estimated on a scale, and a score assigned:
 - * Assigned a score of 1–5, where 1 is very improbable (probably will not happen);
 - * Assigned a score of 2 is improbable (some possibility, but low likelihood);
 - * Assigned a score of 3 is probable (distinct possibility);
 - * Assigned a score of 4 is highly probable (most likely); and
 - * Assigned a score of 5 is definite (impact will occur regardless of any prevention measures).
- » The **significance**, which is determined through a synthesis of the characteristics described above (refer formula below) and can be assessed as low, medium or high.
- » The **status**, which is described as either positive, negative or neutral.
- » The degree to which the impact can be reversed.
- » The degree to which the impact may cause irreplaceable loss of resources.
- » The degree to which the impact can be mitigated.

The **significance** is determined by combining the criteria in the following formula:

$S = (E+D+M) P$; where

S = Significance weighting

E = Extent

D = Duration

M = Magnitude

P = Probability

The **significance** weightings for each potential impact are as follows:

- » < **30 points**: Low (i.e. where this impact would not have a direct influence on the decision to develop in the area),
- » **30-60 points**: Medium (i.e. where the impact could influence the decision to develop in the area unless it is effectively mitigated),
- » > **60 points**: High (i.e. where the impact must have an influence on the decision process to develop in the area).

2.1. IMPACTS THAT MAY RESULT FROM THE PLANNING AND DESIGN PHASE

No impacts are anticipated to result from the planning and design phase of the proposed development. No excavation/exploratory work which may affect the environment is anticipated to be required. This is applicable to both route alternatives.

2.2. IMPACTS THAT MAY RESULT FROM THE CONSTRUCTION PHASE

Potential impacts associated with the construction of the proposed power line and associated infrastructure are discussed below. **The following tables are applicable to both route alternatives.**

Nature: Impacts on indigenous natural vegetation		
The most widespread vegetation type in the area is Kathu Bushveld, which is classified as Least Threatened. The vegetation within the servitude that will be used for the power line will need to be cleared and/or disturbed such that the line can be strung as well as for any tracks along the length of the power line. Furthermore the vegetation at the footprint of each tower will be cleared such that a foundation can be established.		
	Without mitigation	With mitigation
Extent	Local (1)	Local (1)
Duration	Permanent (5)	Permanent (5)
Magnitude	Minor (2)	Small (1)
Probability	Definite (5)	Definite (5)
Significance	Moderate (40)	Moderate (35)
Status (positive or negative)	Negative	
Reversibility	Not reversible	
Irreplaceable loss of resources	Yes	
Can impacts be mitigated	Yes	
Mitigation:		
» Avoid unnecessary impacts on natural vegetation surrounding the infrastructure. Impacts should be contained, as far as possible, within the power line and infrastructure servitude. Disturbed areas must be rehabilitated as soon as possible as construction is complete.		
Cumulative impacts:		
» Alien invasions may lead to additional loss of habitat that will exacerbate this impact.		
Residual impacts:		
» Some loss of this vegetation type will occur in the servitude for the power line, but this is insignificant relative to the total extent of the vegetation type.		

Nature: Impacts on protected trees
Camel Thorn trees as well as Shepherd's trees are relatively common in the broader area, as well as in the corridor that was assessed .
The corridor required for the power line will be approximately 35 m therefore although numerous trees may have been identified in the corridor that was assessed (i.e. 300 m) most of these individuals are unlikely to be affected. Where the proposed power line infrastructure impacts on any individuals, a permit would need to be obtained for any protected trees that are affected, so a legal obligation remains to determine the presence of protected trees within the development footprint irrespective of the significance of the impact.

	Without mitigation	With mitigation
Extent	Site (1)	Site (1)
Duration	Permanent (5)	Permanent (5)
Magnitude	Minor (4)	Small (2)
Probability	Probable (3)	Probable (3)
Significance	Moderate (30)	Low (24)
Status (positive or negative)	Negative	
Reversibility	Not reversible	
Irreplaceable loss of resources	Yes	
Can impacts be mitigated	No	
Mitigation:		
» Although not regarded as a mitigation measure, a permit will need to be applied for should any protected tree species need to be removed.		
Cumulative impacts:		
» Impacts due to alien invasions and damage to watercourses may possibly cause damage to habitat where protected trees could grow that may exacerbate this impact.		
Residual impacts:		
» None likely		

Nature: Establishment/spread of declared weeds and alien invader plants		
The site is not known to harbour alien plants in significant numbers. Mesquite is a potential problem in this region and can easily invade disturbed sites, after which it becomes difficult to eradicate and spreads into surrounding vegetation. There is therefore a potential for alien species to spread or become established within the servitude following disturbance on site.		
	Without mitigation	With mitigation
Extent	Site and surroundings (2)	Site and surroundings (2)
Duration	Long-term (4)	Long-term (4)
Magnitude	Minor (4)	Small (2)
Probability	Probable (3)	Improbable (2)
Significance	Moderate (30)	Low (16)
Status (positive or negative)	Negative	
Reversibility	Reversible	
Irreplaceable loss of resources	Yes	
Can impacts be mitigated	To some degree	
Mitigation:		
» Control any alien plants on site immediately to avoid establishment of a soil seed bank that would take decades to remove.		
» Establish an on-going monitoring programme to detect and quantify any aliens that may become established.		
Cumulative impacts:		
» Soil erosion, habitat loss, damage to wetlands and increased frequency of veld fires may all lead to additional impacts that will exacerbate this impact.		

Residual impacts:		
» Will probably be very low if control measures are effectively applied.		
Nature: Dust creation and noise		
During the construction phase impacts related to dust creation and noise are expected. However, the creation of noise and dust from the construction of a power line and infrastructure is unlikely to cause a significant impact.		
	Without mitigation	With mitigation
Extent	Local (1)	Local (1)
Duration	Very short (2)	Very short (2)
Magnitude	Minor (2)	Minor (2)
Probability	Probable (3)	Improbable (2)
Significance	Low (15)	Low (10)
Status (positive or negative)	Negative	
Reversibility	Yes	
Irreplaceable loss of resources	No	
Can impacts be mitigated	Yes	
Mitigation:		
» Construction activities must be confined to a clearly demarcated area and may not deviate from this footprint.		
» Vehicles transporting the power line components and construction materials may only use the existing access roads/tracks as well as the area authorised for the servitude.		
» Any waste/spoil material should be removed and taken off-site to a licensed waste disposal facility.		
» The relevant personal protective equipment should be used at all times.		
Cumulative impacts:		
» There may be a cumulative impact resulting from the construction activities for the power line and the authorised Sishen Solar Energy Facility (i.e. if the construction phases overlap). However these are not expected to be significant.		
» The cumulative impact will be more significant if other proposed solar energy facilities are constructed at the same time.		
Residual impacts:		
» No residual impacts are expected.		

Nature: Soil degradation through soil loss		
Direct impact of soil and/or rock removal for tower foundations affecting soil forming processes and/or local geology		
	Without mitigation	With mitigation
Extent	Local (1)	Local (1)
Duration	Very short (2)	Very short (2)
Magnitude	Low (4)	Minor (2)
Probability	Probable (3)	Improbable (2)
Significance	Low (21)	Low (10)
Status (positive or negative)	Negative	
Reversibility	Partially reversible	
Irreplaceable loss of resources	Yes	

Can impacts be mitigated	Yes
Mitigation:	
<ul style="list-style-type: none"> » Topsoil can be replaced over foundations, if practical. » Keep to existing roads/tracks, where practical, to minimise impact on undisturbed ground. 	
Cumulative impacts:	
<ul style="list-style-type: none"> » The cumulative impact of soil removal over the greater area including the Sishen Mine area is considered high, but the proposed activity has an insignificant relative contribution. 	
Residual impacts:	
<ul style="list-style-type: none"> » Minor residual impacts are expected due to the slow regeneration of topsoil. 	

Nature: Soil degradation through pollution		
Direct impact of soil degradation by pollution, salinisation, acidification, or water-logging of natural soil in construction areas affecting soil formation processes.		
	Without mitigation	With mitigation
Extent	Local (1)	Local (1)
Duration	Medium term (3)	Short term (2)
Magnitude	Low (4)	Low (4)
Probability	Probable (3)	Improbable (2)
Significance	Low (21)	Low (14)
Status (positive or negative)	Negative	
Reversibility	Irreversible	Reversible
Irreplaceable loss of resources	Yes	Yes, minor
Can impacts be mitigated	Yes	
Mitigation:		
<ul style="list-style-type: none"> » Minimise size of construction area. » Keep to existing roads, where practical, to minimise impacts on undisturbed ground. » Control the use of hazardous materials (fuel, explosives). » Remove/clean spillages of deleterious material such as fuel or concrete. » Rehabilitate soil and vegetation in construction areas. 		
Cumulative impacts:		
<ul style="list-style-type: none"> » The cumulative impact of soil pollution over the greater area including the Sishen Mine area is considered high, but the proposed activity has an insignificant relative contribution. 		
Residual impacts:		
<ul style="list-style-type: none"> » Minor negative residual impacts due to the slow regeneration of vegetation and soil. 		

Nature of impact: Job creation
From a social perspective, there will be some positive impacts resulting from job opportunities and skills development for low – and semi-skilled jobs.

	<i>Without enhancement</i>	<i>With enhancement</i>
<i>Extent</i>	Local (1)	Local (1)
<i>Duration</i>	Very short (2)	Long term (4)
<i>Magnitude</i>	Low (4)	Low (4)
<i>Probability</i>	Probable (3)	Probable (3)
<i>Significance</i>	Low (21)	Low (27)
<i>Status (positive or negative)</i>		
	Positive	
<i>Reversibility</i>		
	N/A	
<i>Irreplaceable loss of resources?</i>		
	N/A	
<i>Can impacts be enhanced?</i>		
	Yes	
<i>Enhancement measures:</i>		
» The use of local labour for low – and semi-skilled jobs should be maximised as far as possible.		
<i>Cumulative impacts:</i>		
» No positive cumulative impacts are expected in terms of job creation.		
<i>Residual impacts:</i>		
» Although the job creation would be temporary (i.e. the duration of the construction phase), residual impacts may occur as a result of the associated skills development associated with the construction phase.		

2.3. IMPACTS THAT MAY RESULT FROM THE OPERATIONAL PHASE

<i>Nature of impact: Visual impact</i>		
The proposed power line (i.e. as a double circuit line it will be approximately 45 m high) will be seen by private landowners (i.e. the following homesteads may be affected, Limebank, Klein Landbank, Wincanton,) on either side of the servitude and potential from the R380. The visual impact on receptors can be considered to be compounded by the several proposed projects in the area (i.e. including the Kathu and San Solar Energy, as well the Ferrum MTS - Umtu Klipkop 132 kV power line that is still to be constructed, as well as the existing Mamatwane-Wincanton 132 kV distribution line that crosses the site (i.e. Wincanton 472, portion 4))		
	<i>Without mitigation</i>	<i>With mitigation</i>
<i>Extent</i>	Local (4)	N/A
<i>Duration</i>	Long term (4)	N/A
<i>Magnitude</i>	Low (4)	N/A
<i>Probability</i>	Probable (3)	N/A
<i>Significance</i>	Moderate (36)	N/A
<i>Status (positive or negative)</i>		
	Negative	
<i>Reversibility</i>		
	N/A	
<i>Irreplaceable loss of resources?</i>		
	No	
<i>Can impacts be mitigated?</i>		
	No	
<i>Mitigation measures:</i>		
» The appearance and size of the power line is not possible to mitigate. The functional design of the structures cannot be changed in order to reduce visual impacts.		

Cumulative impacts:

- » The construction of the proposed power line, together with the authorised Kathu and Sishen Solar Energy facilities, as well the Ferrum MTS - Umtu Klipkop 132 kV power line) will lead to a cumulative visual impact on residents of the area.

Residual impacts:

- » No residual impacts are expected.

No Go Alternative

Also referred to as the 'Do-nothing' option, this refers to Windfall 59 Properties (Pty) Ltd not constructing the proposed power line. In this scenario the potential positive and negative environmental / social impacts as described in this Basic Assessment Report for the impacted and/or affected properties will not occur and the status quo will be maintained.

However, there will remain a capacity problem with respect to connecting the proposed Kathu and San solar energy facilities to the grid. As a result the potential local and regional socio-economic and environmental benefits expected to be associated with the proposed facilities would not be realised.

2.4. IMPACTS THAT MAY RESULT FROM THE DECOMMISSIONING PHASE

Alternative (preferred alternative)

During decommissioning and closure phases the types of impacts that are expected are similar to those during the construction phase.

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.

Windfall 59 Properties (Pty) Ltd is proposing the construction of the authorised Sishen Solar Energy Facility as part of the Independent Power Producers Procurement Programme through the Department of Energy.

The infrastructure is required to be established in order to connect the proposed solar energy facility to the new Ferrum MTS - Umtu Klipkop 132 kV power line which lies to the east.

Figure 1 provides details of the locations of the solar facilities and the corridor which forms the subject of this Basic Assessment. The proposed Kathu Solar Energy Facility (as indicated by the western-most block) has received an environmental authorisation as well as preferred bidder status. The Sishen Solar Energy Facility (as indicated by the middle

block) has also received an environmental authorisation. The EIA Process for the San Solar Facility (as indicated by the eastern-most block) will commence in 2012.

The power line is proposed to connect the authorised Sishen Solar Energy Facility via a loop in-loop out connection (i.e. also likely to be a double circuit) with the authorised Ferrum MTS - Umtu Klipkop 132 kV power line. A 300 m wide corridor has been assessed as part of the Basic Assessment Process and includes portions of the following farm portions (indicated in Figure 2 by the orange broken line below⁷):

- » Wincanton 472, portions 6,
- » Limebank 471, portions 1, 2, and 3
- » Halliford 466, portions 1, and 3
- » Marsh 467, remaining extent

Assessment of the Alternative Layouts

The corridor has been divided into two route alternatives; north of the boundary fence and south of the boundary fence (refer to Figure 2). The northern route covers Wincanton 472, portions 4, 6, and the remaining extent, while the southern route covers Limebank 471, portions 1, 2, and 3, remaining extent.

Both the northern and southern routes are environmental acceptable; no fatal flaws have been identified with either, and both routes are technically feasible for the construction of the power line. However, the northern route is preferred for the following reasons.

- » With three energy facilities being proposed on Wincanton 472, portions 4, 6, and the remaining extent (Kathu, Sishen and San Solar Facilities respectively), the northern route is preferred as it allows for the consolidation of impacts associated with power generation and transmission infrastructure.
- » From a technical perspective the northern route is preferred as agreements have already been signed for the proposed solar energy facility (i.e. Wincanton 472, portions 4, 6, and the remaining extent). As such new agreements will not be required for the power line servitude.

⁷ The authorised Ferrum MTS - Umtu Klipkop 132 kV power line will run in a southerly direction east of the proposed San Solar Facility.



Figure 2: The orange broken line on the map represents the 300 m wide corridor that was assessed, while the pink shaded in rectangle represents the northern route and the green represents the southern route.

No-go alternative (compulsory)

Also referred to as the 'Do-nothing' option, this refers to Windfall 59 Properties (Pty) Ltd not constructing the proposed power line. In this scenario the potential positive and negative environmental / social impacts as described in this Basic Assessment Report will not occur and the status quo will be maintained. However, should the project not proceed; there will remain a capacity problem with respect to connecting the proposed Kathu and San solar energy facilities to the grid. Furthermore all three of the proposed solar facilities (Kathu, Sishen and Kathu) will be able to evacuate power to the Eskom grid. As a result the potential local and regional socio-economic and environmental benefits expected to be associated with the proposed facilities would not be realised. These include:

- » *Increased energy security:* The current electricity crisis in South Africa highlights the significant role that renewable energy can play in terms of power supplementation. In addition, given that renewables can often be deployed in a decentralised manner close to consumers, they offer the opportunity for improving grid strength and supply quality, while reducing expensive transmission and distribution losses.
- » *Exploitation of our significant renewable energy resource:* At present, valuable national resources including biomass by-products, solar radiation and wind power remain largely unexploited. The use of these energy flows will strengthen energy security through the development of a diverse energy portfolio.

- » *Pollution reduction:* The releases of by-products through the burning of fossil fuels for electricity generation have a particularly hazardous impact on human health and contribute to ecosystem degradation.
- » *Support for international agreements:* The effective deployment of renewable energy provides a tangible means for South Africa to demonstrate its commitment to its international agreements under the Kyoto Protocol, and for cementing its status as a leading player within the international community.
- » *Employment creation:* The development, installation, maintenance, and management of renewable energy facilities have significant potential for job creation in South Africa.
- » *Acceptability to society:* Renewable energy offers a number of tangible benefits to society including reduced pollution concerns, improved human, and ecosystem health.
- » *Support to a new industry sector:* The development of renewable energy offers the opportunity to establish a new industry within the South African economy.

Within a policy framework, the development of renewable energy in South Africa is supported by the White Paper on Renewable Energy (November 2003), which has set a target of 17 GW renewable energy contributions to final energy consumption by 2030 within the Integrated Resource Plan (IRP) for the country. The target is to be achieved primarily through the development of solar, biomass, solar and small-scale hydro.

The 'Do-nothing' alternative will not assist the South African government in addressing climate change, in reaching the set targets for renewable energy, nor will it assist in supplying the increasing electricity demand within the country. The 'Do-nothing' alternative is, therefore, not a preferred alternative.

SECTION E. RECOMMENDATION OF THE 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)?



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:

It is the conclusion of the Environmental Assessment Practitioner that the establishment of the power line and associated infrastructure (Switching station) is considered acceptable from an environmental perspective. No environmental fatal flaws have been identified to be associated with either route alternative. Based on the nature and extent of the proposed project, the potential impacts associated with the proposed loop-in/loop-out double circuit can be mitigated to an acceptable level. This would involve the implementation of the following conditions which must be included within the Environmental Authorisation when issued:

- » Following the final design of the facility, a final route (i.e. within the northern section of the corridor) must be submitted to DEA for review and approval prior to commencing with construction.
- » Existing track/roads should be used as far as possible, and construction activities should be limited to the authorised servitude.
- » An independent Environmental Control Officer (ECO) should be appointed to monitor compliance with the specifications of the EMP for the duration of the construction period.
- » The EMP should form part of the contract with the EPC Contractor appointed to construct the proposed power line, and must be used to ensure compliance with environmental specifications and management measures. The implementation of this EMP for all life cycle phases of the proposed project is considered key in achieving the appropriate environmental management standards as detailed in this report.
- » All relevant practical and reasonable mitigation measures detailed within this report must be implemented.

Is an EMPR attached?



The EMPR must be attached as **Appendix F**.