BASIC ASSESSMENT (BA) FOR THE PROPOSED CONSTRUCTION OF A 19MW PHOTOVOLTAIC (PV) POWER PLANT ON THE REMAINDER OF FARM 267 NEAR ARRIESFONTEIN, NORTHERN CAPE PROVINCE

(DEA Ref No: 14/12/16/3/3/1/428)

(NEAS Ref No: DEA/EIA/0000922/2012)

INTRODUCTION

SolarReserve South Africa (Pty) Ltd (SolarReserve) is proposing the construction of a 19MW PV Plant on the remainder of farm 267 near Arriesfontein, Northern Cape Province. SolarReserve has appointed SiVEST, as the independent environmental consultants, to undertake the required Basic Assessment process for the above-mentioned proposed project.

In terms of the Environmental Impact Assessment (EIA) Regulations (August 2010) promulgated under Sections 24 and 24D of the National Environmental Management Act (Act No. 107 of 1998) (NEMA), various aspects of the intended development are considered listed activities which may have an impact on the environment and therefore require authorisation from the National Department of Environmental Affairs (DEA) prior to the commencement of such activities.

PURPOSE OF THIS DOCUMENT

The purpose of this Background Information Document (BID) is to inform interested and/or affected parties (I&APs) about the Basic Assessment (BA) that is being conducted for the proposed development.

In addition to supplying information about the proposed project and the BA process, this BID will also provide I&APs with the opportunity to:

- better understand the proposed project in order to provide comments and raise issues of concern;
- understand the environmental authorisation process in order to participate effectively;
- raise issues of concern and/or submit suggestions to enhance the proposed project;
- contribute local knowledge; and
- comment on the specialist studies that will be conducted.

BACKGROUND TO THE PROPOSED PROJECT

Factors such as increased economic growth and social development, rapid community development advancement among others have lead to the growth in demand for electricity in Southern Africa. By 2007, the electricity demand in South Africa had been growing at approximately 3% a year thus increasing pressure on South Africa's existing power generation capacity.

As one of its strategies to meet future energy consumption requirements, the country is opting for the use of renewable energy technologies such as Photovoltaic (PV) Plants. This technology is therefore fast becoming an important energy option in South Africa. As a result, SolarReserve plan to establish a Photovoltaic (PV) plant on the remainder of farm 267 near Arriesfontein, in the Northern Cape Province.

The objective of the project is to generate electricity to feed into Eskom's national electricity grid by means of the construction of a 19MW solar PV Plant and associated infrastructure.

PROJECT INFORMATION

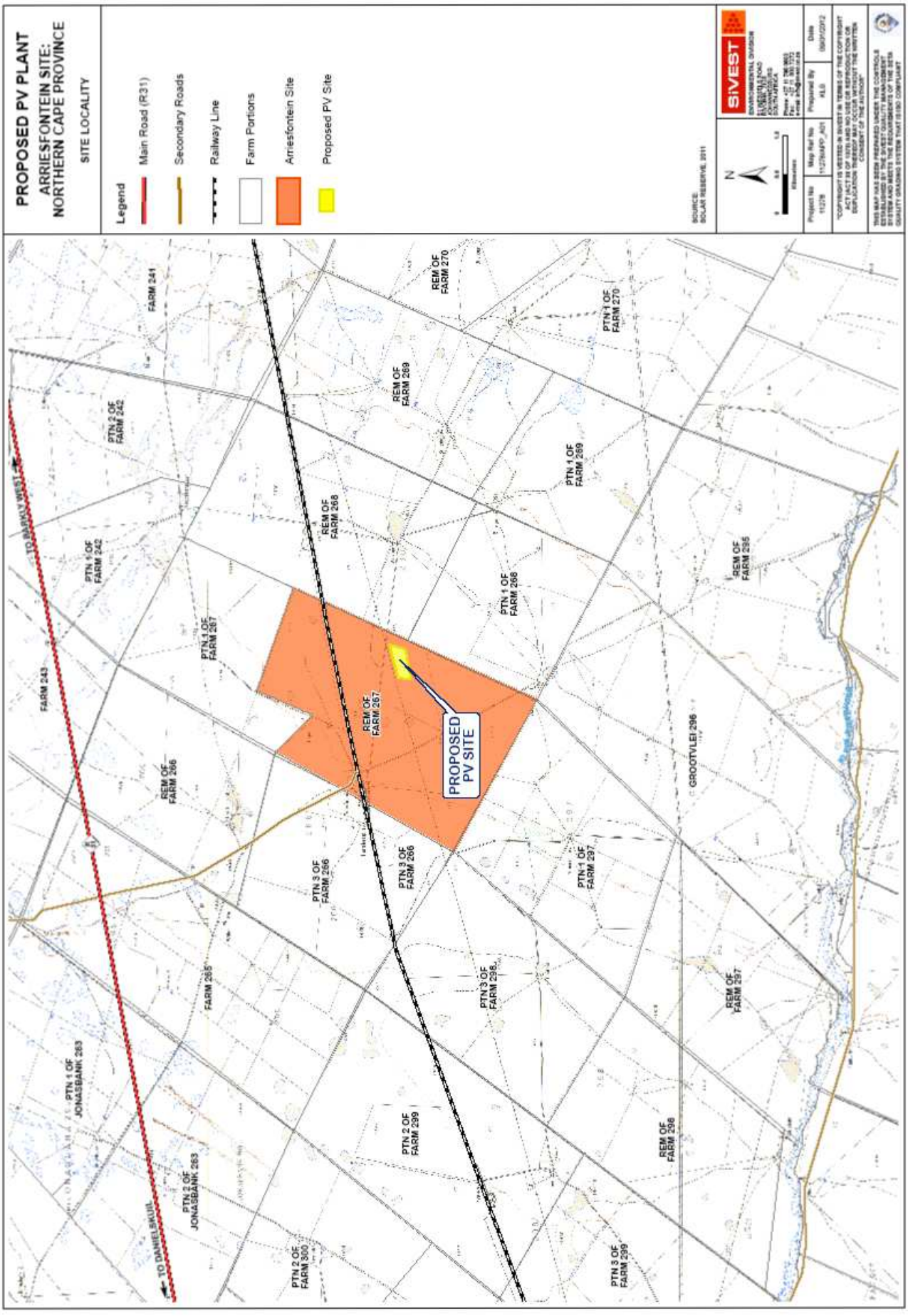
The proposed project is to consist of:

- the proposed construction of a 19MW photovoltaic power plant on the remainder of farm 267 near Arriesfontein.
- the establishment of associated infrastructure as required.

Location of the proposed PV power plant

The study area is located on the remainder of Farm 267, near Arriesfontein, about 30km to the east of the mining town of Lime Acres in the Northern Cape Province (Figure 1). The proposed development site is situated within the Tsantsabane Local Municipality which forms part of the Siyanda District Municipality.

Figure 1: Regional Locality Map



PV power plant key components and associated infrastructure:

The key components of the proposed solar power facility include the following:

- PV solar Panels and arrays;
- PV Panel mountings;
- DC-AC current inverters and transformers; and
- Underground cabling / overhead power lines.

The PV panels that are proposed to be used typically measure up to 6 m² in size per panel. The PV panels will be arranged in rows (arrays) and made up of approximately 100 m sections depending on the optimal final design and layout of the development. The PV panels will be mounted on metal frames with a maximum height of approximately 3 m above the ground, supported by rammed, concrete or screw pile foundations, and they will face north in order to capture the optimum amount of sunlight.

Additional associated infrastructure that is likely to be required for the project includes the following:

one or more meteorological stations to collect data on the solar resource;

- a small site office and storage facility, including security and associated facilities;
- visitor centre;
- security system- closed circuit video-surveillance system;
- site fencing;
- car park;
- temporary construction camp (to house up to 300 people); and
- a lay-down area for the temporary storage of materials during the construction activities.

The above key components may be subject to change throughout the BA process based on environmental constraints.

Proposed site alternatives for the PV power plant

In terms of the NEMA and the EIA Regulations, feasible alternatives are required to be considered during the EIA Process. All identified, feasible alternatives are required to be evaluated in terms of social, biophysical, economic and technical factors. The following alternatives will be considered for the project:

- Site Layout Alternatives;
- Technology Alternatives; and
- No-go Alternative.

How does a PV plant work?

Typically, PV plants use semi-conductor materials to convert sunlight directly into electricity (Figure 2). The solar panels can be fixed or they can be installed to track the sun.

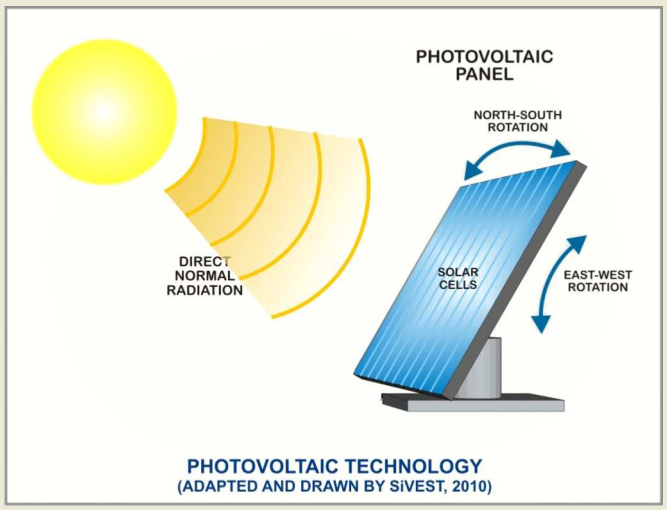


Figure 2: Conceptual illustration of a typical PV panel

The solar panels are generally configured in banks of arrays or sub-arrays depending on the number of PV panels used and the size of the arrays (Figure 3). The rows of PV panels are spaced both to allow access to vehicles during maintenance and to ensure that one array or one sub-array does not cast a shadow over the one behind. The electricity is cabled to inverters, which convert DC power to AC and synchronised to the electricity grid. The output is connected through various switchgear, protection devices and meters to local users and the grid. The inverters, switchgear and other electrical equipment are standard items as used for a wide range of industrial applications. The other major operating component of the system is the inverter, which converts the DC power produced by the solar modules into AC power before being sent to the grid.

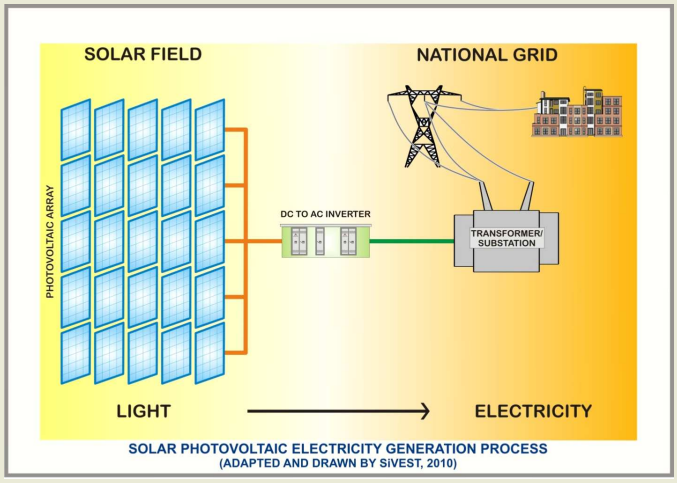


Figure 3: Conceptual illustration of the electricity generation process.

PROPOSED CONSTRUCTION SCHEDULE AND METHODOLOGY FOR CONSTRUCTING THE PV POWER PLANT

Timeframe

Depending on the issuing date of the Environmental Authorisation (EA), should it be granted by Department of Environmental Affairs (DEA), it is proposed that SolarReserve South Africa (Pty) Ltd will commence construction in August 2013. The construction period for the proposed PV plant is estimated to be 8-12 months in total.

Employment opportunities during construction

SolarReserve will appoint a contractor for the construction of the proposed PV power plant and should any local labour be required, the appointed contractor will source the labour through established structures, such as the Local Municipality.

PV plant construction: As the construction of the PV plant mainly requires the utilisation of specialised machinery and highly skilled personnel, it is not envisaged that additional labour will be required for this proposed project.

WHY USE SOLAR ENERGY?

The advantages of using renewable energy:

- it is one of the lowest cost producer of electricity from solar power;
- it has the capability of delivering Megawatts - scale grid power;
- there are limited macro-scale environmental impacts; and
- it is clean energy with limited waste production compared to other energy generators.

BASIC ASSESSMENT PROCESS

What is a Basic Assessment?

A Basic Assessment (BA) is a process of collecting, organising, analysing, interpreting and communicating information that is relevant for the consideration of a particular application. BAs are undertaken where the impacts are less likely to have significant impacts on the receiving environment.

BAs are used by planning authorities/developers to obtain an independent and objective view of the potential environmental (biophysical and social) impacts that could arise during the construction and operation of the proposed development. This information needs to provide the Competent Authority with a sound basis for their decision-making. Environmental management and mitigation measures are also identified through the BA process.

National Environmental Management Act (NEMA)

The Basic Assessment process, as presented in Figure 3, will be conducted in accordance with the Environmental Impact Assessment (EIA) Regulations 2010 promulgated in terms of Sections 24 (5) read with section 44 of the National Environmental Management Act (No. 107 of 1998) (NEMA), as amended, in Government Notice (GN) No. R543.

The proposed project triggers activities in terms of Government Notice (GN) No. 544 (18 June 2010): Listing Notice 1:

R. 544 (18 June 2010)	1	*The construction of facilities or infrastructure for the generation of electricity where:* *the electricity output is more than 10 megawatts but less than 20 megawatts*
R. 544 (18 June 2010)	10	*The construction of facilities or infrastructure for the transmission and distribution of electricity –* *Outside urban areas or industrial complexes with a capacity of more than 33 but less than 275 kilovolts; or*
R. 544 (18 June 2010)	22	*The construction of a road, outside urban areas,* *(i) with a reserve wider than 13,5 meters or,* *(ii) where no reserve exists where the road is wider than 8 metres, or* *for which an environmental authorisation was obtained for the route determination in terms of activity 5 in Government Notice 387 of 2006 or activity 18 in Notice 545 of 2010.*
R. 544 (18 June 2010)	23	*The transformation of undeveloped, vacant or derelict land to –* *(i) residential, retail, commercial, recreational, industrial or institutional use, outside an urban area and where the total area to be transformed is bigger than 1 hectare but less than 20 hectares; -* *except where such transformation takes place for linear activities*
R. 546 (18 June 2010)	4	*The construction of a road wider than 4 metres with a reserve less than 13,5 metres.* *(ii) Outside urban areas, in:* *(cc) Sensitive areas as identified in an environmental management framework as contemplated in Chapter 5 of the Act and as adopted by the competent authority;* *(ee) Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans.*
R. 544 (18 June 2010)	12	*The clearance of an area of 300 square metres or more of vegetation where 75% or more of the vegetative cover constitutes indigenous vegetation.* *Within critical biodiversity areas identified in bioregional plans;*
R. 546 (18 June 2010)	13	*The clearance of an area of 1hectare or more of vegetation where 75% or more of the vegetative cover constitutes vegetation, except where such removal of vegetation is required for:* *(1) The undertaking of a process or activity included in the list of waste management activities published in terms of section 19 of the National Environmental Management: Waste Act, 2008 (Act no 59 of 2008) in which case the activity is regarded to be excluded from this list.* *(a) Critical biodiversity areas and ecological support areas as identified in the systematic biodiversity plans adopted by the competent authority.* *(b) In Eastern Cape, Free State, KwaZulu Natal, Limpopo, Mpumalanga, Northern Cape and Western Cape:* *(ii) Outside urban areas, in:* *cc) Sensitive areas as identified in an environmental management framework as contemplated in Chapter 5 of the Act and as adopted by the competent authority;*

The Basic Assessment Process to be followed is illustrated in Figure 4 below:

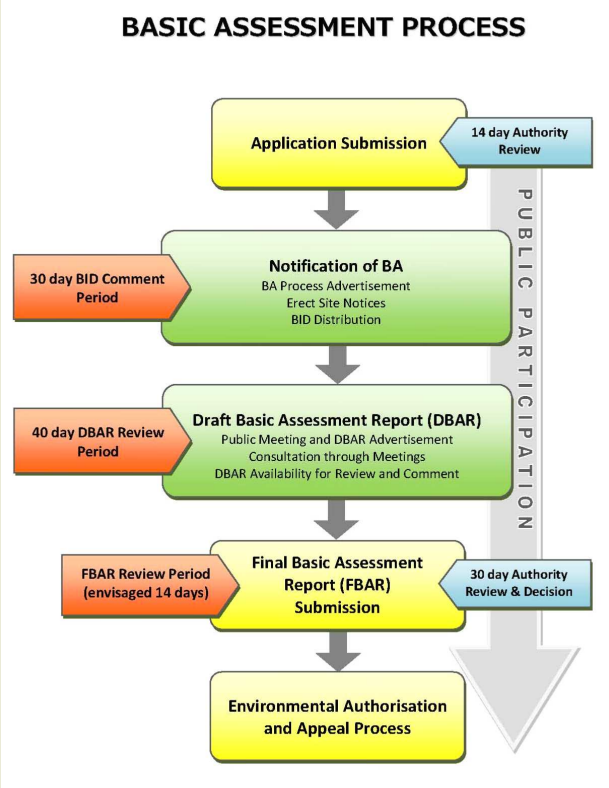


Figure 4: Basic Assessment Process Diagram

Competent Authority

The Competent Authority, as described according to the EIA Regulations, for this proposed project is the National Department of Environmental Affairs (DEA).

Environmental issues to be investigated during the BA

SPECIALIST STUDY	SPECIALIST UNDERTAKING THE STUDY
Soil and Agricultural Potential	Agriculture Research Council – Institute for Soil, Climate & Wate
Ecological and protected tree survey	Bathusi Environmental Consulting
Avi-fauna assessment	Endangered Wildlife Trust
Noise impact assessment	Jongens Keet and Associates
Heritage impact assessment	PGS Heritage & Grave Relocation Consultants
Geohydrological impact assessment	SRK Consulting (South Africa) (Pty) Ltd
Socio-economics	Urban-Econ: Development Economists
Wetland impact assessment	Wetland Consulting Services (Pty) Ltd
Sensitivity mapping	MetroGIS (Pty) Ltd
Air Quality	Airshed
Hydrology	KnightPiesold
Tourism	Grant Thornton

The Public Participation Process

Public participation is the cornerstone of any BA, as it will be for this proposed project. The key objective of public participation during this BA will be to provide I&APs with sufficient and relevant information and to conduct a transparent consultation process to ensure effective participation throughout the BA process. As part of this public participation process you will also be provided with the opportunity to comment on the findings of the Draft Basic Assessment Report (DBAR) and the Final BAR (FBAR), which will be made available on SiVEST's website (www.sivest.co.za).

It is important that relevant I&APs and Stakeholders are identified and involved in the public participation process from the outset of the proposed project. You will receive personal notification by SA Postal Services, e-mail and/or sms of all documents available for comment, and due dates for comment at every stage.

Your responsibilities as an I&AP:

In terms of the EIA Regulations, your responsibilities as an I&AP are to:

- register yourself on the project database in order to participate in this BA process;
- inform any other parties (neighbours, friends, colleagues, etc) who may be interested and/or affected by the proposed project about the BA process and encourage them to become involved; and
- ensure that any comments regarding the proposed project are submitted within the timeframes that have been approved or set by the DEA, or within any extension of a timeframe agreed to by the DEA and the applicant, Eskom.

Our responsibilities as Independent Environmental Consultants:

In terms of the EIA Regulations, our responsibilities in the public consultation process include:

providing sufficient information regarding this proposed project to I&APs, either through the BID or providing information as and when requested;

- ensuring that I&APs are provided with an understanding of the proposed project to be able to comment and submit concerns informatively;
- undertaking the following actions upon receiving any comments/queries/issues:
    a. entered the I&APs contact details into the project database to ensure all further information releases are sent to them;
    b. responding in writing to all queries or comments;
    c. recording all comments/queries/issues received telephonically;
    d. providing responses (as soon as possible) to all questions that we are unable to answer immediately.

How to become involved

- Respond (by post, phone, fax or e-mail) to our invitation for your participation, which has been advertised in the printed media.
- Post, fax or e-mail the attached Registration and Comment Form to SiVEST.
- Attend the meetings to be held during the course of the project. Should you register as an I&AP you will automatically be invited to attend these meetings. The public meeting / public open day date will also be advertised in the printed media. Please be on the lookout for these advertisements.
- Contact us telephonically should you have a query, comment or require further project information.
- Review the draft Basic Assessment Report within the review periods that will be stipulated in the advertisement and as well as in a personalised letter to be sent to you.

If you consider yourself an I&AP for this proposed project, we urge you to make use of the opportunities created by the public participation process to become actively involved in the process and provide comment or concerns which affect and/or interest you, or about which you would like more information. Your input into

this process forms a key part of the environmental studies and we would like to hear from you to obtain your views on the proposed project.

By completing and submitting the accompanying Registration and Comment Form, you automatically register yourself as an I&AP for this proposed project, ensuring that your comments and/or concerns raised regarding the proposed project will be noted. The public participation consultants will respond to all comments and queries received during the course of the project.

Please be informed that all relevant public documents can be downloaded from the SiVEST's website (www.sivest.co.za).

We look forward to your contributions

Contact: Nicolene Venter or Mabel Qinisile
PO Box 2921, RIVONIA, 2128
Phone: (012) 662 2843 or (011) 798 0600 or (083) 377 9112
E-mail: sivest_ppp@sivest.co.za or iafrica@icon.co.za
Fax: (011) 803 7272

LIST OF ACRONYMS

BA	Basic Assessment
BID	Background Information Document
DEA	National Department of Environmental Affairs
DBAR	Draft Basic Assessment Report
EA	Environmental Authorisation
EIA	Environmental Impact Assessment
CEMPr	Construction Environmental Management Programme
FBAR	Final Basic Assessment Report
GN	Government Notice
I&AP	Interested and/or Affected Party
PV	Photovoltaic
NEMA	National Environmental Management Act, 1998 (Act No. 107 of 1998)
OHS	Occupational Health and Safety