ENVIRONMENTAL IMPACT ASSESSMENT PROCESS
FINAL BASIC ASSESSMENT REPORT

PROPOSED SON SITRUS ROOFTOP SOLAR ENERGY INSTALLATION NEAR KIRKWOOD, EASTERN CAPE PROVINCE

DEA REFERENCE NUMBER: 14/12/16/3/3/1/1229

FINAL BASIC ASSESSMENT REPORT FOR SUBMISSION TO THE DEA
AUGUST 2014

Prepared for:

Building Energy SpA
Cape Quarter Piazza, Unit B103a
72 Waterkant Street
Cape Town
8001

Prepared by:

Savannah Environmental Pty Ltd

1ST FLOOR, BLOCK 2,
5 WOODLANDS DRIVE OFFICE PARK
CNR WOODLANDS DRIVE &
WESTERN SERVICE ROAD,
WOODMEAD, GAUTENG
P.O. BOX 148, SUNNINGHILL, 2157
TELEPHONE : +27 (0)11 656 3237
FACSIMILE : +27 (0)86 684 0547
EMAIL : INFO@SAVANNAHSA.COM
WWW.SAVANNAHSA.COM

environmental affairs
Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

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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. This report format is current as of **1 September 2012**. It is the responsibility of the applicant to ascertain whether subsequent versions of the form have been published or produced by the competent authority
3. 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.
4. Where applicable **tick** the boxes that are applicable in the report.
5. An incomplete report may be returned to the applicant for revision.
6. 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.
7. This report must be handed in at offices of the relevant competent authority as determined by each authority.
8. No faxed or e-mailed reports will be accepted.
9. The signature of the EAP on the report must be an original signature.
10. The report must be compiled by an independent environmental assessment practitioner.
11. 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.
12. A competent authority may require that for specified types of activities in defined situations only parts of this report need to be completed.
13. Should a specialist report or report on a specialised process be submitted at any stage for any part of this application, the terms of reference for such report must also be submitted.
14. Two (2) colour hard copies and one (1) electronic copy of the report must be submitted to the competent authority.
15. Shape files (.shp) for maps must be included on the electronic copy of the report submitted to the competent authority.

PROJECT DETAILS

Title	:	Environmental Basic Assessment Process Final Basic Assessment Report: Proposed Son Sitrus Rooftop Solar Energy Installation near Kirkwood, Eastern Cape Province
Authors	:	Savannah Environmental (Pty) Ltd Tebogo Mapinga Karen Jodas
Applicant	:	Building Energy SpA
Report Status	:	Final Basic Assessment Report for submission to the DEA
Submission to the date	:	13 August 2014

When used as a reference this report should be cited as: Savannah Environmental (2014) Final Basic Assessment Report: Proposed Son Sitrus Rooftop Solar Energy Installation near Kirkwood, Eastern Cape Province

TABLE OF CONTENTS

PAGE

APPENDICES

Appendix A: Site Plan(s)
Appendix B: Photographic Record
Appendix C: Facility Illustration(s)
Appendix D: Specialist Report(s)
Appendix E: Record of Public Involvement Process
» *Appendix E1: Site Notices, Adverts, BIDs and Reply Forms*
» *Appendix E2: Key stakeholders correspondence*
» *Appendix E3: Comment and Responses Report*
» *Appendix E4: Authority & Organs of State correspondence*
» *Appendix E5: Stakeholder Database*
» *Appendix E6: Minutes of the Focus Group Meetings*
Appendix F: Impact Assessment
Appendix G: Environmental Management Programme (EMPr)
Appendix H: Details of EAP and expertise (CV's)
Appendix I: Specialist's declaration of interest
Appendix J Other additional information

SUMMARY AND OVERVIEW OF THE PROPOSED PROJECT

Building Energy SpA, an Independent Power Producer (IPP), is proposing the establishment of a 1.2MW photovoltaic (PV) Rooftop Solar Energy Installation on an existing Son Sitrus fruit packaging building which is located on a site adjacent to the R336 to Kirkwood, in the Eastern Cape Province. The project is referred to as the Son Sitrus Rooftop Solar Energy Installation.

The site is located ~100m before the town of Kirkwood, ~3km west of Bontrug and ~28km north-west of Addo. The proposed site is privately owned and is located in the fertile Sundays River Valley, a key citrus fruit farming area in the Eastern Cape Province. The Son Sitrus building is utilised for the sorting, packaging and storage of citrus fruits (mainly oranges). The Son Sitrus building is located on Portion 31 of the farm Gouvernements Belooning 521. The Sundays River Valley adjoins the Greater Addo Elephant National Park and is located ~80km from Port Elizabeth. The Greater Addo Elephant National Park is located to the north and east of the broader study area. The site is located in an altered/ urban area within the Sundays River Valley Local Municipality and the Cacadu District Municipality.

The purpose of the project is to generate electricity for export into the national electricity grid. The project forms part of the Department of Energy's (DoE) Small Projects Renewable Energy Independent Power Producer Procurement (REIPPP) Programme and has received First Stage One approval in this bidding programme. The REIPPP Programme has been designed to contribute towards the South African government's renewable energy target of 17.8GW by 2030 and to stimulate the renewable energy industry in South Africa. The Small Projects programme has been introduced to provide opportunities for local companies to become involved in this larger programme.

The Son Sitrus rooftop solar energy installation will have a development footprint of ~1.2 hectares, within which the following typical infrastructure will be established:

- Arrays of photovoltaic (PV) panels with a capacity of up to 1.2MW.
- Aluminium bar mountings to support the PV panels.
- Cabling between the project components.
- Inverter/Transformer enclosure.
- 33kV Underground cables of ~100m in length and in capacity to connect into an existing mini-substation located in the eastern corner of the property.

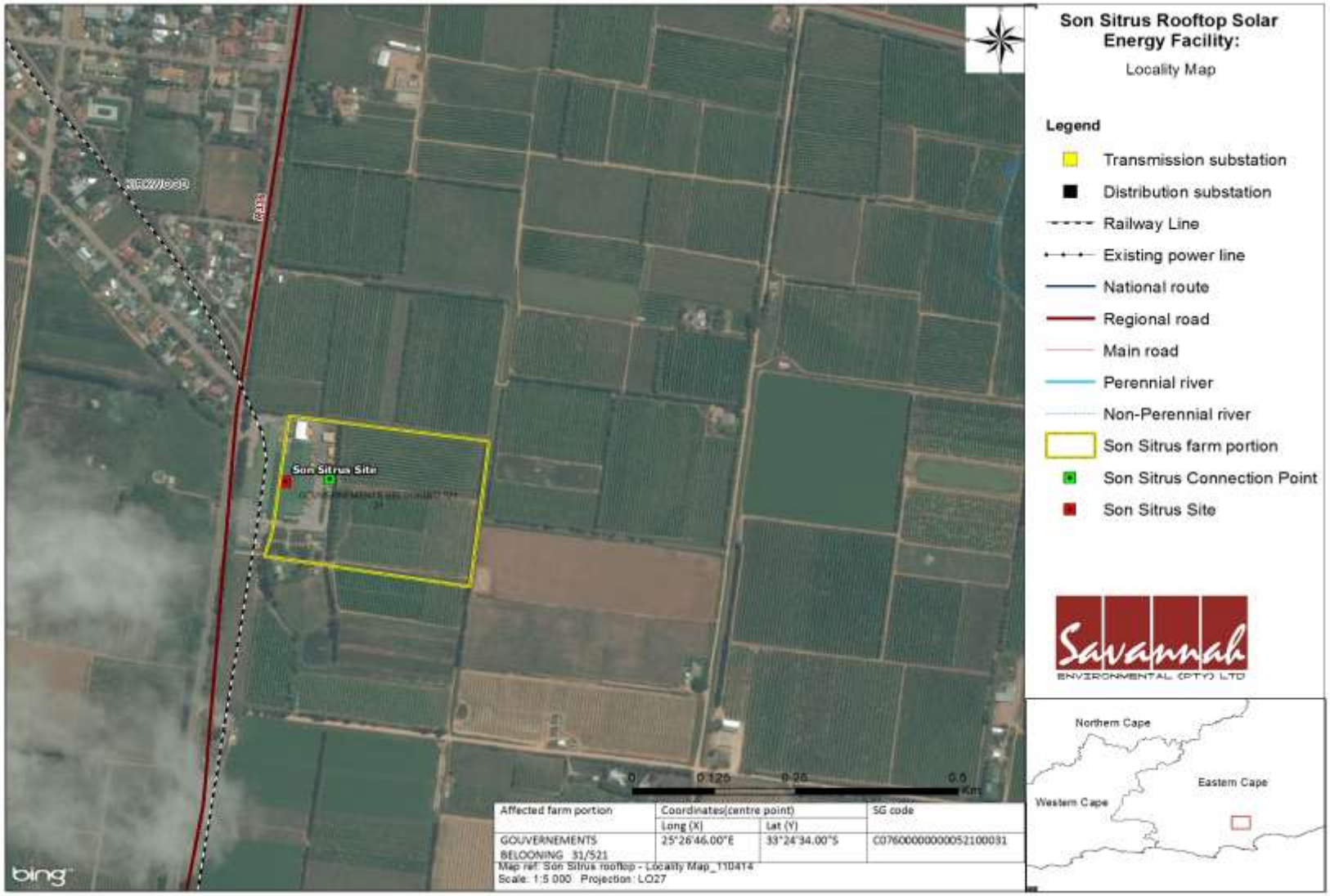

Figure 1: Locality map showing the site for the proposed Son Sitrus Solar Energy Installation

1.1 Need for the Proposed Development

Globally there is increasing pressure on countries to increase their share of renewable energy generation due to concerns such as exploitation of non-renewable resources and the rising cost of fossil fuels. In order to meet the long-term goal of a sustainable renewable energy industry and to diversify the energy-generation mix in South Africa, a goal of 17.8GW of renewables by 2030 has been set by the Department of Energy (DoE) within the Integrated Resource Plan (IRP) 2010. This energy will be produced mainly from wind, solar, biomass, and small-scale hydro (with wind and solar comprising the bulk of the power generation capacity). This amounts to ~42% of all new power generation being derived from renewable energy forms by 2030. In responding to the growing electricity demand within South Africa, as well as the country's targets for renewable energy, the developer proposes the establishment of the Son Sitrus Roof Top Solar Energy Facility to add new capacity to the national electricity grid.

The development of the proposed Son Sitrus Rooftop Solar Energy Facility would benefit the local/regional/national community by developing a renewable energy project. Surrounding communities would also benefit from the development through job creation, albeit limited. In addition, according to the DoE's bidding requirements, the developer must plan for a percentage of the profit per annum from the solar energy facility to feed back into the community through a social beneficiation scheme. Therefore there is a potential for creation of employment and business opportunities, and the opportunity for skills development for the local community.

1.2 Requirement for a Basic Assessment Process

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), Building Energy SpA requires authorisation for the construction and operation of the proposed rooftop solar energy installation. 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 triggered by the proposed project.

The nature and extent of the proposed project 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.

1.3 Details of Environmental Assessment Practitioner and Expertise to conduct the Basic Assessment

Building Energy SpA has appointed Savannah Environmental as the independent environmental consultant to undertake the required Basic Assessment process and to identify and assess all the potential environmental impacts associated with the proposed project and propose appropriate mitigation and management measures in an Environmental Management Programme (EMPr). Savannah Environmental is not a subsidiary of or affiliated to Building 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 assessment and planning to ensure compliance with relevant environmental legislation. Savannah Environmental benefits from the pooled resources, diverse skills and experience in the environmental field held by its team that has been actively involved in undertaking environmental studies for a wide variety of projects throughout South Africa and neighbouring countries. Strong competencies have been developed in project management of environmental processes, as well as strategic environmental assessment and compliance advice, and the assessment of environmental impacts, the identification of environmental management solutions and mitigation/risk minimising measures.

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, specifically from renewable sources.

The EAPs from Savannah Environmental who are responsible for this project are:

» Tebogo Mapinga, the principal author of this report, is a Senior Environmental Consultant. She holds a BSc degree with 7 years of experience in the environmental field in both public and private sectors. Her competencies lie in environmental impact assessments, compliance monitoring and public participation for small and large scale projects. She is currently in the process of completing her honours degree in Environmental Management.

» Karen Jodas is a registered Professional Natural Scientist and holds a Master of Science degree. She has 17 years of 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.

Savannah Environmental has gained extensive knowledge and experience on potential environmental impacts associated with electricity generation projects through their involvement in related EIA processes.

Curricula vitae for the Savannah Environmental and specialist project team are included in **Appendix H**.

FINAL BASIC ASSESSMENT REPORT FOR REVIEW

This Final Basic Assessment Report has been prepared by Savannah Environmental in order to assess the potential environmental impacts associated with the Son Sitrus Rooftop Solar Energy Installation. The draft BAR was made available for public review at the following places:

- Kirkwood Public Library, 30 Middle Street, Kirkwood (042-230-0310 Ext. 210)
- www.savannahSA.com/projects

The 30-day review period commenced on **11 July 2014 until 11 August 2014**.

Comments were received through written submission via post and e-mail. I&APs were also informed in writing that this Final BAR has been prepared and submitted to DEA and is available for comment and for download from the website: www.savannahSA.com. Copies of the Final BAR could be requested, if desired or required by I&APs from the consultant.

Registered parties have been notified (notification letters were distributed on the 13 August 2014) of the availability of the Final BAR prior to submission to the DEA, as required in terms of Regulation 56(2) of the EIA Regulations. As required in terms of Regulation 56(6), registered Parties have been advised to submit comments to the DEA with a copy to Savannah Environmental. Relevant contact details are as follows:

National DEA: **Muhammad Essop** **Tel:** 012 399 9406 **Email:** MEssop@environment.gov.za **Post:** Private Bag X 447 ,Pretoria,0001	**Savannah Environmental(EAP):** **Gabriele Wood** **Tel:** 011 656 3237 **Fax:** 086 699 5796 **Email:** gabriele@savannahsa.com **Post:** P O Box 148 Sunninghill 2157

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 the specialist appointed and attach in Appendix I.

1. PROJECT DESCRIPTION

a) Describe the project associated with the listed activities applied for

Building Energy SpA is proposing the establishment of a 1.2MW photovoltaic (PV) Rooftop Solar Energy Installation on an existing Son Sitrus fruit packaging building located on Portion 31 of the farm Gouvernements Belooning 521 adjacent to the R336 to Kirkwood, in the Eastern Cape Province. The project is referred to as the Son Sitrus Rooftop Solar Energy Installation.

The Son Sitrus Rooftop Solar Energy Installation will have a development footprint of ~1.2 hectares, within which the following typical infrastructure will be established:

» Arrays of photovoltaic (PV) panels with a capacity of up to 1.2MW;
» Aluminium bar mountings to support the PV panels;
» Cabling between the project components;
» 1 Inverter/Transformer enclosure; and
» 33kV Underground cables of ~100m in length to connect into an existing mini-substation located in the eastern corner of the property.

A layout plan showing the arrangement of the rooftop solar panels is included in **Appendix A**. A description of the typical installation of rooftop solar panels is provided below.

Location

The GPS coordinates of the centre of the building are as follows: 33°24'34"S, 25°26'46"E. The site is located ~100m south of Kirkwood, ~3km west of Bontrug and ~28km north-west of Addo. The proposed site is privately owned and is located in the fertile Sundays River Valley, which is a key citrus fruit farming area in the Eastern Cape Province. The Son Sitrus building is utilised for the sorting, packaging and storage of citrus fruits (mainly oranges). The Sundays River Valley adjoins the Greater Addo Elephant National Park and is located ~80 km from Port Elizabeth. The Greater Addo Elephant National Park occurs to the north and east of the broader study area. The site is located within the Sundays River Valley Local Municipality which falls within the jurisdiction of the Cacadu District Municipality.

Technology Description

The use of solar power for electricity generation is deemed a non-consumptive use of natural resources which produces zero greenhouse gas emissions. Solar generated electricity is set to play a significant role in reaching the South African Government's renewable energy target of 17.8GW of renewable energy by 2030.

PV technology uses the energy from the sun to generate electricity through a process known as the "photovoltaic effect". Simply speaking, this refers to photons of light knocking electrons into a higher state of energy to create electricity. PV facilities are typically comprised of the following:

» ***PV cells*** are made of silicone which act as semiconductors used to produce electricity through the photovoltaic effect. Individual PV cells are linked and placed behind a protective glass sheet to form a PV panel; several rows of which are established in order to generate the required amount of electricity.
» ***Inverters*** are required to convert the electricity from direct to alternating current which can be evacuated into the National electricity grid.
» ***Support structures*** are required to mount the PV panels so as to receive the maximum amount of solar radiation without the buffeting effects of the wind. The angle of the panel is dependent on the latitude of the proposed facility and may be adjusted to optimise for summer or winter solar radiation characteristics. In the case of a roof mounted structure the panels may be mounted parallel to the roof and not at the maximum effect angle.

It is proposed that the project utilises photovoltaic cells that will be mounted parallel to the roof in order to maintain the shape of the building. The panels will be ~20cm in height.

The modules are fixed to the rooftop with a simple aluminium clamp or bolts. Clamps or bolts guarantee high resistance to all forces that are found in a photovoltaic plant (accidental loads, snow loads, wind loads, etc.). The distance between module frame and roof cover can be considered as irrelevant, in this type of installation. Maximum load to be considered is 20Kg/m².

Polycrystalline or monocrystalline silicon modules may be utilized for the solar panels. The proposed development is expected to be 1.2MW in capacity.

Photovoltaic Modules Mechanical Installation on Pitched Roofs

To install modules on corrugated metal top cover on a pitched roof, a typical bearing structure for photovoltaic plant can be made by short (or long) aluminum bars, fixed by 4 rivets on the roof. Girdle waterproofing is installed between the corrugated roofs and the bars (EPDM strips). For example, a 1MW plant needs ~8 200 short aluminum

bars.

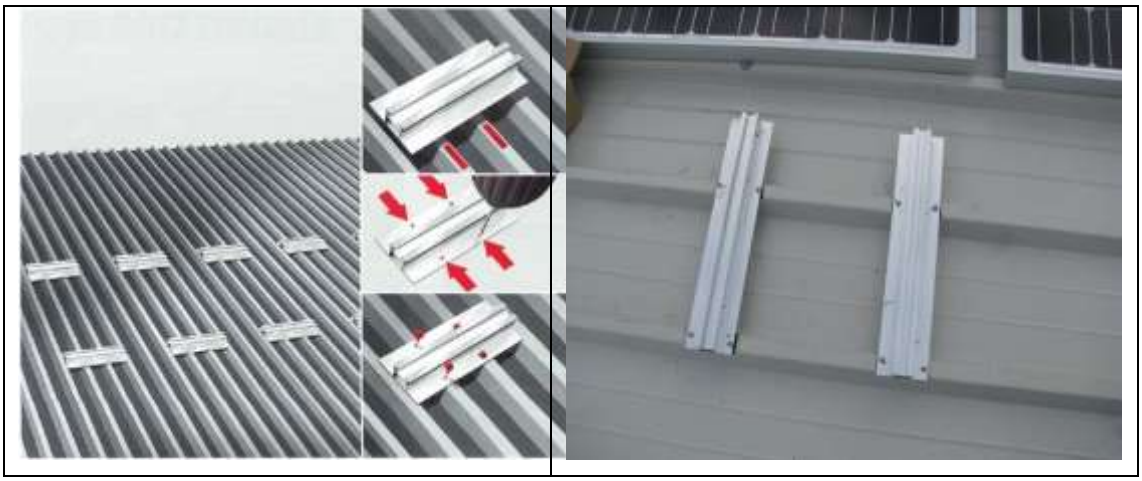

Figure 2: Aluminium bars utilised to mount the PV Panels

Modules are fixed to the aluminum bars with a simple aluminum clamp, avoiding drilling new holes to the system (refer to Figure 2). Clamps guarantee high resistance to every force that can be found in a photovoltaic plant (i.e. accidental loads, snow loads, wind loads, etc.).

Inverter Cabin Location and Installation

Inverter cabins will be installed as close as possible to the PV modules. The number of cabins depends on the power pick installation and the electrical configuration. For example, a 1MW installation on one single roof typically requires only one inverter cabin. A typical inverter cabin dimension is 8m X 3m X 3m.

Electrical Connection between Combiner Boxes and Inverter

From combiner boxes, DC cables run through a special cable tray, fixed on a wall, to the inverter cabin (refer to Figure 4).

Figure 3: DC cables to be utilised along the wall of the buildings

Project Life Cycle (Construction, Operation and Decommissioning Phase)

The typical life cycle of a solar energy facility includes construction, and operation and maintenance activities, and possibly decommissioning of the plant (if required). These phases of the project are described below.

» ***Construction Phase:*** In order to construct the proposed project, a series of activities will need to be undertaken. The construction process for the solar energy facility will typically include the following:

i. Undertake Site/ Roof Top Preparation.
ii. Transport of Components and Equipment to Site: The components and equipment required for the construction of the proposed roof top facility will be brought to site in sections by means of national, provincial and local roads.
iii. Erect PV Cells and Invertors: The PV cells will be arranged in arrays. The frames may be fixed onto the roof tops with the use of aluminium bars. Three inverters will be installed to facilitate the connection between the solar energy facility and the Eskom electricity grid via underground cables between the building and an Eskom mini Substation (which is located on the site).
iv. Establishment of Ancillary Infrastructure: Ancillary infrastructure may include a workshop and storage areas.

» ***Operation Phase***: The electricity that is generated from the PV panels will be converted by the on-site inverters and transformers and will feed-into existing Eskom network via an existing mini substation. Each component within the solar energy facility will be operational except under circumstances of mechanical breakdown, unfavourable weather conditions or maintenance activities. Water may be required to wash the PV panels. The required water is planned to be sourced from the municipal supply.

» ***Decommissioning Phase***: The operation phase of the project is expected to have a lifespan of more than 20 years (with maintenance) and the PV facility infrastructure would only be decommissioned once it has reached the end of its economic life. If economically feasible/desirable after 20 years, the individual components would be disassembled and replaced with more appropriate technology/ infrastructure available at that time. However, if not deemed so, then the roof top solar panels would be completely decommissioned and all components removed from the site.

b) Provide a detailed description of the listed activities associated with the project as applied for

The following listed activities are relevant to the proposed development:

Listed activity as described in GN R.544, 545 and 546	**Description of project activity**
GN R.544 Item 1: The construction of facilities or infrastructure for the generation of electricity where: (ii) The output is 10 megawatts or less but the total extent of the facility covers an area in excess of 1 hectare.	The proposed PV will have an electricity export capacity of 1.2MW and will occupy an area greater than 1 hectare in extent.

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 as required by Regulation 22(2)(h) of GN R.543. Alternatives should include a consideration of all possible means by which the purpose and need of the proposed activity (NOT PROJECT) 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.

The identification of alternatives should be in line with the Integrated Environmental Assessment Guideline Series 11, published by the DEA in 2004. Should the alternatives include different locations and lay-outs, the co-ordinates of the different alternatives must be provided. The co-ordinates should be in degrees, minutes and seconds. The projection that must be used in all cases is the WGS84 spheroid in a national or local projection.

a) Site alternatives

A site alternative refers to the identification of more than one potential site which may be suitable for the establishment of a proposed project. Due to the nature of the development, the location of the project is largely dependent on technical factors such as solar irradiation (i.e. fuel source), climatic conditions, availability of space for rooftop solar panel installations and available grid connection. The assessment of technology alternatives is limited as the site is only suitable for a rooftop PV installation and not for other renewable technologies such as wind, biomass, or Concentrated Solar Power (CSP) installations due to the location of the site on the roof of a building. The proposed site was identified by the developer as being technically feasible on the basis of these

considerations. Only one site (rooftop) was considered in this Basic Assessment and no site alternatives have been considered.

The following characteristics were considered in determining the feasibility of the proposed site:

» ***Solar Resource:*** The site has been identified as an area of suitable irradiation, which indicates that the location of the project is appropriate for a solar energy facility.
» ***Grid Connection:*** The project can connect into the grid via an existing mini-substation on the property, which has capacity to receive the electricity generated by the solar panels.
» ***Site Extent****: S*pace is an important factor for the development of a PV facility. A roof top area of approximately 1.2 ha would be required for the 1.2MW rooftop solar project. The space available on the roof top of the Son Sitrus building is larger than 1.2 hectares and will therefore be sufficient for the installation of the proposed facility, and should allow for the avoidance of any identified technical constraints in terms of the final design of the facility.
» ***Land availability and Site access****:* The proposed rooftop would be available to the developer for the installation of the proposed project. The site will be accessed off the R336 to Kirkwood.
» ***Environmental sensitivity***: Rooftop solar panels are located on top of buildings and no significant environmental impacts are expected to occur during the construction and operation of the project.

Site Alternative 1 (preferred alternative)		
Description	Lat (DDMMSS)	Long (DDMMSS)
The 1.2MW Son Sitrus Solar Energy Installation is expected to have a developmental footprint of ~1.2 ha. The space available on the roof top of the warehouse building is larger than 1.2ha and will therefore be sufficient for the installation of the proposed facility and associated infrastructure. According to the Sundays Valley River Local Municipality the proposed Son Sitrus Packaging Facility is zoned as a Business-zone 4. The site is regarded as "brownfields", which means that it has been previously developed either for industrial or commercial purposes and is of low environmental sensitivity. Therefore the Son Sitrus site is considered suitable for the development of the proposed rooftop PV installation.	33°24'34"S	25°26'46"E
Alternative 2		
Description	Lat (DDMMSS)	Long (DDMMSS)

Alternative 3		
Description	Lat (DDMMSS)	Long (DDMMSS)

In the case of linear activities:

Alternative:	**Latitude (S):**	**Longitude (E):**
Alternative S1 (preferred)		
• Starting point of the activity		
• Middle/Additional point of the activity		
• End point of the activity		
Alternative S2 (if any)		
• Starting point of the activity		
• Middle/Additional point of the activity		
• End point of the activity		
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 250 meters along the route for each alternative alignment.

In the case of an area being under application, please provide the co-ordinates of the corners of the site as indicated on the lay-out map provided in Appendix A.

b) Lay-out alternatives

The PV panels will be located on the roof of the Son Sitrus fruit packing building therefore no layout-out alternatives were assessed.

Alternative 1 (preferred alternative)		
Description	Lat (DDMMSS)	Long (DDMMSS)

Alternative 2		
Description	Lat (DDMMSS)	Long (DDMMSS)
Alternative 3		
Description	Lat (DDMMSS)	Long (DDMMSS)

c) Technology alternatives

Alternative 1 (preferred alternative)
As it is the intention of Building Energy to develop the proposed Son Sitrus Rooftop Solar Energy Installation project as part of the DoE's Small Scale REIPPP Programme, only renewable energy technologies are being considered. Solar energy is considered to be the most suitable renewable energy technology for this site, based on the site location, ambient conditions and energy resource availability (i.e. solar irradiation). The use of photovoltaic panels was determined as the most suitable option for the proposed rooftop site due to the low height of the panels. Very few technological options exist as far as PV technologies are concerned; those that are available are usually differentiated by weather and temperature conditions that prevail – so that optimality is obtained by the final choice. The construction, operation and decommissioning activities associated with the facility will also be the same irrespective of the technology chosen. There are a number of different solar PV technologies, i.e.: » Static panels (Preferred); and » Concentrated PV Plants (CPV technology). It is proposed that the project utilises photovoltaic cells that will be mounted parallel to the roof to avoid changing the shape of the building. The panels will be ~20cm in height. Polycrystalline or monocrystalline silicon modules may be utilised for the solar panels.
Alternative 2
Alternative 3

d) Other alternatives (e.g. scheduling, demand, input, scale and design alternatives)

Alternative 1 (preferred alternative)
Operating Alternatives This refers to the manner in which a proposed facility would function. No operating alternatives would be applicable to the proposed solar energy facility as there are no feasible means of alternative operation for a facility of this nature.
Alternative 2
Alternative 3

e) No-go alternative

This is the option of not constructing the Son Sitrus Rooftop Solar Energy Installation. This option is assessed as the "no go alternative" in this Basic Assessment Report (Section D), against which the project impacts are assessed. If the project does not proceed, there will still be a need for alternative energy projects to supplement the current power requirements of the country. The site will remain unchanged and there will be no opportunities for temporary and permanent employment created through this project.

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

3. PHYSICAL SIZE OF THE ACTIVITY

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

Alternative:	Size of the activity:
Alternative A1[1] (preferred activity alternative)	12000 m^2
Alternative A2 (if any)	m^2
Alternative A3 (if any)	m^2

or, for linear activities:

Alternative:	Length of the activity:
Alternative A1 (from alternative site 1)	m

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

Alternative A2 (from alternative site 2)	m
Alternative A3 (from alternative site 3)	m

b) 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

4. 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	m

Describe the type of access road planned:

The site can be accessed off the existing R336 which is located adjacent to the Sun Citrus site in Kirkwood, Eastern Cape Province.

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. See Appendix A.

A site plan showing the position of the access road, as well as an indication of the road in relation to the site is included within **Appendix A.**

5. 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 accurate indication of the project site position as well as the positions of the alternative sites, if any;
- indication of all the alternatives identified;
- closest town(s;)
- 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).

An A3 Locality Map is attached within **Appendix A**.

6. LAYOUT/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:

- the property boundaries and numbers of all the properties within 50 metres of the site;
- the current land use as well as the land use zoning of the site;
- the current land use as well as the land use zoning each of the properties adjoining the site or sites;
- the exact position of each listed activity applied for (including alternatives);
- servitude(s) indicating the purpose of the servitude;
- a legend; and
- a north arrow.

A detailed site plan(s) for each alternative activity is attached within **Appendix A**

7. SENSITIVITY MAP

The layout/route plan as indicated above must be overlain with a sensitivity map that indicates all the sensitive areas associated with the site, including, but not limited to:

- watercourses;
- 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 infested with alien species); and
- critical biodiversity areas.

The sensitivity map must also cover areas within 100m of the site and must be attached in **Appendix A**.

A sensitivity map covering areas within 100m of the site is attached within **Appendix A**.

8. 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 report**.** It must be supplemented with additional photographs of relevant features on the site, if applicable.

Colour photographs have been taken from the centre of the proposed site in the eight major compass directions. Annotated photographs are included in **Appendix B**.

9. FACILITY ILLUSTRATION

A detailed illustration of the activity must be provided at a scale of at least 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 preliminary facility illustration which represents a realistic image of the planned rooftop solar energy installation is attached within **Appendix C**.

10. ACTIVITY MOTIVATION

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

1. Is the activity permitted in terms of the property's existing land use rights?	**YES** ✓		Please explain
The current land-use on the site is industrial/commercial. The development of the 1.2MW rooftop solar energy facility will allow current industrial/commercial activities within the building to continue while at the same time utilising the roof of the building for electricity generation from solar panels. Therefore the current land-use will be retained.			

2. Will the activity be in line with the following?			
(a) Provincial Spatial Development Framework (PSDF)	**YES** ✓		Please explain
A key development issue identified in the Eastern Cape Provincial Spatial Development Plan (PSDP) is electricity supply capacity. The PSDP aims at assisting Eskom in being able to plan according to an agreed long term spatial development scenario and build capacity in those areas where development is being promoted. The proposed Son Sitrus Rooftop Solar Energy Installation will connect to Eskom's national grid network thus increasing its capacity. The project is therefore in line with the developmental needs identified in the Eastern Cape's SDFD.			
(b) Urban edge / Edge of Built environment for the area	**YES** ✓		Please explain
The proposed site is located within the urban edge of the town of Kirkwood.			
(c) Integrated Development Plan (IDP) and Spatial Development Framework (SDF) of the Local Municipality (e.g. would the approval of this application compromise the integrity of the existing approved and credible municipal IDP and SDF?).	**Yes** ✓		Please explain

Sundays River Local Municipality IDP (2011-2017)

The Sundays River Local Municipality IDP (2011-2017) is the main strategic planning document which considers the municipality's development initiatives, projects, plans and programmes. The IDP highlights the social and economic needs or issues within the municipal area. The development of the Son Sitrus Rooftop Solar Installation could indirectly contribute to the Sundays River Local Municipality achieving its development needs related to electricity supply and utilisation of renewable energy such as solar energy. The project will not compromise the integrity of the IDP as it is located on the roof of an existing building.

Sundays River Local Municipality SDF (2011)

The purpose of the Sundays River Local Municipality SDF is to ensure that the local municipalities contribute towards the spatial development structures within the municipality. The SDF states that opportunities for future development in Kirkwood is mainly based on the strong administrative and commercial functions and that future expansion is severely limited by surrounding agricultural land uses and terrain characteristics. The SDF states that in order to contain and manage urban sprawl and to improve urban efficiency, urban development should be contained within the urban area/edge of the town. The Son Sitrus building on which the proposed facility is located falls within the urban edge of the town of Kirkwood. As the facility is proposed on a rooftop, the development will not impact on the spatial development within the municipality or conflict with the current SDF since it will not conflict or compete with the proposed land use in the area.

(d) Approved Structure Plan of the Municipality	**YES** ✓		Please explain
The Sundays River Local Municipality aims to upgrade the electricity network for future development. The proposed Son Sitrus Rooftop Solar Energy Installation could indirectly contribute to the municipality's needs related to electricity supply and utilisation.			
(e) An Environmental Management Framework (EMF) adopted by the Department (e.g. Would the approval of this application compromise the integrity of the existing environmental management priorities for the area and if so, can it be justified in terms of sustainability considerations?)		NO ✓	Please explain
The Sundays River Valley Local Municipality and the Cacadu District Municipality do not have an Environmental Management Framework. The Eastern Cape Biodiversity Conservation Plan (ECBCP) identifies Critical Biodiversity Areas (CBAs), which are terrestrial and aquatic features in the landscape which are critical for conserving biodiversity and maintaining ecosystems. The site occurs within an aquatic CBA 2 area, due to its proximity to the Sundays River. However, the solar panels are proposed on a rooftop of an existing building, and therefore the site is considered suitable for the development of the project, despite the CBA classification. The proposed project will not compromise the integrity of the existing environmental management priorities set out by the ECBCP.			
(f) Any other Plans (e.g. Guide Plan)	**YES**	**NO**	Please explain
None			
3. Is the land use (associated with the activity being applied for) considered within the timeframe intended by the existing approved SDF agreed to by the relevant environmental authority (i.e. is the proposed development in line with the projects and programmes identified as priorities within the credible IDP)?	**YES** ✓		Please explain
The purpose of the rooftop solar installation is to generate electricity from a renewable resource, which is fed into the national grid. The project is not specifically considered within the approved municipal IDP and SDF. However the municipality identified basic service delivery such as electricity supply and economic growth as priorities within the SDF both locally and within the district municipality. The proposed development will contribute towards achieving these goals.			

4. Does the community/area need the activity and the associated land use concerned (is it a societal priority)? (This refers to the strategic as well as local level (e.g. development is a national priority, but within a specific local context it could be inappropriate.)	**YES** ✓		Please explain
The evacuation of additional power into the Eskom grid, although only 1.2MW, will serve to improve the stability of the grid for the immediate area, assist the government in achieving the goal of 17GW renewable energy as part of the electricity generation technology mix by 2030, and assist in the reduction in the need to mine non-renewable resources such as coal for conventional power generation. The proposed development will benefit the local community through job creation, skills development opportunities and training which will, in turn, assist in reducing poverty levels that the area is currently facing, and strengthen electricity supply for the area.			
5. Are the necessary services with adequate capacity currently available (at the time of application), or must additional capacity be created to cater for the development? (Confirmation by the relevant Municipality in this regard must be attached to the final Basic Assessment Report as Appendix I.)	**YES** ✓		Please explain
All the services required for the project have been adequately provided for and, should any need for other services arise, the relevant authority will be communicated with. Existing services provided by the Sundays River Local Municipality are of adequate capacity to absorb the proposed small-scale 1.2MW PV development. **Roads:** Access provision from the R336 which borders the Son Sitrus Fruit Packers' premises may result in localised traffic impacts but the cost of any access provisions will be absorbed by the applicant. **Water:** The municipality will provide the applicant with confirmation of the availability of water for the construction phase. Approximately 150m of water per annum will be required for the cleaning of the PV panels. Failing this suitable water sources will be identified for the construction and operational phase. **Electricity:** The development will generate power, and will strengthen the local electricity supply as the electricity generated will be fed directly into the Eskom grid.			

6. Is this development provided for in the infrastructure planning of the municipality, and if not what will the implication be on the infrastructure planning of the municipality (priority and placement of services and opportunity costs)? (Comment by the relevant Municipality in this regard must be attached to the final Basic Assessment Report as Appendix I.)		**NO** ✓	Please explain
The proposed project is to be developed by a private developer (i.e. Building Energy) and not the municipality. It therefore does not fall within the infrastructure planning of the municipality, although the need for the pursuance of renewable energy alternatives and promotion of energy efficiency is advocated in the municipal IDP. The project will not have any implications for the infrastructure planning of the municipality.			
7. Is this project part of a national programme to address an issue of national concern or importance?	**YES** ✓		Please explain
This project is proposed to be developed under the Department of Energy Small Projects REIPPP Programme. The evacuation of additional power into the Eskom grid will serve to improve the stability of the grid for the immediate area, assist the government in achieving the goal of 17GW renewable energy as part of the electricity generation technology mix by 2030, and assist in the reduction in the need to mine non-renewable resources such as coal for conventional power generation. In order to meet the long-term goal of a sustainable renewable energy industry, a target of 17.8GW of renewables by 2030 has been set by the Department of Energy (DoE) within the Integrated Resource Plan (IRP) 2010 and incorporated in the REIPPP Programme. This energy will be produced from various renewable energy technologies including solar energy facilities (such as PV technology). The proposed project is to contribute towards this goal for renewable energy and is identified as a potential Strategic Infrastructure Project in terms of the South African National Infrastructure Plan.			
8. Do location factors favour this land use (associated with the activity applied for) at this place? (This relates to the contextualisation of the proposed land use on this site within its broader context.)	**YES** ✓		Please explain
» *Land use and grid connection* The current land-use on the site is industrial/commercial. The development of the 1.2MW rooftop solar energy installation will allow current industrial/commercial activities within the building to continue while at the same time utilising the roof of the building for electricity generation from solar panels. Therefore the current land-use will be retained. The project will connect into the grid via an existing substation on the property, which has capacity to receive the electricity generated by the solar facility. » *Site access and availability*			

The land is owned by Farm Secure (Pty) Ltd and is currently leased by the Sun Citrus Packer (Pty) Ltd. The rooftop is available to Building Energy for the installation of the proposed project.

» *Site access*

The site can be accessed via the existing R336 which is located adjacent to the Sun Citrus site in Kirkwood.

» *Climatic conditions*

The economic viability of a photovoltaic plant is directly dependent on the annual direct solar irradiation values. The proposed building and rooftop site was selected for the development of a solar facility as the proposed site is uniformly irradiated by the sun and considered suitable for the development of a PV facility.

» *Gradient*

A level surface area is preferred for the installation of PV panels and specifically for PV technologies. It is proposed that the project utilises photovoltaic cells that will be mounted parallel to the roof in order to maintain the shape of the building. The rooftop area for the proposed PV plant is generally on a rooftop which is slightly sloped.

9. Is the development the best practicable environmental option for this land/site?	**YES ✓**		Please explain

Electrical infrastructure: There is an existing power line and a substation on the site to support the proposed siting of a PV facility in this location.

Access: The site can be accessed via the existing R336 which is located adjacent to the Sun Citrus site in Kirkwood.

Ecological sensitivity: A number of provincial, local and private reserves and nature areas exist within the study area including:

- Addo Elephant National Park including Kuzuko Game Reserve, Woody Cape Nature Reserve, Alexandria Coast Reserve, Alexandria State Forest, San Soucie, Boschhoek, Boxwood and Congos Kraal;
- Inthaba Lodge;
- Goodhope Reserve;
- Voetpadskloof Citruslandgoed;
- Scotia Safaris;
- Shamwari Game Reserve; and
- Amakhala Game Reserve.

There have been a number of regional conservation assessments produced within the Eastern Cape Province, including the following:

The Eastern Cape Biodiversity Conservation Plan (ECBCP) identifies Critical Biodiversity Areas (CBAs), which are terrestrial and aquatic features in the landscape that are

critical for conserving biodiversity and maintaining ecosystem functioning (Berliner & Desmet 2007). The ECBCP identifies CBAs at different levels with decreasing biodiversity importance, as follows (for the study area and surroundings):

- » PA: Protected areas.
- » CBA 1: CR vegetation types and irreplaceable biodiversity areas (areas definitely required to meet conservation targets).
- » CBA 2: EN vegetation types, ecological corridors, forest patches that do not fall into CBA 1, 1 km coastal buffer, irreplaceable biodiversity areas that do not fall into CBA 1.
- » CBA 3: VU vegetation types.

A map showing the CBAs and protected areas in the region is contained in Appendix A. The site occurs within an aquatic CBA 2 area, due to its proximity to the Sundays River. However, the solar panels are proposed on a rooftop of an existing building, and therefore the project would not impact on these sensitive areas. The site is therefore considered suitable for the development of the project, despite the CBA classification.

10. Will the benefits of the proposed land use/development outweigh the negative impacts of it?	**YES** ✓		Please explain

The negative impacts associated with the proposed activity include visual impact and traffic congestion (the R336 is the main access route to the town of Kirkwood) impacts during construction. However these impacts are not considered to be of high significance. All impacts can be managed and mitigated to acceptable levels, as outlined in the Environmental Management Programme.

Positive impacts associated with the facility include i) an additional income source for the landowner, as a portion of the profits from the power generation will accrue to the landowner; ii) generation of electricity from a renewable resource also reduces reliance (albeit limited) on conventional power sources; iii) local economic upliftment and job creation (albeit limited). These positive impacts will extend beyond the boundary of the site and are expected to outweigh the negative impacts.

11. Will the proposed land use/development set a precedent for similar activities in the area (local municipality)?		**NO** ✓	Please explain

There are no known similar commercial solar energy facilities being applied for within the local municipality, however the existing power line and a substation on the site support the proposed siting of a PV facility in this location. No development precedent has been set which would see accumulation of similar power generation developments within a specific portion of the municipal area.

12. Will any person's rights be negatively affected by the proposed activity/ies?		**NO** ✓	Please explain

The proposed development of the 1.2MW rooftop solar energy installation will allow

current industrial/commercial activities within the building to continue while at the same time utilising the roof of the building for electricity generation from solar panels. Therefore the current land-use will be retained. It is not expected that this would impact on the current rights. Parties who might be interested in or affected by the construction of the facility were consulted with regards to the proposed project through the EIA process. No objections were noted.

13. Will the proposed activity/ies compromise the "urban edge" as defined by the local municipality?		**NO** ✓	Please explain

The PV panels will be installed on the rooftop of the existing Son Sitrus Packaging Facility. Therefore the "urban-edge" will not be affected by the development.

14. Will the proposed activity/ies contribute to any of the 17 Strategic Integrated Projects (SIPS)?	**YES** ✓		Please explain

The proposed activity covers the objectives of Strategic Infrastructure Projects (SIPS) 8:

- SIP 8: Green energy of support of South African economy - Support sustainable green energy initiatives on a National scale through a diverse range of clean energy options envisaged in the Integrated Resource Plan (IRP 2010).

15. What will the benefits be to society in general and to the local communities?	Please explain

The project will contribute in a small way towards reducing the emission of greenhouse gases through the generation of electricity from conventional technologies. This will benefit society at a national level.

At a local level, several permanent and temporary employment opportunities will be created during the construction and operation of the proposed facility. In addition, local economic benefits would 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.). In addition, according to the DoE's bidding requirements, the developer must plan for a percentage of the profit per annum from the solar energy facility to feed back into the community through a social beneficiation scheme.

16. Any other need and desirability considerations related to the proposed activity?	Please explain

One of the objectives of the Sundays River Valley Municipality IDP is to provide an affordable and sustainable electricity supply to the community. The area is also in need of infrastructure which will benefit the municipal economy. This project will assist in addressing this need.

17. How does the project fit into the National Development Plan for 2030?	Please explain

One of the objectives of the National Development Plan for 2030 is the transition to low carbon energy through speeding up and expanding renewable energy. This project will fit into this vision since it aims to contribute towards electricity supply through

carbon-free methods.
18. Please describe how the general objectives of Integrated Environmental Management as set out in section 23 of NEMA have been taken into account.
The general objectives of Integrated Environmental Management have been taken into account for this Basic Assessment Report by means of identifying, predicting and evaluating the actual and potential impacts on the environment, socio-economic conditions and cultural heritage component. The risks, consequences, alternatives as well as options for mitigation of activities have also been considered with a view to minimise negative impacts, maximise benefits, and promote compliance with the principles of environmental management.
19. Please describe how the principles of environmental management as set out in section 2 of NEMA have been taken into account.
The principle of environmental management as set out in section of NEMA states that: » Environmental management must place people and their needs at the forefront of its concern, and serve their physical, psychological, developmental, cultural and social interests equitably; » Development must be sustainable socially (people), environmentally (planet) and economically (prosperity);and » Sustainable development requires the consideration of all the relevant factors, From project perspective the development can be considered sustainable as it makes use of renewable energy resource and does not have a high significant impact on the environment. These principles of sustainable development is further taken into account by including measures within the Environmental Management Programme (EMPr) to mitigate impacts that may occur thereby further reducing the environmental impacts.

11. 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:

Table 1: List all legislation, policies and/or guidelines for the Son Sitrus Rooftop Solar Energy Installation

Legislation	***Applicable Requirements***	***Relevant Authority***	***Compliance requirements***
	National Legislation		
National Environmental Management Act (Act No. 107 of 1998)	» NEMA requires, inter alia, that: * Development must be socially, environmentally, and economically sustainable. * Disturbance of ecosystems and loss of biological diversity are avoided, or, where they cannot be altogether avoided, are minimised and remedied. * A risk-averse and cautious approach is applied, which takes into account the limits of current knowledge about the consequences of decisions and actions. » 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 S24(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 charged by NEMA with granting of the relevant	» National Department of Environmental Affairs » Eastern Cape DEDEAT	» The Final Basic Assessment Report is to be submitted to the DEA for review and decision making. » The EC DEDEAT will act as the commenting authority.

Legislation	Applicable Requirements	Relevant Authority	Compliance requirements
	environmental authorisation. » In terms of GNR 543 of 18 June 2010, a Basic Assessment Process is required to be undertaken for the proposed project.		
National Environmental Management Act (Act No. 107 of 1998)	» A project proponent is required to consider a project holistically and to consider the cumulative effect of potential impacts. » 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 a project is avoided, stopped or minimised.	» National Department of Environmental Affairs	» While no permitting or licensing requirements arise directly, the holistic consideration of the potential impacts of the proposed project has found application in the BA process. » The implementation of mitigation measures will be included as part of the Draft EMPr and will continue to apply throughout the life cycle of the project.
National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008)	» The Minister may by notice in the Gazette publish a list of waste management activities that have, or are likely to have, a detrimental effect on the environment. » In terms of the regulations published in terms of this Act (GN 921, 29 November 2013), a Basic Assessment or Environmental Impact Assessment is required to be undertaken for identified listed activities. » Any person who stores waste must at least take steps, unless otherwise	» National Department of Water and Environmental Affairs » Eastern Cape DEDEAT	» As no waste disposal site is to be associated with the proposed project, no permit is required in this regard. » Waste handling, storage and disposal during construction and operation is required to be undertaken in accordance with the requirements of this Act. This will be detailed in the EMPr for the project. » The volumes of waste to be generated and stored on the site during construction and operation PV facility will not require a waste license

Legislation	*Applicable Requirements*	*Relevant Authority*	*Compliance requirements*
	provided by this Act, to ensure that (a) The containers in which any waste is stored, are intact and not corroded or in any other way rendered unlit for the safe storage of waste; (b) Adequate measures are taken to prevent accidental spillage or leaking; (c) The waste cannot be blown away; (d) Nuisances such as odour, visual impacts and breeding of vectors do not arise; and (e) Pollution of the environment and harm to health are prevented.		(provided these remain below the prescribed thresholds).
National Environmental Management: Air Quality Act (Act No. 39 of 2004)	» S18, S19 and S20 of the Act allow certain areas to be declared and managed as "priority areas" » Declaration of controlled emitters (Part 3 of Act) and controlled fuels (Part 4 of Act) with relevant emission standards » The Act provides that an air quality officer may require any person to submit an atmospheric impact report if there is reasonable suspicion that the person has failed to comply with the Act. » Dust control regulations promulgated in November 2013 may require the implementation of a dust management	» National Department of Environmental Affairs » Eastern Cape DEDEAT	» While no permitting or licensing requirements arise from this legislation, this Act will find application during the construction phase of the project.

Legislation	*Applicable Requirements*	*Relevant Authority*	*Compliance requirements*
	plan.		
National Water Act (Act No. 36 of 1998)	» Under S21 of the act, water uses must be licensed unless such water use falls into one of the categories listed in S22 of the Act or falls under the general authorisation. » In terms of S19, 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.	» National Department of Water Affairs » Eastern Cape Department of Water Affairs	» A water use licence will not be requires for the proposed development.
Environment Conservation Act (Act No. 73 of 1989)	» National Noise Control Regulations (GN R154 dated 10 January 1992)	» National Department of Environmental Affairs » Local Authorities	» There is no requirement for a noise permit in terms of the legislation. A Noise Impact Assessment is required to be undertaken in accordance with SANS 10328. This must be completed as part of the EIA process for the project.
National Veld and Forest Fire Act (Act 101 of 1998)	» Provides requirements for veldfire prevention through firebreaks and required measures for fire-fighting. Chapter 4 places a duty on landowners to prepare and maintain firebreaks, and Chapter 5 places a duty on all landowners to acquire equipment and have available personnel to fight fires. » In terms of S12 the applicant would be obliged to burn firebreaks to	» Department of Agriculture, Forestry and Fisheries	» While no permitting or licensing are required for the proposed development.

Legislation	*Applicable Requirements*	*Relevant Authority*	*Compliance requirements*
	ensure that should a veldfire occur on the property, that it does not spread to adjoining land. » In terms of S12 the firebreak would need to be 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.		
Hazardous Substances Act (Act No. 15 of 1973)	» This Act regulates the control of substances that may cause injury, or ill health, or death due to their toxic, corrosive, irritant, strongly sensitising, or inflammable nature or the generation of pressure thereby in certain instances and for the control of certain electronic products. To provide for the rating of such substances or products in relation to the degree of danger; to provide for the prohibition and control of the importation, manufacture, sale, use, operation, modification, disposal or dumping of such substances and products. » Group I and II: Any substance or	» Department of Health	» It is necessary to identify and list all the Group I, II, III, and IV hazardous substances that may be on the site and in what operational context they are used, stored or handled.

Legislation	Applicable Requirements	Relevant Authority	Compliance requirements
	mixture of a substance that might by reason of its toxic, corrosive etc., nature or because it generates pressure through decomposition, heat or other means, cause extreme risk of injury etc., can be declared to be Group I or Group II hazardous substance; » Group IV: any electronic product; » Group V: any radioactive material. » The use, conveyance, or storage of any hazardous substance (such as distillate fuel) is prohibited without an appropriate license being in force.		
National Road Traffic Act (Act No 93 of 1996)	The Technical Recommendations for Highways (TRH 11): "Draft Guidelines for Granting of Exemption Permits for the Conveyance of Abnormal Loads and for other Events on Public Roads" outline the rules and conditions which apply to the transport of abnormal loads and vehicles on public roads and the detailed procedures to be followed in applying for exemption permits are described and discussed. Legal axle load limits and the restrictions imposed on abnormally heavy loads are discussed in relation to the damaging	» Provincial Department of Transport (provincial roads) » South African National Roads Agency Limited (national roads)	An abnormal load/vehicle permit may be required to transport the various components to site for construction. These include: » Route clearances and permits will be required for vehicles carrying abnormally heavy or abnormally dimensioned loads. » Transport vehicles exceeding the dimensional limitations (length) of 22m. » Depending on the trailer configuration and height when loaded, some of the power station components may not meet specified dimensional limitations (height and width).

Legislation	Applicable Requirements	Relevant Authority	Compliance requirements
	effect on road pavements, bridges and culverts. » The general conditions, limitations and escort requirements for abnormally dimensioned loads and vehicles are also discussed and reference is made to speed restrictions, power/mass ratio, mass distribution and general operating conditions for abnormal loads and vehicles. Provision is also made for the granting of permits for all other exemptions from the requirements of the National Road Traffic Act and the relevant Regulations.		
Provincial Legislation			
Nature Conservation Ordinance (Act No. 19 of 1974)	» Article 63 prohibits the picking of certain fauna (including cutting, chopping, taking, and gathering, uprooting, damaging, or destroying). » Schedule 3 lists endangered flora and Schedule 4 lists protected flora. » Articles 26 to 47 regulate the use of wild animals.	» Eastern Cape DEDEAT	» No permitting or licensing is required for the proposed development

12. Waste, effluent, emission and noise management

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?	The quantity has not been defined.	

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

It is anticipated that construction waste will be disposed of at the Kirkwood landfill site which is located ~37km from the Son Sitrus Package Facility.

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

In order to comply with legal requirements should there be excess solid construction waste after recycling options have been exhausted, the waste will be trucked to Kirkwood landfill (to be confirmed in consultation with the municipality).

Will the activity produce solid waste during its operational phase?		**NO** ✓
If YES, what estimated quantity will be produced per month?	n/a	

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

If the solid waste will be disposed of into a municipal waste stream, indicate which registered landfill site will be used.

Where will the solid waste be disposed of 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 NEM:WA? **NO** ✓

If YES, inform the competent authority and request a change to an application for scoping and EIA. An application for a waste permit in terms of the NEM:WA must also be submitted with this application.

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. An application for a waste permit in terms of the NEM:WA must also be submitted with this application.

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? 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:

Water will be used for the cleaning of panels during operation. Wastewater (other than sewage) will not be produced.

c) Emissions into the atmosphere

Will the activity release emissions into the atmosphere other than exhaust emissions and dust associated with construction phase activities?	**NO** ✓
If YES, is it controlled by any legislation of any sphere of government?	

If YES, the applicant must 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:

During construction minimal dust (the packaging facility has been paved) and vehicle emissions will be generated. The contractor is required to adhere to the mitigation measures stipulated in the Environmental Management Programme and the National Dust Control Regulations (1 November 2013) in terms of dust abatement and control.

PV facility convert solar energy into electricity, and consume no fuel during operation. PV facility produce an insignificant quantity of greenhouse gases over their lifecycle when compared to conventional coal-fired power stations. The operational phase of a solar facility produces no carbon dioxide, sulphur dioxide, mercury, particulates, or any other type of air pollution.

d) Waste permit

Will any aspect of the activity produce waste that will require a waste permit in terms of the NEM:WA?	**NO** ✓

If YES, please submit evidence that an application for a waste permit has been submitted to the competent authority

e) 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:

A limited amount of noise will be generated during the construction phase of the facility due to movement of heavy machinery on site. The operation phase will not generate noise.

13. 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

The source of water has not been confirmed at this stage. Alternative water sources could be supplied by the municipality, or a borehole identified in the vicinity of suitable yield.

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 authorisation (general authorisation or water use license) from the Department of Water Affairs?	**NO** ✓

If YES, please provide proof that the application has been submitted to the Department of Water Affairs.

14. ENERGY EFFICIENCY

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

The activity is in itself an activity that is proposed to generate electricity from a cleaner alternative energy source (i.e. solar radiation).

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

The purpose of a PV installation is to utilise a renewable energy source (i.e. solar radiation) for the production of electricity. Therefore it is not required to consider any additional alternative energy sources.

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 B and indicate the area, which is covered by each copy No. on the Site Plan.

Section B 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 the form entitled "Details of specialist and declaration of interest" for each specialist thus appointed and attach it in Appendix I. All specialist reports must be contained in Appendix D.

Property description/physical address:

Province	Eastern Cape Province
District Municipality	Cacadu District Municipality
Local Municipality	Sundays River Local Municipality
Ward Number(s)	Ward 2
Farm name and number	Gouvernements Belooning
Portion number	Portion 31
SG Code	C07600000000052100031

Where a large number of properties are involved (e.g. linear activities), please attach a full list to this application including the same information as indicated above.

Current land-use zoning as per local municipality IDP/records:

Business Zone 4

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✓

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		2.4 Closed valley		2.7 Undulating plain / low hills	
2.2 Plateau		2.5 Open valley		2.8 Dune	
2.3 Side slope of hill/mountain		2.6 Plain	✓	2.9 Seafront	

3. GROUNDWATER, SOIL AND GEOLOGICAL STABILITY OF THE SITE

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

	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. 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. SURFACE WATER

Indicate the surface water present on and or adjacent to the site and alternative sites?

Perennial River	**YES✓**	NO	UNSURE
Non-Perennial River	YES	**NO✓**	UNSURE
Permanent Wetland	YES	**NO✓**	UNSURE
Seasonal Wetland	YES	**NO✓**	UNSURE
Artificial Wetland	YES	**NO✓**	UNSURE
Estuarine / Lagoonal wetland	YES	**NO✓**	UNSURE

If any of the boxes marked YES or UNSURE is ticked, please provide a description of the relevant watercourse.

The proposed site is located approximately 1.5km from the Sundays River. The facility will however be located on a rooftop and will therefore not impact on this river.

6. LAND USE CHARACTER OF SURROUNDING AREA

Indicate land uses and/or prominent features that 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:

Natural area	Dam or reservoir	Polo fields
Low density residential	Hospital/medical centre	Filling station [H]
Medium density residential✓	School	Landfill or waste treatment site
High density residential	Tertiary education facility	Plantation
Informal residential[A]	Church	**Agriculture ✓**
Retail commercial & warehousing	Old age home	River, stream or wetland
Light industrial	Sewage treatment plant[A]	Nature conservation area
Medium industrial [AN]	Train station or shunting yard [N]	Mountain, koppie or ridge

Heavy industrial [AN]	Railway line [N]	Museum
Power station	Major road (4 lanes or more) [N]	Historical building
Office/consulting room	Airport [N]	**Protected Area✓**
Military or police base/station/compound	Harbour	Graveyard
Spoil heap or slimes dam[A]	Sport facilities	Archaeological site
Quarry, sand or borrow pit	Golf course	Other land uses (describe)

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? 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? Specify and explain:

Does the proposed site (including any alternative sites) fall within any of the following:

Critical Biodiversity Area (as per provincial conservation plan)	**YES✓**	
Core area of a protected area?		**NO✓**
Buffer area of a protected area?		**NO✓**
Planned expansion area of an existing protected area?		**NO✓**
Existing offset area associated with a previous Environmental Authorisation?		**NO✓**
Buffer area of the SKA?		**NO✓**

If the answer to any of these questions was YES, a map indicating the affected area must be included in Appendix A.

7. 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? If YES, explain:	**NO ✓**

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

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 provide proof that this permit application has been submitted to SAHRA or the relevant provincial authority.

8. SOCIO-ECONOMIC CHARACTER

a) Local Municipality

Please provide details on the socio-economic character of the local municipality in which the proposed site(s) are situated.

Level of unemployment:

According to Census 2011, 18 930 people are economically active (employed or unemployed but looking for work) within the municipal area, and of these 15,0% are unemployed. Of the economically active youth (15–34 years) in the area, 18,8% are unemployed.

Economic profile of local municipality:

According to the Sundays River Valley Municipality IDP 2011/2016, the agricultural industry is the main economic activity in the area and centres mainly on citrus fruit farming in the Sunday's River Valley and dairy and chicory farming towards the Alexandria area in the east. Eco-tourism and reserves also play an important role in

the mountainous areas and areas surrounding the Sundays River Valley and Alexandria farming region. Approximately 25% of South Africa's navel oranges and 50% of the country's lemons are produced in the Sunday's River Valley with the area exporting more than 13 million cartons of navels per year, earning more than R1 billion in foreign exchange for the country. Other agricultural products include vegetables, potatoes, maize, wheat, chicory, flowers and kukuyi-rye grass.

Level of education:

According to the 2011 census, 8.8% of the population in the area which are 20 years old and more have no education, 15% have matriculated and 8.8% have higher education.

b) Socio-economic value of the activity

What is the expected capital value of the activity on completion?	R20 million per megawatt.
What is the expected yearly income that will be generated by or as a result of the activity?	This can only be determined on a case by case basis due to the direct link to uniqueness of the business plan.
Will the activity contribute to service infrastructure?	**YES√**
Is the activity a public amenity?	**YES√**
How many new employment opportunities will be created in the development and construction phase of the activity/ies?	Over 20 employment opportunities.
What is the expected value of the employment opportunities during the development and construction phase?	To be determined.
What percentage of this will accrue to previously disadvantaged individuals?	Tendering obligations for awarded projects within the REIPPP Programme focus on previously disadvantaged individuals with respect to Small Medium Enterprise (SME) participation, Enterprise Development, Preferential Procurement, Local Content sourcing and BBBEE.
How many permanent new employment opportunities will be created during the operational phase of the activity?	6 people for 20 Years.
What is the expected current value of the employment opportunities during the first 10 years?	To be determined.
What percentage of this will accrue to previously disadvantaged	Tender obligations in terms

individuals?	of the REIPPP Programme require a minimum 2.5 local community entity participation with a level 5 Contributor Status Level.

9. BIODIVERSITY

Please note: The Department may request specialist input/studies depending on the nature of the biodiversity occurring on the site and potential impact(s) of the proposed activity/ies. To assist with the identification of the biodiversity occurring on site and the ecosystem status consult http://bgis.sanbi.org or BGIShelp@sanbi.org. Information is also available on compact disc (cd) from the Biodiversity-GIS Unit, Ph (021) 799 8698. This information may be updated from time to time and it is the applicant/ EAP's responsibility to ensure that the latest version is used. A map of the relevant biodiversity information (including an indication of the habitat conditions as per (b) below) and must be provided as an overlay map to the property/site plan as Appendix D to this report.

a) Indicate the applicable biodiversity planning categories of all areas on site and indicate the reason(s) provided in the biodiversity plan for the selection of the specific area as part of the specific category)

Systematic Biodiversity Planning Category				**If CBA or ESA, indicate the reason(s) for its selection in biodiversity plan**
Critical Biodiversity Area (CBA) ✓	Ecological Support Area (ESA)	Other Natural Area (ONA)	No Natural Area Remaining (NNR)	The Eastern Cape Biodiversity Conservation Plan (ECBCP) identifies Critical Biodiversity Areas (CBAs), which are terrestrial and aquatic features in the landscape that are critical for conserving biodiversity and maintaining ecosystem functioning (Berliner & Desmet 2007). The ECBCP identifies CBAs at different levels with decreasing biodiversity importance, as follows (for the study area and surroundings): » PA: Protected areas. » CBA 1: CR vegetation types and irreplaceable biodiversity areas (areas definitely required to meet conservation targets). » CBA 2: EN vegetation types, ecological corridors, forest patches that do not fall into CBA 1, 1 km coastal buffer, irreplaceable

				biodiversity areas that do not fall into CBA 1. » CBA 3: VU vegetation types. The site occurs within an aquatic CBA 2 area, due to its proximity to the Sundays River. However, the solar panels are proposed on a rooftop of an existing building, and therefore will not impact on this sensitive area. The site is therefore considered to be suitable for the development of the project, despite the CBA classification. A map showing the CBAs and protected areas in the region is contained in Appendix A.

b) Indicate and describe the habitat condition on site

Habitat Condition	Percentage of habitat condition class (adding up to 100%)	Description and additional Comments and Observations (including additional insight into condition, e.g. poor land management practises, presence of quarries, grazing, harvesting regimes etc).
Natural	%	
Near Natural (includes areas with low to moderate level of alien invasive plants)	%	
Degraded (includes areas heavily invaded by alien plants)	%	
Transformed (includes cultivation, dams, urban, plantation, roads, etc.)	100%	The site is located on the rooftop of a building currently used as a packaging facility has the facility site has been paved. The packaging facility is surrounded by citrus farms.

c) Complete the table to indicate:

(i) the type of vegetation, including its ecosystem status, present on the site; and

(ii) whether an aquatic ecosystem is present on site.

<table>
<tr><th colspan="2">Terrestrial Ecosystems</th><th colspan="4">Aquatic Ecosystems</th></tr>
<tr><td rowspan="4">Ecosystem threat status as per the National Environmental Management: Biodiversity Act (Act No. 10 of 2004)</td><td>Critical √</td><td rowspan="2">Wetland (including rivers, depressions, channelled and unchanneled wetlands, flats, seeps pans, and artificial wetlands)</td><td rowspan="2">Estuary</td><td rowspan="2" colspan="2">Coastline</td></tr>
<tr><td>Endangered</td></tr>
<tr><td>Vulnerable</td><td rowspan="2">Least Threatened</td><td></td><td>NO√</td><td></td><td>NO√</td><td></td><td>NO √</td></tr>
</table>

d) Please provide a description of the vegetation type and/or aquatic ecosystem present on site, including any important biodiversity features/information identified on site (e.g. threatened species and special habitats)

The site occurs within an aquatic CBA 2 area, due to its proximity to the Sundays River. However, the solar panels are proposed on a rooftop of an existing building, and therefore will not impact on this sensitive area. The site is therefore considered to be suitable for the development of the project, despite the CBA classification. A map showing the CBAs and protected areas in the region is contained in Appendix A. **The** site is currently used as a packaging facility, the vegetation has been cleared and the surface has been paved.

SECTION C: PUBLIC PARTICIPATION

1. ADVERTISEMENT AND NOTICES

Publication name	The Herald and UD News Eastern Cape	
Date published	Announce project: 10 & 11 July 2014 respectively	
Date published	Notification of draft BAR review period: 14 July 2014	
Site notice position	**Latitude**	**Longitude**
	33° 24' 538" S	25° 26' 722" E
Date placed	30 June 2014	

Include proof of the placement of the relevant advertisements and notices in **Appendix E1**.

2. Determination of appropriate measures

Provide details of the measures taken to include all potential I&APs as required by Regulation 54(2)(e) and 54(7) of GN R.543.

Key stakeholders (other than organs of state) identified in terms of Regulation 54(2)(b) of GN R.543:

Title, Name and Surname	**Affiliation/ key stakeholder status**	**Contact details (tel number or e-mail address)**
Mr Jerom Yazbek (Farm Secure (Pty) Ltd)	Key stakeholder	P.O. Box 4138, Tyger Valley, 7536
Sun Citrus Packaging	Key stakeholder	Sonop Street, Kirkwood, Eastern Cape, 6120

- » Site notices (English and Afrikaans) were placed at the entrance of the Son Sitrus Packaging Facility along the R336, at the Sunday River Valley Municipality and the Kirkwood Public Library.
- » Background Information leaflets and reply forms (English and Afrikaans) were placed at the Kirkwood Public Library.

Include proof that the key stakeholder received written notification of the proposed activities as **Appendix E2**. This proof may include any of the following:

» e-mail delivery reports;

» registered mail receipts;
» courier waybills;
» signed acknowledgements of receipt; and/or
» or any other proof as agreed upon by the competent authority.

Refer to Appendix E2 for the proof of email, registered mail receipts and courier waybills.

3. ISSUES RAISED BY INTERESTED AND AFFECTED PARTIES

Summary of main issues raised by I&APs	**Summary of response from EAP**
A meeting was held with the Sundays River Valley Local Municipality. The municipality indicated that they do not have addition water capacity to supply the proposed solar facility. The municipality confirmed that the site is zoned as Business Zone 2.	Comment noted, other alternative sources could be supplied by the municipality or the recycling of rain water could be used for the cleaning of the PV Panels.
Department of Economic Development, Environmental Affairs and Tourism indicated that they Agree with the Practitioner's conclusion and that the establishment of the Son Sitrus Rooftop Solar Energy Installation is acceptable from an environmental perspective provided all the recommended mitigation measures are implemented. They indicated that they also support the recommendations of the practitioner in section. Although the Sundays River Valley Local Municipality does not have the additional capacity to supply the solar facility, alternative sources of water or mechanisms to clean the PV panels could be used.	Thank you for your comments, they have been noted.

4. Comments and response report

The practitioner must record all comments received from I&APs and respond to each comment before the Final BAR 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 the Final BAR as **Appendix E3.**

All comments received during the public review period will be included within a Comments and Responses Report within the Final BAR.

5. AUTHORITY PARTICIPATION

Authorities and organs of state identified as key stakeholders:

Authority/Organ of State	Contact person (Title, Name and Surname)	Tel No	Fax No	e-mail	Postal address
Refer to the Stakeholder Database in Appendix E5.					

- Department of Environmental Affairs
- Eastern Cape - Department of Economic Development, Environment Affairs and Tourism
- Eastern Cape Department of Roads and Public Works
- Eastern Cape Heritage Resources Authority
- South African Heritage Resources Agency (SAHRA)
- Eastern Cape Heritage Resource Agency
- Sundays River Valley Local Municipality
- Cacadu District Municipality
- SANRAL
- Eskom
- Department of Energy
- Department of Water Affairs
- Civil Aviation Authority

Include proof that the Authorities and Organs of State received written notification of the proposed activities as **Appendix E4**.

In the case of renewable energy projects, Eskom and the SKA Project Office must be included in the list of Organs of State.

6. CONSULTATION WITH OTHER STAKEHOLDERS

Note that, for any activities (linear or other) 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. Application for any deviation from the regulations relating to the public participation process must be submitted prior to the commencement of the public participation process.

A list of registered I&APs is included as **Appendix E5**.

Copies of any correspondence and minutes of any meetings held must be included in **Appendix E6**.

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. 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

Provide a summary and anticipated significance of the potential direct, indirect and cumulative impacts 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. This impact assessment must be applied to all the identified alternatives to the activities identified in Section A (2) of this report.

A summary and anticipated significance of the potential direct, indirect and cumulative impacts that are likely to occur as a result of the planning and design phase, construction phase, operational phase and decommissioning phases of the proposed Son Sitrus Rooftop Solar Energy Installation is provided in the table below.

Activity	Impact summary	Significance	Proposed mitigation
PLANNING AND DESIGN			
No impacts are anticipated during the Planning and Design.			
CONSTRUCTION PHASE			
Construction of PV facility and associated infrastructure.	***Direct Impacts:*** ***<u>Visual</u>*** * Potential visual impact on sensitive receptors.	Low due to existing infrastructure (i.e. the Son Sitrus Packaging	* None required

Activity	Impact summary	Significance	Proposed mitigation
		Facility).	
	Social * Influx of construction workers employed on the project and job seekers; * Impact of heavy vehicles, including damage to roads, * Safety, noise and dust (minimal dust generation is anticipated) impacts; * Job creation	Low to moderate due scale of proposed infrastructure	* The movement of construction workers on and off the site should be closely managed and monitored by the contractors. * Incoming and outgoing vehicles should be monitored to control traffic * Use dust suppressant measures in all access roads throughout the construction phase * Employ local staff, as far as possible. * Attempt to provide skills development/ training for local employees.
	Indirect Impacts: * None	None	None required
	Cumulative Impacts: * The overall cumulative impacts on visual and social will be low considering the proposed solar energy installation and other proposed developments in the area.	Low	None required
OPERATIONAL PHASE			
Operation of PV facility and associated infrastructure.	***Direct Impacts:*** ***Visual*** * The visual impact on sensitive receptors.	Low due to the existing infrastructure present on site (i.e. the Son Sitrus Packaging).	* On-going maintenance of the facility to minimise the potential for visual impacts.
	Social * Job creation.	Low	* Employ local staff, as far as possible. * Attempt to provide skills development/ training for local employees.

Activity	Impact summary	Significance	Proposed mitigation
No-go option			
If the project does not proceed, there will still be a need for alternative energy projects to supplement the current power requirements of the country. The site will remain unchanged and there will be no opportunities for temporary and permanent employment created through this project. The no-go option is therefore not preferred.			
Impacts on the social environment	***Direct impacts:*** **Lost opportunity for renewable energy** The no-development option would result in the lost opportunity for South Africa to supplement its current energy needs with clean, renewable energy. **Impact on local community** The No-Development option would also result in the loss of the benefits to the local community and economy associated with the project development and creation of employment opportunities	Low	Implementation of the project would enable the solar facility to connect the solar energy facility to the electricity grid.
	Indirect impacts: Continued impacts on climate change due to use of conventional power generation sources to meet the electricity demand in the country	Low	* None required
	Cumulative impacts: None	N/A	N/A

A complete impact assessment in terms of Regulation 22(2)(i) of GN R.543 must be included as **Appendix F**.

2. 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)

The Son Sitrus Rooftop Solar Energy Installation **will have minimal environmental impacts** due to its location on the roof of an existing building**.** The following conclusions have been made from this Basic Assessment process:

» **Visual Impact**: It is not expected that the proposed infrastructure will significantly alter the existing visual impacts associated with the Son Sitrus building. Visual impacts of the proposed development will be of a **low significance**. The potential visual impacts associated with the proposed development should therefore not influence the outcome of the project decision-making.
» **Social:** the proposed Son Sitrus Rooftop Solar Energy Installation will have a positive impact on the social environment through the creation of employment and transfer of skills to the local people.
» **Cumulative impacts:** the cumulative impacts on visual will be very low considering the existing infrastructure (i.e. Son Sitrus Package Facility) on the site.

Through the implementation of the EMPr (refer Appendix G), it is expected that impacts associated with the construction and operation of the proposed Son Sitrus Rooftop Solar Energy installation will be low and can be further mitigated to acceptable levels.

It is the conclusion of the Environmental Assessment Practitioner that the establishment of the Son Sitrus Rooftop Solar Energy Installation is considered acceptable from an environmental perspective provided the recommended mitigation measures are implemented.

Alternative B

Alternative C

No-go alternative (compulsory)

If the project does not proceed, there will still be a need for alternative energy projects

to supplement the current power requirements of the country. The site will remain unchanged and there will be no opportunities for temporary and permanent employment created through this project. The no-go option 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 √**

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.

There are no significant environmental or social constraints identified through this Basic Assessment process that would prevent the establishment of the proposed Son Sitrus Rooftop Solar Energy Installation. The construction of the proposed Son Sitrus Rooftop Solar Energy Installation should be implemented according to the EMPr (to adequately mitigate and manage potential impacts associated with construction activities), the Environmental Authorisation (once issued) and all other relevant environmental legislation. Relevant conditions to be adhered to include:

Mitigation - Design, Construction, and Decommissioning Phases:

» All relevant practical and reasonable mitigation measures detailed within this report must be implemented.
» The draft Environmental Management Programme (EMPr) as contained within Appendix G of this report should form part of the contract with the Contractors appointed to construct and maintain the proposed solar energy facility, and will be used to ensure compliance with environmental specifications and management measures. The implementation of this EMPr for all life cycle phases of the proposed project is considered to be key in achieving the appropriate environmental management standards as detailed for this project.
» Reduce and control construction dust through the use of approved dust suppression techniques as and when required (i.e. whenever dust pollution becomes apparent).
» Train and make use of local labour as far as possible.

Mitigation - Operation Phase:

The mitigation and management measures previously listed in this Basic Assessment Report and Environmental Management Programme should be implemented in order to minimise potential environmental impacts. The following mitigation measures should also be implemented:

» On-going maintenance of the facility to minimise the potential for visual impacts.

» Training, skills development and the use of local labour.

Is an EMPr attached? **YES☐** [redacted]

The EMPr must be attached as **Appendix G.**

The details of the EAP who compiled the BAR and the expertise of the EAP to perform the Basic Assessment process must be included as **Appendix H**.

If any specialist reports were used during the compilation of this BAR, please attach the declaration of interest for each specialist in **Appendix I**.

Any other information relevant to this application and not previously included must be attached in **Appendix J**.

_____

NAME OF EAP

_____ _____

SIGNATURE OF EAP DATE

SECTION F: APPENDICES

The following appendixes must be attached:

Appendix A: Site Plan(s)

Appendix B: Photographic Record

Appendix C: Facility Illustration(s)

Appendix D: Specialist Report(s)

Appendix E: Record of Public Involvement Process
- *Appendix E1: Site notices, adverts, BIDs & Reply Forms*
- *Appendix E2: Key stakeholders correspondence*
- *Appendix E3: Comment and Responses Report*
- *Appendix E4: Authority & Organs of State correspondence*
- *Appendix E5: Stakeholder Database*
- *Appendix E6: Minutes of the Focus Group Meeting*

Appendix F: Impact Assessment

Appendix G: Environmental Management Programme (EMPr)

Appendix H: Details of EAP and expertise (CV's)

Appendix I: Specialist's declaration of interest

Appendix J Other additional information