

Step 1: Notify Authorities of Environmental Assessment Process

An application for Scoping and EIA will be submitted to the National Department of Environmental Affairs (DEA).

Step 2: Notification to I&APs and Identification of Issues

Step two entails providing notification to I&APs of the project proposal as well as the identification of any issues/concerns they may have. I&APs are provided with this Background Information Document (BID) on the project, including a locality map and a comment form. I&APs are required to register their interest in the project to receive further project information. One on one meetings will be conducted with relevant stakeholders during this phase of the process. I&APs will be provided with a minimum of a 30 day period within which to raise any issues of concern for inclusion in the Draft Scoping Report.

Step 3: I&AP Review of the Draft Scoping Report

Issues and concerns raised by I&APs are compiled into an Issues and Responses Trail for inclusion in the Draft Scoping Report which is released for a 40 day comment period. This report will also include the Plan of Study for EIA. All registered I&APs on the project database are notified in writing of the opportunity to comment. In order to assist I&APs with their understanding of the project and to facilitate the identification of issues and concerns for inclusion in the Final Scoping Report, a public meeting, to which all I&APs are invited, will be held during the review period. Copies of the report will be made available at the Douglas Library and on the website: www.csir.co.za/eia/douglas

Step 4: Final Scoping Report

The comments received from I&APs during the review process are considered in the compilation of the Final Scoping Report before it is submitted to DWEA for their decision making. All I&APs on the project database will be notified in writing of the submission of the Final Scoping Report to the authorities (DEA). The Final Scoping Report will include the Plan of Study for EIA (PSEIA) and Terms of Reference for specialist studies to be undertaken as part of the EIA process. The PSEIA is subject to the approval of the authorities.

Step 5: Draft EIA Report and Draft EMP

When DEA accepts the Final Scoping Report and PSEIA, the environmental assessment phase may commence. The purpose of the EIA is to:

- Address issues that have been raised through the Scoping Process
- Assess reasonable and feasibility alternatives that form part of the proposed activity (including No Go Option)
- Assess potential impacts
- Recommend management actions to enhance benefits or avoid/minimise negative impacts.

This stage in the process entails the compilation and release of a Draft EIA Report (including the draft EMP) for a 40 day I&AP review period. All comments received from I&APs and authorities via meetings held or via written correspondence are compiled into a Comments and Responses Trail for inclusion in the Final EIA Report. The Comments and Responses Trail will indicate the nature of the comment, when and who raised the comment as well as indicate how the comment received has been considered in the Final EIA Report, in the project design or EMP for the project.

Step 6: Final EIA Report & Draft EMP

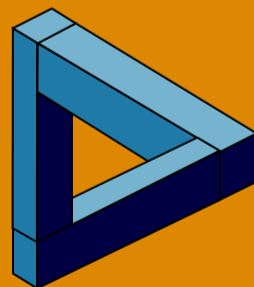
The Final EIA Report, including the Comments and Responses Trail and Draft EMP will be compiled for submission to the authorities for decision making (DEA). All I&APs of the project database will be notified in writing of the submission of the Final EIA Report.

Step 7: Notification of Environmental Authorisation and Appeal Period

All I&APs on the project database will be notified in writing regarding the environmental authorisation for the project and the appeal period, as well as the manner of appeal.

HOW CAN YOU GET INVOLVED?

1. By registering your interest in the project as an I&AP with the participation consultant (Garth Adams) before the 26th of November 2011
2. By responding to our invitation for your involvement advertised in local newspapers.
3. By mailing or faxing a comment form to the participation consultant indicated below.
4. By telephonically contacting the participation consultant (Garth Adams) if you have a query, comment, or require further project information.
5. By reviewing the various reports within the 40-day comment period.
6. By attending any feedback meetings, which may be held during the review period.



PRISM
public participation &
social and economic
growth strategies

Who should you contact:

Garth Adams (PRISM)
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Kuilsvier, 7579, Western Cape
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Background Information Document (BID)
for the Environmental Impact Assessment of the
100 MW Photovoltaic (PV) and / or Concentrated Photovoltaic (CPV)
Solar Power Project proposed by
Mainstream Renewable Power Development South Africa (Pty) Ltd.
on the Roode Kop Farm (Portion 1 of Farm 5) near
Douglas in the Northern Cape Province.



BACKGROUND

Mainstream Renewable Power Development South Africa (Pty) Ltd (MRP) (the Project Applicant) intends to develop a solar power project on the Roode Kop Farm, 10km southwest of Douglas in the Northern Cape Province. MRP is a South African project development company that is focused on developing grid connected renewable energy power projects that will produce electricity from clean renewable energy sources. The project entails the generation of electricity from solar resource. This project will utilise Photovoltaic (PV) and / or Concentrated Photovoltaic (CPV) technology to generate this electricity. PV and CPV technology both utilise the principals of semiconductor technology, and convert sunlight into Direct Current. However, the difference between the two is a matter of efficiency. CPV combines high-efficiency solar cells with advanced concentrating optics (mirrors) to provide a high-energy yield. CPV is designed to track with the movement of the sun to ensure maximum utilisation of the resource throughout the day. PV technology is currently far more mature than CPV, but this may become a bankable technology option when this project nears the construction phase. This solar technology is suited for countries like South Africa, that have high direct normal irradiance and where the climate is dry and hot. PV/CPV technologies do not require water for operation but only for periodic cleaning. From an environmental perspective, this is favourable as this will not further impact on the low water resource in the Northern Cape.

This project is being developed to have a capacity of 100MW. The final capacity will be determined as development progresses. Once a Power Purchase Agreement (PPA) is awarded, this facility will generate electricity for a period of 20 years.

Note: For simplicity, any reference from this point onwards to solar will take to include both PV and /or CPV.

Table of abbreviations

BID	Background Information Document
CSIR	Council for Scientific and Industrial Research
MRP	Mainstream Renewable Power Development South Africa (Pty) Ltd
DEA	National Department of Environmental Affairs
FSR	Final Scoping Report
EAP	Environmental Assessment Practitioner
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
I&AP	Interested and Affected Party
kWh	Kilowatt Hours
MW	Megawatts
ha	hectares
km, m	kilometers, metres
NEMA	National Environmental Management Act (Act 107 of 1998)
NHRA	National Heritage Resources Act (Act 25 of 1999)
PSEIA	Plan of Study for EIA
ToR	Terms of Reference

AIM OF THIS DOCUMENT

This Background Information Document (BID) provides all Interested and Affected Parties (I&APs) with:

- Information on the proposed project;
- A description of the environmental authorisation process; and
- Details on how to register your interest in the project and receive further information.

As a registered I&AP, there will be opportunities for you to be involved in this environmental assessment process through receiving information, contributing issues and commenting on the draft report. The input from I&APs, together with the information and assessment provided by the Environmental Assessment Practitioner (CSIR), will assist the responsible authority, in this instance the National Department of Environmental Affairs, with their decision making

BRIEF PROJECT DESCRIPTION

The Solar Field will consist of the following infrastructure:

- Solar Arrays (panels)
- Building Infrastructure

The total surface area available to be covered will be approximately 340ha including all associated infrastructure during construction. The plant will have an installed capacity of 100MW for electricity generation. The property on which the plant is to be constructed will be leased by MRP from the property owner (Jan Augustinus van der Merwe) for the life span of the project.

1) Solar Arrays

The total footprint of the solar facility is estimated to be up to 340ha. This will include the development of the solar field including electrical infrastructure, foundations and onsite generator-transformer. The exact number of arrays, foundation type and more detailed design will follow as development progresses.

This project will utilise Photovoltaic (PV) and / or Concentrated Photovoltaic (CPV) technology to generate this electricity:

Photovoltaic (PV)

The smallest unit of a PV installation is a cell. A number of cells form a module, and finally a number of modules form the arrays (Figure 1).

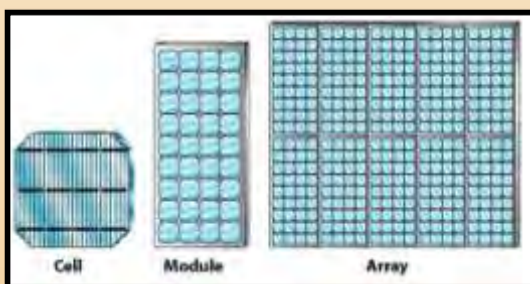


Figure 1: Components of the PV installation

Modules are arranged into strings that form the solar field. Modules are arranged in section sizes of approximately 40x5m called tables and are installed on racks which are made of aluminium or steel. The arrays and racks are founded into the ground through either concrete foundations or screw or pile foundations (see Figure 2). This whole structure will extend 5 to 10m off the ground level. This system may be fixed or alternatively may track the movement of the sun.

All the arrays are wired to inverters that convert direct current (DC) into alternate current (AC) that can be stepped up and fed into the national grid system.

Concentrated Photovoltaic (CPV)

With CPV, the basic makeup of the facility is as described above for PV. The fundamental difference is the use of optics to focus the light onto the PV cells and the potential for the unit to track the sun's

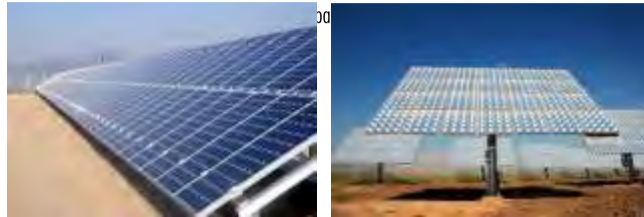


Figure 2: PV TECHNOLOGY



Figure 3: CPV TECHNOLOGY (SolFocus).

Building infrastructure

The solar field will require on-site buildings, including an operational control centre, an office, warehouse/workshop for spare parts and maintenance equipment, ablution and welfare facilities and security enclosures. Ablution facilities will be incorporated into the office structure. The buildings will likely be of single storey design, with the largest building (the warehouse/workshop) unlikely to exceed 5m in height and 50 x 50m plan dimensions. A security service will be required to guard the main facility and support infrastructure.

The buildings are required to support the functioning of the facility and provide services to personal that will operate and maintain the facility.

The building infrastructure for both technology types will be the same. Detailed design will follow as development progresses

2) Associated infrastructure

Electrical Infrastructure

The solar arrays are typically connected to each other in strings and the strings connected to inverters that convert DC to AC. The DC to AC inverters may be mounted on the back of the panel's support substructures / frames or alternatively in a central inverter station. The strings are connected to the inverters by low voltage DC cables. Power from the inverters is collected in medium voltage transformers through AC cables. The cables may be buried or pole-mounted depending on voltage level and site conditions.

Connecting the solar facility to the national grid will be via an onsite transformer unit. The intention is to connect into the 132kV Eskom line that feeds into the Ovaal Pumps substation, located approximately 1 km from the site. A transformer unit will facilitate this feed in. The project applicant has engaged with Eskom to formalise this grid application and the agreement will form part of the PPA.

The electrical infrastructure for both PV and CPV technology types will be the same. Detailed design will follow as development progresses.

Roads

The current access road from the R357 will be adapted to form the main access point to the site. Dual access is envisaged for both security and for emergency purposes. In addition, an site internal road network will be developed to provide access to the solar field, and other infrastructure (substation & buildings). Access is needed primarily for maintenance, inspections and panel cleaning. Existing farm roads will be used where possible.

The site road network will include turning circles for large trucks, passing points and where necessary, may include culverts over gullies and rivers/ drainage lines. All site roads will require a width of approximately 10m. Drainage trenches along the side of the internal road network will be installed. In addition, silt traps at the outfall of the drainage trenches to existing watercourses will be installed.

The road network for both proposed technologies will follow a similar layout, with CPV requiring more space between units to accommodate for potential movement if a tracking option is used. Detailed design will follow as development progresses.

Fencing

For various reasons (security, public protection and lawful requirements), the plant will be secured by enclosing it with security fencing. Access points will be managed and monitored by full time security company. The actual choice of fencing is yet to be determined, but may be a fully electrified option, or a full height palisade or even a hybrid of the two. The fencing infrastructure for both technology types will be the same. Detailed design will follow as development progresses.

Solar Resource Measuring Station

A permanent solar resource measuring station will be required on site to measure incoming solar radiation levels. At this stage it is assumed that the measuring station will have a footprint no larger than 100m² and will measure 5m in height.

Temporary work areas / activities during construction

A lay down area of a maximum of 2ha, adjacent to the site or on site will be required. This will be temporary in nature (unless the property owner wishes to continue using it in the long term). Associated with this will be contractors' site offices and other temporary site welfare facilities will be located on site for the duration of the construction phase.

Panel maintenance

The accumulation of dust on the panels affects the solar power plant productivity and the panels do, therefore, require regular cleaning. Cleaning will take place quarterly, but this regime will be revised should site conditions prove to make this need more onerous.

This maintenance will require water for washing the panels down. It is the intention of the project applicant to source the required amounts of water from an existing reticulation system, perhaps from the local municipality. If this is not feasible, alternative options would be to tanker in the required water and/or amend the existing farmer's water use license to include this essential activity. The panel cleaning regime for both technology types will be similar. Details on water sourcing and use will be detailed as design develops.

CURRENT LAND USE ON THE FARM

The Portion 1 of the Farm Roode Kop (Farm No 5) covers an area of approximately 350ha. At present, the farm is used for sheep and wild life grazing. Although the site is predominately in a natural state it can be considered low sensitivity. The site has little agricultural potential due to the climate and soil characteristics except in the eastern part of the site bordering the Orange River. The river banks and ephemeral pan on the site constitute highly sensitive features, and these areas have therefore been avoided when selecting the proposed sites for the solar facility (Figure 4).

REQUIREMENT FOR ENVIRONMENTAL AUTHORISATION AND ENVIRONMENTAL IMPACT ASSESSMENT

In terms of the 2010 NEMA EIA Regulations, as amended: GN R543, 544 and 546; promulgated under Chapter 5 of the National Environmental Management Act (Act 107 of 1998) and published in Government Gazette 33306 on 18 June 2010; an Environmental Impact Assessment is required for this project because it includes, amongst others, the following activities listed in GN R544, R545 and R546, listed in Table 1. The project requires environmental authorisation from the National Department of Environmental Affairs, prior to the commencement of activities on site. The applicant has appointed the CSIR as the independent Environmental Assessment Practitioner to undertake the Environmental Impact Assessment and PRISM (Garth Adams) will manage the public participation component of the assessment process.

Table 1: Activities applicable to the Solar Project based on listings in GN R544, GN R545, and GN R546:

Regulation	Number and date of the relevant notice	Activity No (s)	Description of each listed activity
Regulation 544 (GN R 544) of 18 June 2010. Listing Notice 1		10	It is planned to use the existing Oasis Rural substation for the transmission and distribution of electricity, for which connections to the farm must be installed.
		11	The final layout might result in solar panels or other infrastructure encroaching within 32m of a watercourse.
		18	The infilling or depositing of any material of more than 5m ³ into or from a watercourse might occur on the proposed Blocusosite.
		22	The turning circles for the trucks delivering the solar park material may require turning circles that are wider than 8m.
Regulation 545 (GN R 545) of 18 June 2010. Listing Notice 2		24	Approximately 200ha of land will be subject to physical alteration for commercial/industrial use. This land might have been zoned as open space, conservation or had an equivalent zoning.
		1	A facility for generating an electricity output of approximately 100MW from solar energy will be constructed.
		8	Electrical transmission infrastructure (which might have a capacity of 132kV or more) must be constructed to connect the proposed development to the substation.
Regulation 546 (GN R 546) of 18 June 2010. Listing Notice 3		15	The total area covered by the proposed activity is approximately 200ha, parts of which will be subject to physical alteration for commercial/industrial use.
		2	The construction of a reservoir for bulk water supply with a capacity of more than 250m ³ might occur.
		4	New roads with width greater than 4m will be constructed to provide access to the facility, and between solar panels.

	14	The development footprint of approximately 200ha with laydown areas will require clearing of vegetative cover most of which is current grazing crops. The construction of transmission infrastructure (linear development) might
	16	The final layout might result in solar panels or other infrastructure encroaching within 32m of a watercourse.
	19	Transportation of PV material assemblies and access to proposed location might require the widening of roads by more than 4m as well as the extension of some roads by more than 1km.

The Scoping and Environmental Impact Assessment needs to show the responsible authority, DEA, and the project proponent what the consequences of their choices will be in biophysical, social and economic terms. The Environmental Assessment Process being implemented can be summarised as follows:

Stage 1: Environmental Scoping

This Scoping process is being planned and conducted in a manner that is intended to provide sufficient information to enable the authorities to reach a decision regarding the scope of issues to be addressed in the EIA. The objectives of this Scoping process are to:

- Identify and inform a broad range of stakeholders about the proposed development
- Clarify the scope and nature of the proposed activities and the alternatives being considered
- Through a process of broad-based consultation with stakeholders, conduct an open, participatory and transparent participation process and facilitate the inclusion of stakeholders' concerns in the decision-making process
- Identify and document the key issues to be addressed in the forthcoming Environmental Impact Reporting Phase of the EIA.

Stage 2: Environmental Impact Assessment

The purpose of this stage of the EIA is to undertake specialist investigations to address the issues of concern identified through the Scoping Process. The specialists will build on the information that was gathered for phase 1, but will focus their studies on the area under assessment. The specialist studies will include the assessment of alternatives, identification of impacts and the determination of the significance of impacts. Specialists will, where appropriate, formulate mitigatory measures to maximize positive benefits or avoid/minimise potential negative impacts. The following specialist assessments have been identified, at this stage, to form part of the environmental assessment phase of the project:

- Botanical Assessment—Tania Anderson, Botanist
- Wetland Assessment—Dr Liz Day, The Freshwater Consulting Group/ FCG
- Visual Impact Assessment - Henry Holland, MapThisTrust
- Soil and Agricultural Potential Assessment - Johann Lanz, Soil Scientist
- Heritage (archaeology) Assessment—David Morris, Mc Gregor Museum
- Economic assessment—Dr. Hugo van Zyl, Independent Economic Researchers
- Paleontology Assessment—Dr John Almond, Natura Viva.

PUBLIC PARTICIPATION PROCESS

Public Participation forms an integral component of the scoping and environmental impact assessment process. The following outlines the steps in the public participation process which will be undertaken to run in parallel to stage one and two of the EIA process.