

NOVEMBER 2010

BACKGROUND INFORMATION DOCUMENT

PROPOSED ESTABLISHMENT OF THE
ILANGA SOLAR THERMAL POWER PLANT
AS PART OF THE FUTURE
KAROSHOEK SOLAR THERMAL PARK

NORTHERN CAPE

ENVIRONMENTAL IMPACT ASSESSMENT PROCESS



Ilangalethu Solar Power (Pty) Ltd is proposing to establish a commercial solar thermal plant, located approximately 30 km east of Upington. The proposed project will be referred to as Project Ilanga and will have maximum generating capacity of 125 MW. It will be sited on one of several farm portions identified for the future proposed Karoshoek Solar Valley Site, and will ultimately form part of that larger facility which will have a maximum generating capacity of 1 GW.

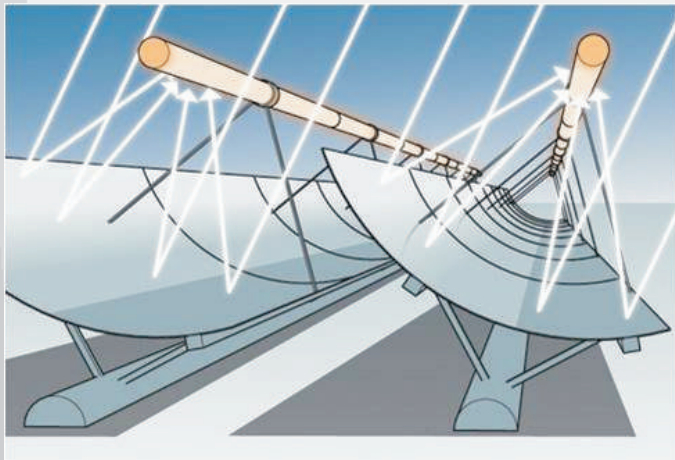
PURPOSE OF A BACKGROUND INFORMATION DOCUMENT

This document aims to provide you, as an interested and/or affected party (I&AP), with:

- » An overview of the proposed solar thermal power plant
- » An overview of the Environmental Impact Assessment (EIA) process and specialist studies being undertaken to assess the potential impacts (i.e. positive and negative; as well as direct, indirect, and cumulative) of the proposed project
- » Details of how you can become involved in the EIA and public participation process, receive information, or raise issues, which may concern and/or interest you

SOLAR ENERGY AND THE GENERATION OF ELECTRICITY

Solar thermal power plants, particularly concentrating solar plants, concentrate the heat of the sun and in turn use this heat to generate steam for use in a conventional heat exchanger system; steam turbine and generator. Parabolic troughs consist of cylindrical reflectors which focus the solar radiation onto a heat collection element which is held at a focal point). Each trough will be mounted onto a tracking system which will allow for maximum generation capacity as the sun's trajectory changes on a daily and seasonal basis. The collected energy in the heat transfer fluid is used to generate steam through a conventional heat exchanger system that is in turn used for electricity generation in a conventional steam turbine and generator.





DESCRIPTION OF THE PROPOSED SOLAR THERMAL PLANT

The facility is proposed on the following farm portions: Portion 0 of Karos 959; Portion 3 of Annashoek 41; Portion 2 of Matjiesrivier 41/2; and Portion 0 of Zandemm 944. The collective site which covers an extent of approximately 20,000 ha is preferred based on several key factors required for establishing a solar thermal power plant i.e. climatic conditions; extent of the site; orographic conditions, proximity to a reliable water source; proximity to a logistics supply centre (i.e. Upington) and the availability of a grid connection.

The facility will generate electricity using parabolic troughs, the solar thermal power plant conceptual design options under investigation include:

- » Solar only option which will operate during daylight hours
- » Solar option with a hybrid heat source which will allow for a longer operational period beyond daylight hours (i.e. a boiler which will be used in parallel to the parabolic troughs)
- » Solar option with a storage option utilising thermal storage which will allow for a longer operational period beyond daylight hours

The following associated infrastructure will also be required:

- » A power block which will consist of a conventional steam turbine linked to a generator and a substation
- » A water access point (i.e. to be established on the Orange River or at the Farm Annashoek which has existing water use rights); associated water supply pipelines; water treatment and storage reservoirs and evaporation ponds
- » Power line(s) which will connect either to the future Nieuwehoop substation or a direct connection into the Garona Substation or a connection preferred by Eskom
- » Internal and external access roads
- » Accommodation facilities; storerooms

- » Temporary waste storage facilities may be required

The construction of a facility of this nature is expected to take approximately 2 - 3 years.

ENVIRONMENTAL IMPACT ASSESSMENT PROCESS

In terms of the EIA Regulations published in terms of Section 24(5) of the National Environmental Management Act (NEMA, Act No. 107 of 1998), Ilangaletu Solar Power (Pty) Ltd requires authorisation from the National Department of Environmental Affairs (DEA) (in consultation with the Northern Cape Department of Agriculture and Nature Conservation), for the undertaking of the proposed solar thermal plant. In terms of sections 24 and 24D of NEMA, as read with the EIA Regulations of GNR544; GNR545; and GNR546, a Scoping and an EIA Phase are required to be undertaken for the proposed project.

In order to obtain authorisation, comprehensive, independent environmental studies must be undertaken in accordance with the EIA Regulations. This project has been registered with the National DEA under application reference number 12/12/20/2056.

An EIA is an effective planning and decision-making tool. It allows for the identification of potential environmental consequences resulting from a proposed activity. Furthermore it allows these impacts to be appropriately managed during a project's construction and operation. An EIA provides the opportunity for dialogue with I&APs.

Ilangaletu Solar Power (Pty) Ltd has appointed Savannah Environmental, as the independent environmental consultants, to undertake the required EIA process to identify and assess potential environmental impacts associated with the proposed project, and propose appropriate mitigation and management measures as part of an Environmental Management Plan. As part of these environmental studies, I&APs will be actively involved through the public involvement process.

The EIA process is comprised of the following 4 primary phases:



WHAT POTENTIAL IMPACTS ARE ASSOCIATED WITH THE PROPOSED SOLAR THERMAL PLANT?

Although a solar facility utilises a renewable resource to generate electricity, the construction and operation of the proposed facility has the potential to impact on the environment in both a positive and negative manner, both directly and indirectly. A number of potential environmental impacts, both positive and negative, associated with the proposed solar facility have been identified. These potential impacts will be assessed through the following specialist studies:

Ecology, fauna, and flora: the construction of the facility and the associated disturbance of vegetation may affect the ecology and biodiversity of the site.

Geology and soil erosion: the construction of the facility may affect the underlying geology in terms of soil degradation and/or erosion.

Agricultural potential: solar facilities typically result in whole scale disturbance of a site (i.e. the vegetation underneath the parabolic troughs will need to be cleared).

Heritage sites and palaeontology: disturbance to or destruction of heritage sites and fossils may result during the construction phase through excavation activities.

Water resources: the abstraction and use of water in the generation process may result in impacts in terms of quantity and quality of water as well as potential impacts on the riparian environment of the Orange River.

Visual aesthetics: the establishment of an industrial facility of this nature has the potential affect the visual aesthetics within the area.

Noise: sensitive noise receptors may be affected during the construction phase and during the operational phase (i.e. due to the operation of the steam turbine and generator)

Social: the construction and operation of the facility may result in positive socio-economic opportunities in terms of local employment as well as negative impacts in terms of safety and security and land use characteristics.

These specialist studies will be undertaken in two phases as follows:

- » The Scoping Phase, where potential issues associated with the proposed project will be identified as part of a desktop study. Areas of sensitivity within the broader site will be identified and delineated in order to identify an appropriate portion of the site for the proposed development. The outcome of this phase will be a Plan of Study for the EIA Phase

- » The EIA Phase, which involves a detailed assessment of potentially significant impacts identified in the Scoping Phase. Practical and achievable mitigation and management measures will be recommended within the Draft Environmental Management Plan.

Specialist studies will be guided by existing information, field observations and input from the public participation process. As an I&AP, your input is considered an important part of this process, and we urge you to become involved.

PUBLIC INVOLVEMENT PROCESS



The sharing of information forms the basis of the public involvement process and offers you the opportunity to become actively involved in the EIA from the outset. Comments and inputs from I&APs during the EIA process are encouraged in order to ensure that potential impacts are considered within the ambit of the study.

The public involvement process aims to ensure that:

- » Information that contains all the relevant facts in respect of the application is made available to I&APs for review.
- » I&AP participation is facilitated in such a manner that they are provided with a reasonable opportunity to comment on the proposed project.
- » Adequate review periods are provided for I&APs to comment on the findings of the Draft Scoping and EIA Reports.

In order to ensure effective participation, the public involvement process includes the following 4 phases:

- » Notification Phase: advertisements, site notices, Background Information Document, Stakeholder Letters, I&AP Database
- » Scoping Phase: ongoing stakeholder consultation, public meetings and focus group meetings, review of the draft Scoping Report
- » EIA Phase: ongoing stakeholder consultation, public meetings and focus group meetings, review of the draft EIA Report
- » Decision Making Phase: Notification of the Environmental Authorisation and the Appeal Process

YOUR RESPONSIBILITIES AS AN I&AP



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

- » In order to participate in this EIA process, you must register yourself on the project database.
- » You must ensure that any comments regarding the proposed project are submitted within the stipulated timeframes.

- » You are required to disclose any direct business, financial, personal or other interest which that you may have in the approval or refusal of the application for the proposed solar facility.

HOW TO BECOME INVOLVED

1. By responding (via phone, fax, or e-mail) to our invitation for your involvement which has been advertised in local and/or national newspapers
2. By returning the attached Reply Form to the relevant contact person
3. By attending the meetings to be held during the course of the project - as a registered I&AP you will be invited to attend these meetings.
4. Dates for public meetings will also be advertised in local and/or regional newspapers
5. By contacting the consultants with queries or comments
6. By reviewing and commenting on the Draft Scoping and EIA Reports within the stipulated 30-day review periods

If you consider yourself an I&AP for this proposed project, we urge you to make use of the opportunities created by the public involvement process to provide comment, or raise those issues and concerns which affect and/or interest you, and about which you would like more information. Your input into this process forms a key element of the EIA process.

By completing and submitting the accompanying reply form, you automatically register yourself as an I&AP for this project, and are ensured that your comments, concerns or queries raised regarding the project will be noted.

COMMENTS AND QUERIES

Direct all comments, queries or responses to:

Alicia Govender or Tammy Kruger
PO Box 148, Sunninghill, Johannesburg, 2157
Phone: 011 234 6621
Fax: 086 684 0547
E-mail: alicia@savannahsa.com / tammy@savannahsa.com

To view project documentation, visit

www.savannahSA.com

Karshoek Solar Valley Site

Locality Map

Legend

- National Road
- Secondary Road
- Railway Line
- Perennial River
- Non-perennial River
- Power Line
- Substation
- Farm Portion

