

APRIL 2016

ENVIRONMENTAL IMPACT ASSESSMENT PROCESS



CONSTRUCTION OF THE 150MW NOUPOORT CONCENTRATED SOLAR POWER (CSP) PROJECT NORTHERN CAPE PROVINCE

BACKGROUND INFORMATION DOCUMENT



CRESCO Energy (Pty) Ltd proposes the construction of a Concentrated Solar Power (CSP) Project and associated infrastructure (known as the Noupoort CSP Project) on the Remaining Extent of the Farm 207, Portion 1 and Portion 4 of Farm Carolus Poort 167, situated approximately 4 km north west of Noupoort. The proposed site falls within the jurisdiction of the Umsobomvu Local Municipality and within the greater Pixley ka Seme District Municipality in the Northern Cape Province. The contracted capacity of the Noupoort CSP Project will be up to 150MW with a development footprint of approximately 900 ha in extent.

The purpose of the proposed Noupoort CSP Project will be to evacuate the generated power into the Eskom electricity grid. The project is proposed to be bid in the Department of Energy's (DoE) Renewable Energy Independent Power Producer Procurement (REIPPP) Programme.

AIM OF THIS BACKGROUND INFORMATION DOCUMENT

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

- » An overview of the proposed Noupoort CSP Project.
- » An overview of the EIA process (including a Scoping Phase and an EIA phase) and specialist studies being undertaken to assess the potential impacts, both positive and negative of the proposed project.
- » Details of how you can become involved in the EIA process, receive information, or raise issues, which may concern and/or interest you.

OVERVIEW OF THE PROPOSED PROJECT

The proposed Noupoort CSP Project will utilise parabolic trough technology. The parabolic trough system is comprised of two components: a heat collection system (a solar field comprising rows of parabolic troughs) and an energy centre. The heat from the solar field creates steam from the heat transfer fluid (HTF) in a closed loop system which heats the storage medium in the energy centre. The HTF in a separate closed loop system is then heated, creating steam and releasing it directly into the turbine inlet, which turns the turbine creating electricity. The parabolic trough facility will have a generating capacity of up to 150MW.

Infrastructure associated with the CSP Plant includes:

- » Parabolic trough technology utilising a heat transfer fluid
- » Energy centre
- » Water supply pipeline
- » Water storage tanks
- » Packaged water treatment plant
- » Lined evaporation ponds
- » Workshop and office buildings
- » Access roads and fencing around the development area
- » On-site substation and overhead power line (to connect to the Eskom's electricity grid)
- » Temporary laydown areas.

USE OF CONCENTRATED SOLAR POWER (CSP) TECHNOLOGY AS THE RENEWABLE ENERGY TECHNOLOGY FOR THE PROJECT

Concentrated Solar Power (CSP) parabolic trough technology uses trough-shaped mirrors to reflect and concentrate the sun's direct normal irradiance onto an absorber tube (containing heat transfer fluid) to generate heat, which in turn is used to generate electricity.

The heat collection system is comprised of the solar collector assembly (SCA) which consists of parabolic troughs (i.e. the reflectors) and cylindrical tubes (i.e. the receivers) located in the focal point of the parabolic surface. There are 8 collectors on each SCA. Each SCA tracks the sun on a set of rails, thereby allowing for maximum generation capacity as the sun's trajectory changes on a daily and seasonal basis, while eliminating the need for levelling and minimising habitat destruction (Figure 1).

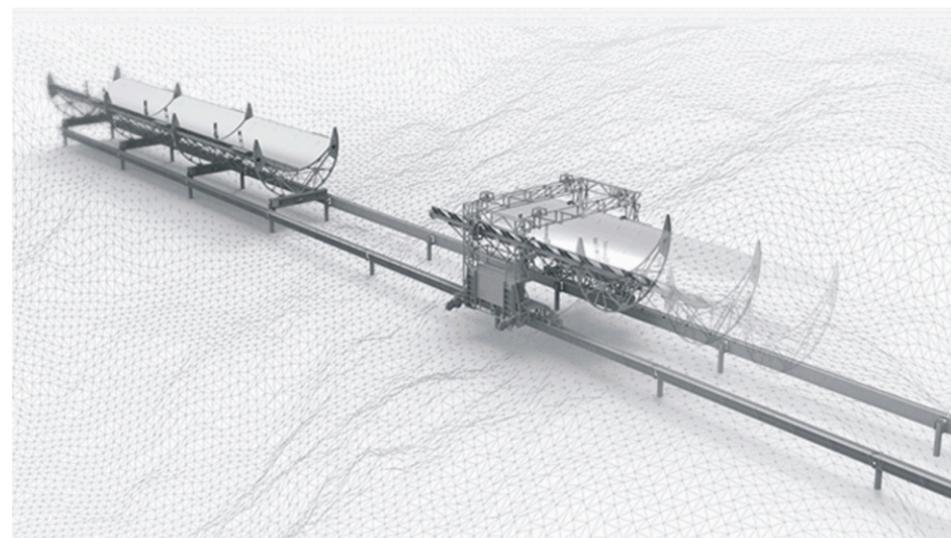


Figure 1: Diagram of the solar collector assembly (SCA) utilised for sun to steam technology, courtesy of Brenmiller Energy

The Energy Centre is built from larger heat exchanger units and consist of tubes for the heat transfer media coming from the solar field. The HTF in a separate closed loop system is then heated, creating steam and releasing it directly into the turbine inlet (refer to Figure 2). The Energy Centre is able to produce steam over a period of 12-18 hours (6 solar hours on average, plus an additional 6 - 12h from storage, depending on Energy Centre discharge rate) throughout a 24 hour period, where the steam may be delivered at any time throughout the 24 hour period on a daily average of 12 hours.



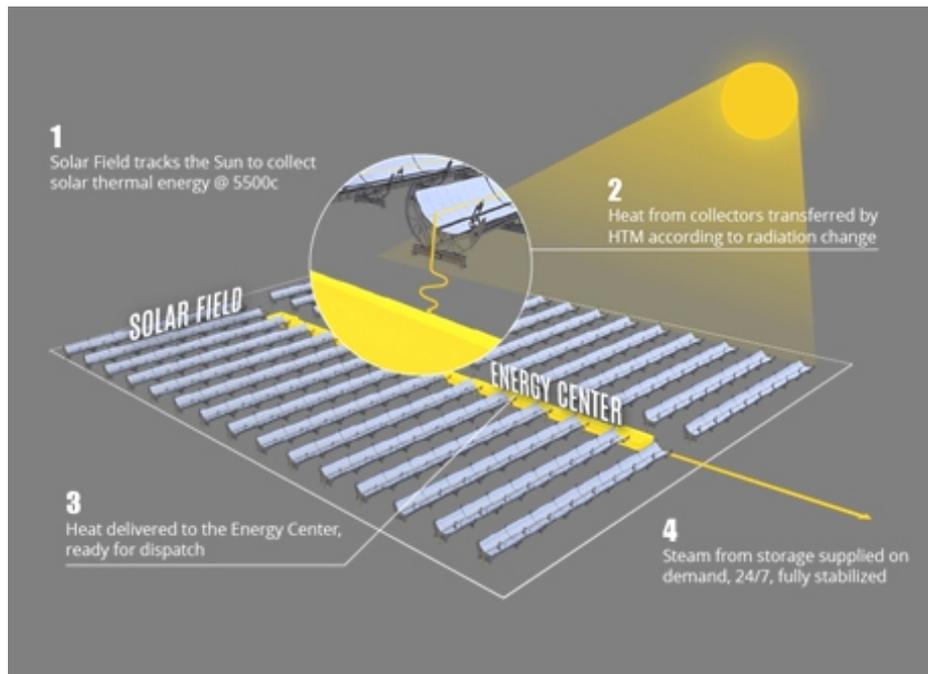


Figure 2: Conceptual illustration of the sun to steam parabolic trough system, courtesy of Brenmiller Energy

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), CRESCO Energy (Pty) Ltd require authorisation from the National Department of Environmental Affairs (DEA) in consultation with the Northern Cape Department of Environment and Nature Conservation (DENC) for the construction and operation of the proposed CSP Facility. In terms of Section 24(5) of NEMA, as read with the EIA Regulations, 2014 of GN R982 to GN R985 a Scoping and EIA Process are required to be undertaken for the proposed project. Therefore, an environmental authorisation process is being undertaken for the project.

An Environmental Impact Assessment is an effective planning and decision-making tool. It allows the potential environmental consequences resulting from a proposed activity to be identified and appropriately managed during its establishment and its operation. It provides the opportunity for the applicant to be fore-warned of potential environmental issues, and allows for resolution of the issue(s) reported on in the EIA as well as dialogue with I&APs.

In order to obtain authorisation for the project, comprehensive and independent environmental studies must be undertaken in accordance with the EIA Regulations of December 2014. CRESCO Energy (Pty) Ltd has appointed **Savannah Environmental** as the independent environmental consultant to undertake the required Scoping and EIA processes to identify and assess all the potential environmental

impacts associated with the proposed project, and to propose appropriate mitigation and management measures in an Environmental Management Programme (EMPr). As part of these environmental studies, I&APs will be actively involved through the public participation process also being undertaken by Savannah Environmental.

WHAT ARE THE POTENTIAL ENVIRONMENTAL IMPACTS ASSOCIATED WITH THE PROPOSED PROJECTS?

The project development site will be assessed by specialists to identify the potential for environmental impacts. Specialist studies that are to be conducted include the following:

Ecology, fauna and flora - potential impact and the associated disturbance of vegetation on the ecology and biodiversity.

Avifauna - impact on avifaunal habitats and sensitive species.

Heritage sites and palaeontology - potential of disturbance to or destruction of heritage sites and fossils during the construction phase through excavation activities.

Soils, agricultural potential and land-use - significance of loss of agricultural land and soil degradation and/or erosion.

Social - identify positive and negative socio-economic impacts.

Visual aesthetics - impact of the CSP facility on the aesthetics within the area.

These potential impacts will be assessed through specialist studies which will be undertaken in two phases including:

- » **Scoping Phase Study** - A desk-top study wherein potential issues associated with the proposed project are identified and those issues requiring further investigation through the EIA Phase are highlighted.
- » **EIA Phase Assessment** - A detailed study of the potentially significant impacts identified in the Scoping Phase. Specialist studies will be undertaken in order to determine the nature and significance of the potential impacts. These specialist studies will be informed by existing information, field observations and input from the public participation process. Practical and achievable mitigation measures will be recommended in order to minimise potentially significant impacts identified. These recommendations will be included within an Environmental Management Programme (EMPr).

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 PARTICIPATION PROCESS

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

The public participation process aims to ensure that:

- » Information that contains all the relevant facts in respect of the applications 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 Scoping and EIA Report.

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

- » Distribution of this Background Information Document at the start of the process.
- » Identification of I&APs including adjacent landowners and Organs of State.
- » Placement of site notices at the affected properties.
- » Placement of advertisements in local newspapers.
- » Compilation of an I&AP database which is updated throughout the EIA Process. All registered I&APs are personally notified at milestones in the EIA process through a stakeholder letter.
- » Release of the Draft Scoping and EIA Reports for public review.
- » Holding public meetings, and focus group meetings with I&APs to further facilitate the participation 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 Noupoot CSP Project.

HOW TO BECOME INVOLVED

1. By responding by phone, fax or e-mail to our invitation for your involvement which has been advertised in 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 process. As a registered I&AP you will

automatically be invited to attend these meetings. Dates for public meetings will also be advertised in newspapers.

4. By contacting the consultants with queries or comments.
5. 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 the project, we urge you to make use of the opportunities created by the public participation process to provide comment, raise issues and concerns which affect and/or interest you or request further 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 the 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:

Gabriele Wood of Savannah Environmental

PO Box 148, Sunninghill, Johannesburg, 2157

Phone: 011 656 3237

Fax: 086 684 0547

E-mail: gabriele@savannahsa.com

To view project documentation, visit

www.savannahSA.com

Noupoort CSP Project, Northern Cape Province

Locality Map

Legend

- Town
- Existing Substations
- Existing Power Line
- Railway line
- National Route
- Regional Road
- Secondary Road
- Non Perennial river
- Noupoort CSP Project Site
- Farm Portions



Map Ref# Cresco CSP - Locality map_04.04.2016

