

**APPLICATION FOR ENVIRONMENTAL AUTHORISATION FOR
PROPOSED CONSTRUCTION OF A PHOTOVOLTAIC SOLAR
POWER STATION WITH ASSOCIATED INFRASTRUCTURE NEAR
COLLETT SUBSTATION, MIDDELBURG, EASTERN CAPE**

AMDA DEVELOPMENTS (PTY) LTD

DRAFT SCOPING REPORT

JANUARY 2017

AMDA DEVELOPMENTS (PTY.) LTD

**APPLICATION FOR ENVIRONMENTAL
AUTHORISATION FOR PROPOSED CONSTRUCTION
OF A PHOTOVOLTAIC SOLAR POWER STATION WITH
ASSOCIATED INFRASTRUCTURE NEAR COLLETT
SUBSTATION, MIDDELBURG, EASTERN CAPE**

Draft Scoping Report

January 2017

CEM 2016/222



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VISION

The Centre for Environmental Management (CEM) is inspired by:

- The pursuit of generating appropriate knowledge in the fields of environmental and occupational health and safety management;
- Delivering structured, efficient and cost effective short course-based teaching and learning opportunities that is potentially credit-bearing;
- Finding innovative solutions and creating expertise in environmental and occupational health and safety management and governance;
- The pursuit to be the service provider of choice for progressive organisations; and
- The pursuit to be respected locally, regionally and internationally for its leadership as catalyst for change towards a more sustainable, healthy and safe future.

MISSION

The Centre for Environmental Management (CEM)'s mission includes the following:

- To effectively and efficiently manage the CEM as an innovative centre with a focus on customer satisfaction;
- To develop and deliver teaching and learning interventions by means of dedicated, potentially credit-bearing, specialist short courses of high quality;
- To empower students to:
 - find innovative solutions to challenges in the environmental and occupational health and safety management fields;
 - promote continuing professional development; and
 - upgrade skills and knowledge to ensure success in environmental and occupational health and safety management and other related fields;
- To provide structured and fast track learning and skills development opportunities for entrants to the environmental and occupational health and safety management and other related fields;
- To make the CEM's expertise available to organisations, assisting them to adopt more sustainable, healthy and safe strategies or practices;
- To conduct relevant integrated research programmes;
- To network and collaborate with organisations and individuals that support a transition to a sustainable, healthy and safe future; and
- To transform the CEM's activities to ensure that its procurement processes, appointment of permanent staff, selection of participants in intern programmes, use of external presenters and selection and use of service providers become more inclusive in line with the policies of the North-West University.

APPROVAL

CLIENT: AMDA Developments (Pty.) Ltd.

PROJECT: Application for Environmental Authorisation for Proposed Construction of a Photovoltaic Solar Power Station with Associated Infrastructure near Collett Substation, Middelburg, Eastern Cape

REPORT STATUS: Draft

DATE OF REPORT: 6 January 2017

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CO-ORDINATOR: Theunis Meyer

**For: Centre for Environmental
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For: AMDA Developments (Pty.) Ltd.

Mr. Piero Granelli

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ABBREVIATIONS AND ACRONYMS

Abbreviation or Acronym	Description
BA	Basic Assessment
CA	Competent Authority
CEM	Centre for Environmental Management
DEA	Department of Environmental Affairs
DEDEA	Eastern Cape Department of Economic Development, Environmental Affairs and Tourism
DoE	Department of Energy
DWA	Department of Water Affairs
EA	Environmental Authorisation
EAP	Environmental Assessment Practitioner
EIA	Environmental Impact Assessment
GN R.	Government Notice Regulation
I&APs	Interested and Affected Parties
NEMA	National Environmental Management Act (No. 107 of 1998)
NWA	National Water Act (No. 36 of 1998)
PV	Photovoltaic
SAATCA	Southern African Auditor Training and Certification Association
SACNASP	South African Council for Natural Scientific Professions

PART 1: REPORT

1 Introduction

1.1 Project Background

AMDA Developments proposes to develop a 75 Megawatt (MW) solar Photovoltaic (PV) power plant, as well as associated infrastructure such as roads and a power line, at a site adjacent to the Collett railway siding near Rosmead, in the vicinity of Middelburg in the Eastern Cape Province. It is currently engaged in the process of securing the development rights, consents and authorisations necessary to bid the project in the Department of Energy's Independent Power Producer Procurement Programme.

The purpose of the proposed solar energy facility is to add new capacity for generation of renewable energy to the national electricity mix, in line with government policy. The PV facility is designed to operate continuously with low maintenance for 20 years.

Photovoltaics involve the conversion of sunlight into electricity through the use of thin layers of materials known as semi-conductors, which absorb solar radiation that energizes their electrons to produce static electricity, which is then converted into direct current (DC) electricity. The physical processes involved in the conversion of sunlight into electricity include light absorption, electron transport and recombination mechanisms, which are determined by the electro-optical properties of the silicon material.

Individual PV cells are made of a semiconductor material (such as silicone), linked and placed behind a protective glass sheet to form a PV panel. A single cell is sufficient to power a small device such as an emergency telephone, however to produce 75 MW, the proposed plant will require numerous panels arranged in multiple/arrays. The angle at which the panels are positioned is dependent on the latitude of the proposed PV plant and will be adjusted to optimize for summer or winter solar radiation characteristics.

The proposed PV plant will convert the incident solar energy into direct current (DC) electricity by means of photovoltaic modules. The electricity is transferred to DC/AC inverters to convert it to alternating current (AC). The inverters are matched to the selected PV module technology, and in turn are connected to a step-up transformer in order to raise the voltage up to the grid requirements.

The development of the proposed PV facility and associated infrastructure involves activities listed in terms of the NEMA and requires that a full Environmental Impact Assessment (EIA) must be conducted to obtain Environmental Authorisation, prior to the commencement of those activities.

1.2 Purpose of the Document

This document will:

- provide relevant information regarding the Scoping Phase of the EIA process;
- clarify and address all the potential issues and environmental impacts associated with the proposed construction, operation, maintenance and decommissioning of the Collett PV Solar Power Plant;

- identify and determine the scope of the relevant specialist studies that will be undertaken as part of the EIA process and provide information that will be used to determine the significance of the potential environmental impacts, as well as to what extent these impacts can be prevented or mitigated;
- provide information on the Public Participation process that has and will be followed, as well as details of the government institutions and interested and affected parties (I&APs) who are and will be involved in the EIA process.

1.3 Report Structure

This draft Scoping Report consists of twelve sections, according to the information as required by *Appendix 2(2) of GN R. 982, which specifies that a scoping report must contain all the information that is necessary for a proper understanding of the nature of issues identified during scoping.*

- **Section 1** consists of an introduction to the project, including the details of the applicant;
- **Section 2** contains the details of the EAP who prepared the report;
- **Section 3** gives a description of the scope of the proposed activity, including all listed and specified activities triggered;
- **Section 4** describes the locality of the properties on which the proposed activity is to be undertaken
- **Section 5** summarizes the applicable policy and legislative context within which the development is proposed, including all policies, legislation, plans and guidelines that are applicable to the proposed development and are to be considered during the EIA Process. It also includes all the authorisations required for the proposed activity;
- **Section 6** explores the need and desirability of the proposed activity and also elaborates on the benefits of the proposed development;
- **Section 7** provides detailed information on the alternative evaluation process followed to reach the proposed preferred activity, site and location within the site;
- **Section 8** provides an overview of the components of the environment that may be affected by the proposed development, including geographical, physical, biological, social, economic, heritage and cultural aspects;
- **Section 9** describes the positive and negative impacts that the proposed activity and alternatives will have on the environment and on the community that may be affected;
- **Section 10** provides an overview of the Public Participation process followed to date; and
- The plan of study (PoS) for undertaking the environmental impact assessment (EIA) process is provided in **Section 11**;
- **Section 12** contains the undertaking under oath or affirmation by the EAP; and
- The **Appendices** to the Scoping Report contains information and evidence relevant to the EIA process.

The requirements for scoping reports in terms of the 2014 EIA regulations are summarized in Table 1, which contains the minimum requirements for a scoping report and provides an easy reference for the reader of this report to find the relevant chapters, sections and addenda that are related to specific requirements of the 2014 EIA Regulations [GNR. 982 of December, Regulation 22 (Appendix 2)].

Table 1: Requirements of the 2014 EIA Regulations (GNR. 982 of December 2014).

Regulation 22 Appendix 2	Requirement of the 2014 EIA Regulations	Section where requirement is addressed
(a)	Details of- (i) the EAP who prepared the report; and (ii) the expertise of the EAP, including a curriculum vitae;	Section 2 Appendix A
(b)	The location of the activity, including: (i) the 21 digit Surveyor General code of each cadastral land parcel; (ii) where available, the physical address and farm name; and (iii) where the required information in items (i) and (ii) is not available, the coordinates of the boundary of the property or properties;	Section 4
(c)	A plan which locates the proposed activity or activities applied for as well as the associated structures and infrastructure at an appropriate scale, or, if it is- (i) a linear activity, a description and coordinates of the corridor in which the proposed activity or activities is to be undertaken; (ii) on land where the property has not been defined, the coordinates within which the activity is to be undertaken;	Section 4.2
(d)	A description of the scope of the proposed activity, including- (i) all listed and specified activities triggered and being applied for; and (ii) a description of the associated structures and infrastructure related to the development;	Section 3
(e)	A description of the policy and legislative context within which the development is located and an explanation of how the proposed development complies with and responds to the legislation and policy context;	Section 5
(f)	A motivation for the need and desirability for the proposed development, including the need and desirability of the activity in the context of the preferred location;	Section 6

Regulation 22 Appendix 2	Requirement of the 2014 EIA Regulations	Section where requirement is addressed
(h)	A full description of the process followed to reach the proposed preferred activity, site and location of within the site, including: (i) details of the alternatives considered;	Section 7
(h)	(ii) details of the public participation process undertaken in terms of regulation 41 of the Regulations, including copies of the supporting documents and inputs;	Section 10
(h)	(iii) a summary of the issues raised by interested and affected parties, and an indication of the manner in which the issues were incorporated, or the reasons for not including them;	Section 10
(h)	(iv) the environmental attributes associated with the alternatives focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects;	Section 8
(h)	(v) the impacts and risks identified for each alternative, including the nature, significance, consequence, extent, duration and probability of the impacts, including the degree to which these impacts- (aa) can be reversed; (bb) may cause irreplaceable loss of resources; and (cc) can be avoided, managed or mitigated;	Section 9
(h)	(vi) the methodology used in determining and ranking the nature, significance, consequences, extent, duration and probability of potential environmental impacts and risks associated with the alternatives;	Section 11.5
(h)	(vii) positive and negative impacts that the proposed activity and alternatives will have on the environment and on the community that may be affected focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects;	Section 9
(h)	(viii) the possible mitigation measures that could be applied and level of residual risk;	To be provided in draft EIR in EMPr
(h)	(ix) the outcome of the site selection matrix	Section 7
(h)	(x) if no alternatives, including alternative locations for the activity were investigated, the	Not applicable

Regulation 22 Appendix 2	Requirement of the 2014 EIA Regulations	Section where requirement is addressed
	motivation for not considering such and	
(h)	(xi) a concluding statement indicating the preferred alternatives, including preferred location of the activity;	Section 7.4
(i)	(i) a plan of study for undertaking the environmental impact assessment process to be undertaken, including-	Section 11
(i)	(i) a description of the alternatives to be considered and assessed within the preferred site, including the option of not proceeding with the activity;	Section 7
(i)	(ii) a description of the aspects to be assessed as part of the environmental impact assessment process;	Sections 9.2 and 11.2
(i)	(iii) aspects to be assessed by specialists;	Section 11.3
(i)	(iv) a description of the proposed method of assessing environmental aspects, including a description of the proposed method of assessing environmental aspects including aspects to be assessed by specialists;	Section 11.5
(i)	(v) a description of the proposed method of assessing duration and significance;	Section 11.5
(i)	(vi) an indication of the stages at which the competent authority will be consulted;	Section 11.7
(i)	(vii) particulars of the public participation process that will be conducted during the environmental impact assessment process; and	Section 11.8
(i)	(viii) a description of the tasks that will be undertaken as part of the environmental impact assessment process;	Section 11.4
(i)	(ix) identify suitable measures to avoid, reverse, mitigate or manage identified impacts and to determine the extent of the residual risks that need to be managed and monitored.	Section 11.6

Regulation 22 Appendix 2	Requirement of the 2014 EIA Regulations	Section where requirement is addressed
(j)	An undertaking under oath or affirmation by the EAP in relation to- (i) the correctness of the information provided in the report; (ii) the inclusion of comments and inputs from stakeholders and interested and affected parties; and (iii) any information provided by the EAP to interested and affected parties and any responses by the EAP to comments or inputs made by interested or affected parties;	Section 12
(k)	An undertaking under oath or affirmation by the EAP in relation to the level of agreement between the EAP and interested and affected parties on the plan of study for undertaking the environmental impact assessment;	Section 12
(l)	Any specific information that may be required by the competent authority; and	N/A
(m)	Any other matters required in terms of section 24(4)(a) and (b) of the Act.	N/A

1.4 Details of the Applicant

Project applicant:	AMDA Developments (Pty) Ltd		
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2 Details of the Environmental Assessment Practitioner (EAP) who prepared the report

Regulation 12(1) in Government Notice No. R.982, published in terms of section 24(5) read with section 44 of the National Environmental Management Act (NEMA) (Act No. 107 of 1998), requires that an applicant must appoint an Environmental Assessment Practitioner (EAP) at own cost to manage the application. Regulation 13 furthermore specifies that an EAP appointed must be independent; have expertise in conducting environmental impact assessments, including knowledge of the Act, these Regulations and any guidelines that have relevance to the proposed activity; and perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the application;.

The applicant has appointed the Centre for Environmental Management, North-West University (CEM) to manage and facilitate the EIA process for the proposed development. The CEM is accredited by the North-West University (NWU) as a decentralised short course provider of potentially credit bearing, teaching and learning services. The CEM also specialises in finding innovative and cost-effective safety, health and environmental (SHE) management solutions of the highest international standard that are relevant to the African and developing country context, based on the principles of sustainability and safety. The CEM also delivers expertise and conducts research in environmental, safety and health management and related fields, including environmental impact and risk assessments and planning to ensure environmental legal compliance, as well as the development and implementation of various environmental management tools. The CEM benefits from the pooled resources, diverse skills and experience in the environmental management field held by its team, as well as its network of associates.

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2.1 Expertise of EAP, including a curriculum vitae

This report was prepared by Theunis Christoffel Meyer, who is currently employed as Senior Subject Specialist at the CEM and acts as Environmental Assessment Practitioner (EAP) for this project. Mr. Meyer holds Masters Degrees in Pasture Science and Environmental Management from the Free State and North-West Universities respectively, as well as an Honours Degree in Wildlife Management from the University of Pretoria. Mr. Meyer has 15 years' experience in the environmental management field and another 15 years as vegetation scientist.

In terms of professional affiliation, he is registered as Professional Natural Scientist with the South African Council for Natural Scientific Professions in Ecological Science and in Environmental Science. He is also a member of the Grassland Society of Southern Africa (GSSA), the South-African chapter of the International Association of Impact Assessment (IAIAsa) and a registered Senior Environmental Management System (EMS) Auditor with the Southern African Auditor Training and Certification Association (SAATCA).

He has been involved in numerous EIAs conducted throughout South Africa in terms of the Environmental Conservation Act (No. 73 of 1989) (ECA), the National Environmental Management Act (No. 107 of 1998) (NEMA) and the Mineral and Petroleum Resources Development Act (No. 28 of 2002) (MPRDA). His responsibilities in these EIAs included the identification and assessment of environmental impacts, the facilitation of public participation processes and the development of environmental management plans.

He also co-ordinated the popular environmental law public short course at the CEM and regularly lectures on the legal EIA requirements to various audiences. These presentations cover the requirements of Section 24 of the NEMA (No. 107 of 1998), of the regulations published in GN R.982 and the activity lists published in GN R.983, GN R. 984 and GN R.985, as well as the guidelines published by Department of Environmental Affairs (DEA), Gauteng Department of Agriculture and Rural Development (GDARD) and the Western Cape Department of Environmental Affairs and Development Planning (DEADP).

As registered EMS Auditor, Mr. Meyer is also regularly involved in environmental legal compliance audits for clients to establish their legal non-compliances. He has also assisted a number of organizations in identifying not only environmental impacts, but also the root causes of these impacts (environmental aspects) during the development of ISO 14001 Environmental Management Systems.

See CV attached (Appendix A)

2.2 Independence

Neither the CEM, nor any of the specialist sub-consultants on this project are affiliated to AE-AMD (Pty) Ltd. The CEM also does not have any interest in secondary developments that may arise out of the authorisation of the proposed project. Furthermore, Mr. Meyer and the specialist sub-consultants meet the requirements for independence as none of them has and will not have any financial interest in the undertaking of the activity, other than remuneration for work performed in terms of the EIA Regulations, 2014; has and will not have vested interest in the proposed activity proceeding; and also has no, and will not engage in conflicting interests in the undertaking of the activity.

2.3 Subject matter experts that supports and assists the EAP

The EAP is supported by expertise from various subject matter experts as outlined in Table 4. All of the subject matter experts have expertise in conducting the specialist work relevant to this application, including relevant knowledge of the applicable legislation, policies and guidelines that have relevance to the proposed activity.

Table 2: Contributing subject matter experts

Specialist	Organisation	Expertise
Dr L.G. du Pisani	Eduplan cc	Professional soils and agricultural specialist
Dr S. Milton-Dean	Renu-Karoo Veld Restoration cc	Botanical specialist
Dr W. Richard J. Dean	Renu-Karoo Veld Restoration cc	Fauna specialist
Ms. Celeste Booth	Albany Museum: Archaeology	Archaeological specialist
Dr Robert Gess	Rob Gess Consulting	Paleontological specialist
Mr. Henry Holland	map(this) Trust	Visual impact specialist

3 Description of the scope of the proposed activity

According to subsection 24(4) of the NEMA (No. 107 of 1998), procedures for the investigation, assessment and communication of the potential impact of activities must ensure, as a minimum, with respect to every application for an environmental authorisation, investigation of the potential impact of the activity and its alternatives on the environment and assessment of the significance of that potential impact.

In the regulations, published in terms of section 24(5) read with section 44 of the NEMA (No. 107 of 1998) in GN R.982, "activity" is defined as an activity identified in any notice published by the Minister or MEC in terms of section 24D(1)(a) of the Act.

Regulation 21 (3) in GN R. 982 specifies that a scoping report must contain all the information all information set out in Appendix 2 to these Regulations.

3.1 Description of activities to be undertaken

The construction of the proposed PV facility will be the first phase of establishing the 75 MW facility that will generate electricity from solar radiation. The proposed project will involve the construction of the following:

- Arrays of photovoltaic panels for the generation of electricity;
- Dedicated inverters to convert the electricity from DC to AC;
- Underground cabling between the photovoltaic panels and dedicated inverters;
- An overhead 132 kV power line connecting into the proposed PV solar facility with the Eskom Collett substation;
- External access road along the Rosmead-Cradock railway line;
- Internal access roads;
- Administrative/security buildings.

The aim of the design and lay-out of the facility will be to maximise electricity generation through exposure to solar radiation, while minimising infrastructure, operational and maintenance costs, as well as environmental & social impacts.

3.2 Description of associated structures and infrastructure

3.2.1 Access and internal roads

The proposal is that access to the site will be via the Spoornet service road that runs adjacent to the railway line from Rosmead to the site. Initial discussions have been held with Spoornet in this regard.

This existing road will need to be upgraded to cater more traffic and larger vehicles. This will probably firstly involve the improvement of the road bed, as well as minor improvements to the geometric alignment. The road bed, i.e. the foundation layers and wearing course, will probably be rehabilitated and if necessary, new material will be brought in. The minor geometric alignment will involve doing away with sharp corners and deep dips or excessively high bumps.

The access and internal roads will be constructed as 3m wide all weather type roads, with wide open side drains, forming part of the site or other existing drainage systems. The access road will be built with a minimum of 400 mm depth of sub-grade preparation and an aggregate base layer of up to 150 mm thick compacted to the 95% Proctor (AASHTO). The base layer will either be of material obtained from the excavations on site or aggregate from a commercial source. The design process will investigate surfacing some of the roads to minimise dust. This would include the public roads, as well as access and internal roads.

Sufficient space will be allowed at the access points to the access road to ensure that the vehicles do not stack up on the road while being processed through security. The road alignment and layout will also take the safety precautions necessary for rail crossings into account.

Passing bays will be provided at strategic points on the access road during the construction and operational phases, to allow the circulation of two trucks in opposite directions at the same time.

The internal road layout will be designed in order to ensure ease of access to every rack or tracker structure and the horizontal geometry will be designed to enable the turning of trucks. These service roads need only be gravel tracks, as access around the site during the operational phase will primarily be for security and routine inspection, while access for cleaning operations or maintenance will be very infrequent.

3.2.2 Parking area

There will be a small hardstand parking / lay-down area near the buildings, to be used for the operational phase.

3.2.3 Auxiliary power supply

The PV plant requires a continuous power supply for the operation of the plant. This is for the plant monitoring and control systems, the perimeter and security systems, lights and air-conditioning etc. for the buildings. Also if trackers are used, a small supply is required for the operation for the trackers.

The most cost effective and efficient source is for the auxiliary power supply is usually directly from the Eskom sub-station.

3.2.4 Emergency power supply

In order to ensure the continuous operation of the monitoring system and security a backup diesel generator system, with at least 2 hours of autonomy, is usually installed.

3.2.5 Buildings

The buildings and facilities needed to service a PV plant are; a control room (20 m²), a small office (20 m²), ablution facilities and kitchen area (20 m²), a small workshop (40 m²) and a store of 300 to 400 m². There will also be facilities for the security personnel on the site. On the PV plant layout, space has been allocated for the buildings near the entrance to the site.

One option is to build a farm type shed of approximately 480 m² (40 m x 12 m), with the control room and offices etc. inside the building. However, given that the electricity generating license has a limited 20 year term, the trend is to rather provide temporary buildings, such as Park-homes or containers.

Services for the buildings will be provided as follows.

- Electricity will be provided from the Eskom sub-station;
- The control room and the office will be air-conditioned.

Enviro-loo toilets will be used. These toilets are used in a number of National Parks and Nature Reserves. The toilets do not require a water supply and operate by separating the solid and water waste and then drying the waste by evaporation. The dry solids are removed and can safely be spread as compost in the field.

The source for the small amount of potable water required for use by the site personnel will need to be determined during the planning process, as indicated below. Should the available water need treatment then the appropriate equipment will be used. The volume of potable water required will most probably be well under the thresholds to trigger water use license applications. However, depending on the source of the water, the type of use (industrial) may trigger an application for a water use license.

3.2.6 Perimeter fencing

Given the high material values and risk of theft associated with PV panels and electrical cabling it is imperative that the perimeter fences and security systems get installed and commissioned as soon as is practical. This is especially so before the reticulation is operational and hence the materials are less easy to steal.

The process will be to first fence off a delivery, storage and processing area within the site as a start and then to erect the perimeter fence and security. This will allow the initial construction start up activities to begin earlier. The proposed perimeter fence is 2.4 m weld-mesh or wire and netting fence which is electrified or a double barrier consisting of two 2.4 m high electric fences with only electric strands placed about 2 or more metres apart. The electrification will be non-lethal.

A single 6 m automated sliding gate will be provided for vehicular access as well as a single 1 m wide gate for pedestrians.

3.2.7 Lightning protection system

To protect the PV plant, equipment and personnel from lightning strikes a lightning protection system composed of masts and surges arresters will be installed. This system will be designed by a specialist and will comply with the South African laws and standards.

Although current lightening protection designs only allow for low height protection on the individual structures, provision has been made in the applications for 15m high conductor masts.

3.2.8 Monitoring & control systems

A SCADA (Supervisory Control And Data Acquisition) system will be installed. The primary purpose of SCADA will be to monitor, control and alarm plant or regional operating systems from a central location. While override control is possible, it is infrequently utilized.

There are three main elements to a SCADA system, various RTU's (Remote Telemetry Units), communications and an HMI (Human Machine Interface).

Each RTU effectively collects information at a site, such as from the inverters or met station, while communications convey that information from the various plant or regional RTU sites to a central location and occasionally returns instructions to the RTU.

Communication within a plant will be by data cable, wire or fibre-optic, while regional systems most commonly utilize radio or the internet. The real time information can be monitored remotely, typically by the O&M company, the plant owners etc.

The HMI displays this information in an easily understood graphics form, archives the data received, transmits alarms and permits operator control as required. The HMI is essentially a PC system running powerful graphic and alarm software programs.

3.2.9 Meteorological stations

There will be a number of meteorological stations installed on the site in order provide adequate meteorological data to evaluate the PV plant performance. The typical meteorological station will include all or some of the following items:

- Lattice structure 3m high for the support of the systems;
- pyranometer for tilted radiation;
- horizontal pyranometer for global radiation;
- ambient temperature sensor with natural ventilation anti-radiant shield;
- anemometer at 5m height;
- a vane to measure the wind direction;
- module temperature sensor;
- humidity sensor;
- data logger;
- GSM/GPRS modem;
- UPS or non-stop power supply system.

3.2.10 Security system

The perimeter, access points and general site will be monitored by CCTV cameras infrared / night vision technology and passive intrusion detection systems. The security lighting will be linked to the passive intrusion detection systems, so that it will not be on all night.

3.2.11 Site drainage

The drainage system proposed will be a surface management system based on the principle of not collecting storm-water, but rather spreading or distributing it over the site to soak away or drain away slowly, similarly to the normal pre-development flows.

3.3 All listed and specified activities triggered

Table 3: Detailed description of listed activities associated with the project

Listed activity as described in GN R 983, 984 and 985	Description of project activity that triggers listed activity
GNR 984, Activity 1: The development of facilities or infrastructure for the generation of electricity from a renewable resource where the electricity output is 20 megawatts or more, excluding where such development of facilities or infrastructure is for photovoltaic installations and occurs within an urban area.	Construction of 75 MW Photo Voltaic (PV) Power plant with associated infrastructure
GNR 984, Activity 15: The clearance of an area of 20 hectares or more of indigenous vegetation, excluding where such clearance of indigenous vegetation is required for- (i) the undertaking of a linear activity; or (ii) maintenance purposes undertaken in accordance with a maintenance management plan.	Construction of 75 MW Photo Voltaic (PV) Power plant with associated infrastructure
GNR 983, Activity 11: The development of facilities or infrastructure for the transmission and distribution of electricity (i) outside urban areas or industrial complexes, with a capacity of > 33 kilovolts but < 275 kilovolts	Construction of a power line to link the PV Power plant to the existing Eskom Collett substation

Listed activity as described in GN R 983, 984 and 985	Description of project activity that triggers listed activity
GNR 983, Activity 12: The development of (x) buildings exceeding 100 square metres in size; or (xii) infrastructure or structures with a physical footprint of 100 square metres or more; where such development occurs- (a) within a watercourse; (b) in front of a development setback; or (c) if no development setback exists, within 32 metres of a watercourse, measured from the edge of a watercourse; excluding (dd) where such development occurs within an urban area; or (ee) where such development occurs within existing roads or road reserves.	Construction of 75 MW Photo Voltaic (PV) Power plant with associated infrastructure
GNR 983, Activity 19: The infilling or depositing of any material of more than 5 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 5 cubic metres from (i) a watercourse.	Construction of 75 MW Photo Voltaic (PV) Power plant with associated infrastructure

4 Location of the proposed PV Plant

The area required for the development of the PV plant is determined by a number of factors. Given that the site is mostly flat, with a northern orientation, the key factors determining the size of the site needed are the production capacity of the plant and the technology used. The density of development is highest for fixed rack systems and lowest if two axis trackers are used. Fixed rack PV systems typically requires two to three hectares per MW and a PV plant using trackers would need 4.5 to six ha/MW. The current trend in the highly competitive Independent Power Producer market implies that either fixed structures or horizontal single axis tracking systems will most likely be used for this development.

The 75 MW PV plant would thus cover an area of approximately 225 hectares on the farms Harmsfontein 335 and Remainder of Brakke Kuilen 180, near Middelburg in the Eastern Cape.

4.1 Farm names, physical addresses and 21 digit Surveyor General Codes of each cadastral land parcel

4.1.1 Remainder of Brakke Kuilen No.180, Inxuba Yethemba Municipality, Administrative District of Middelburg, Eastern Cape Province

C	0	4	8	0	0	0	0	0	0	0	0	0	1	8	0	0	0	0	0	0
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4.1.2 Harmsfontein No.335, Inxuba Yethemba Municipality, Administrative District of Middelburg, Eastern Cape Province

C	0	4	8	0	0	0	0	0	0	0	0	0	3	3	5	0	0	0	0	0
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4.2 Locality plan

See figures 1 & 2 for plans which locate the proposed PV power plant at an appropriate scale.

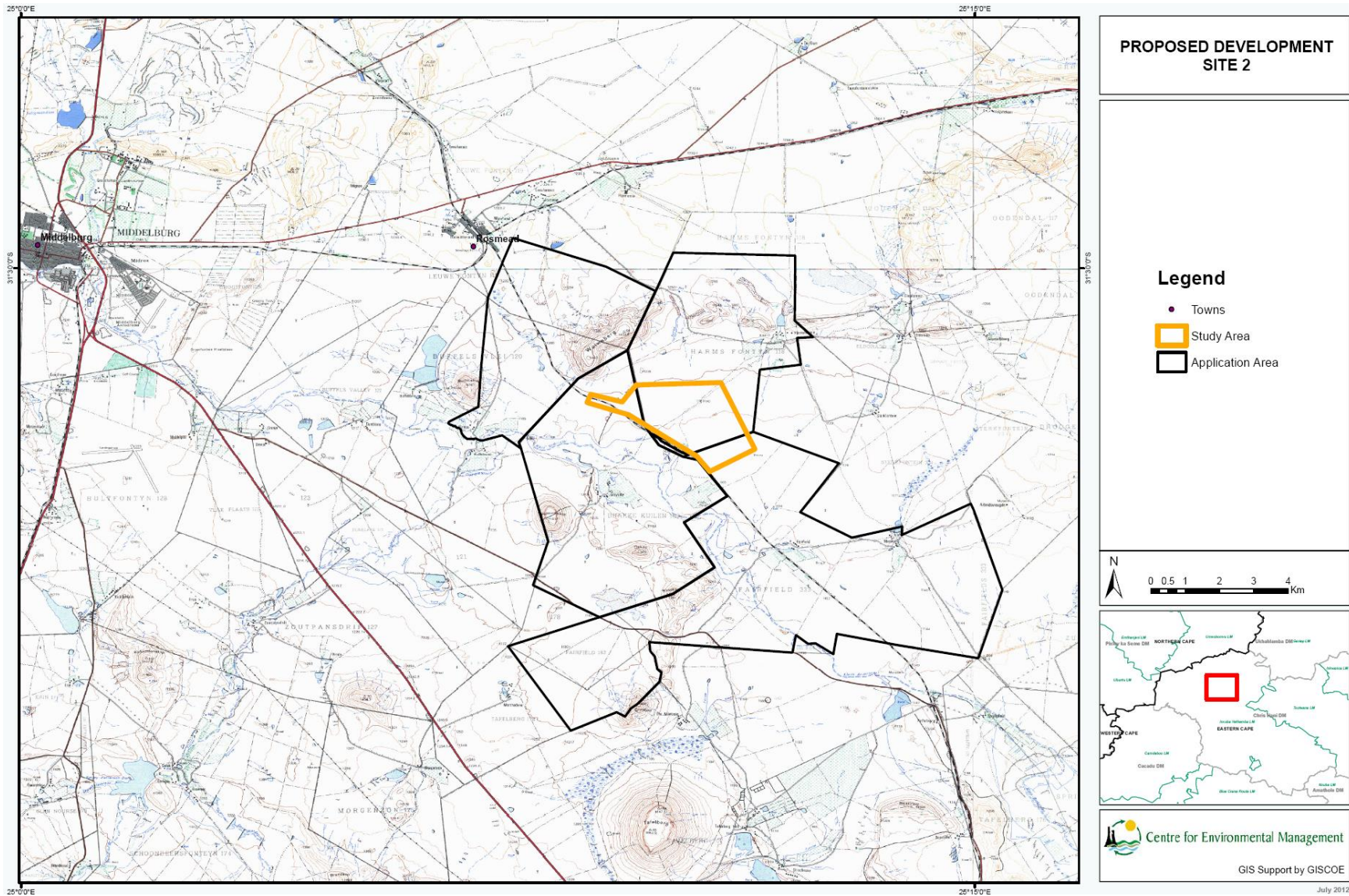


Figure 1: 1:50 000 locality map, indicating the properties on which the proposed PV solar facility will be constructed.

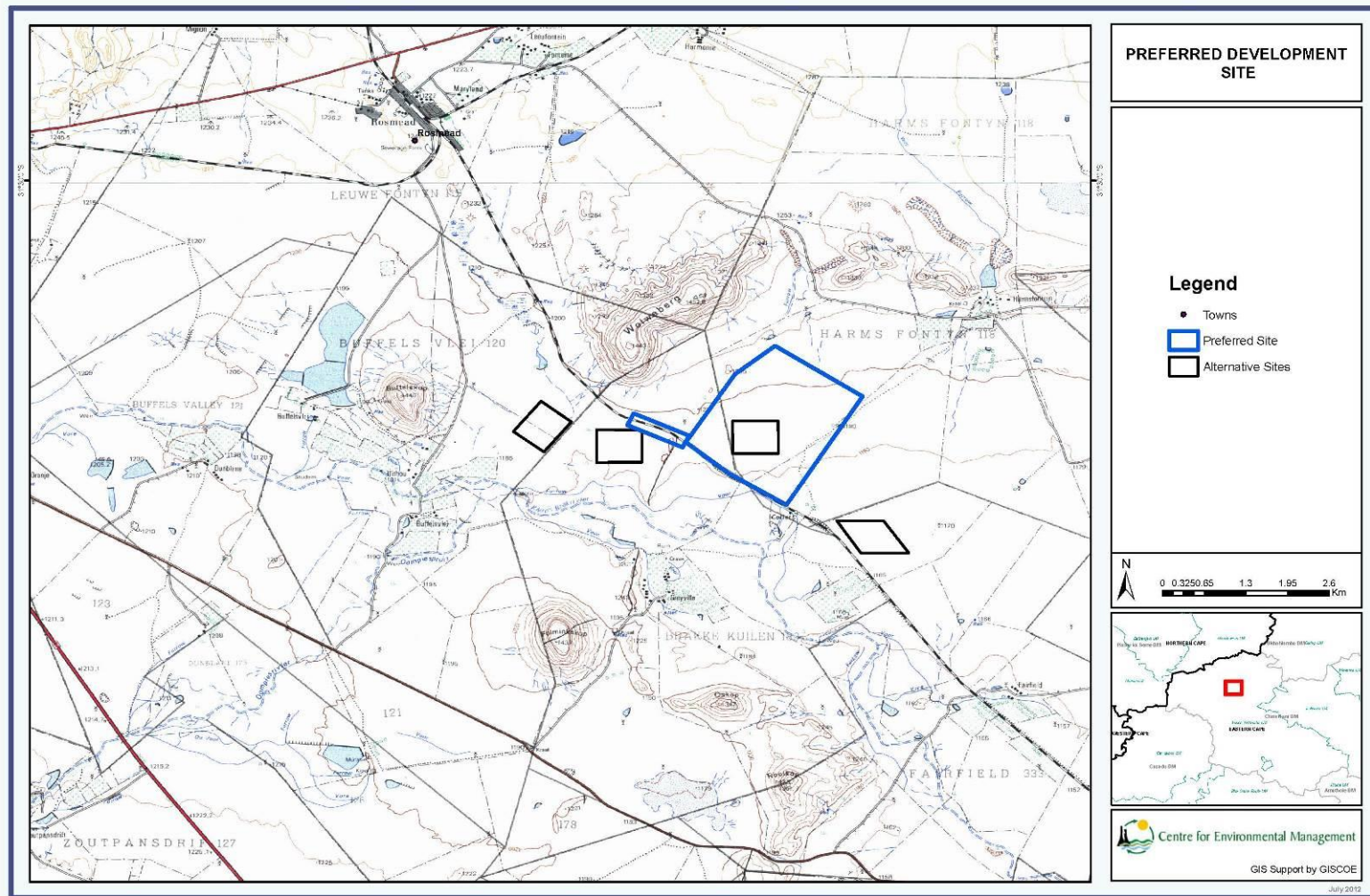


Figure 2: 1:50 000 locality map, indicating the site lay-out alternatives for the proposed PV solar facility.

5 Description of the policy and legislative context within which the PV Plant is proposed

(Legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks and instruments.)

The aim of this section of the report is to provide a brief overview of the pertinent policies, as well as legal and administrative requirements applicable to the proposed project.

5.1 Applicable policies, legislation and guidelines

Relevant policies, legislation and guidelines applicable to the establishment and operation of the proposed PV solar facility are summarized in Table 4.

5.2 Other authorisations that may be required

In addition to the Environmental Authorisation in terms of the NEMA, authorisations may also be required in terms of the NWA, MPRDA, NHRA, Aviation Act, as well as the SALA. An overview of the environmental-related authorisations that may be required for the proposed activity is provided in below.

5.2.1 Authorisations required in terms of the NWA:

The proposed activity will also trigger a number of water uses in terms of the National Water Act (No. 36 of 1998) and therefore require water use authorisation (Table 5).

Table 4: Water uses published in the NWA (No. 36 of 1998).

Section number	Activity description
Section 21(a)	<i>Taking water from a water resource</i>
Section 21(c)	<i>Impeding or diverting the flow of water in a watercourse.</i>
Section 21(i)	<i>Altering the bed, banks, course or characteristics of a watercourse.</i>
Section 21(g)	<i>Disposing of waste in a manner which may detrimentally impact on a water resource</i>

5.2.2 Authorisations required in terms of the Minerals and Petroleum Resources Development Act (MPRDA) (No. 28 of 2002):

The proposed activity will require a Section 53 approval by the Minister of Mineral Resources to use the surface of the land in any way which may be contrary to any object of this Act or which is likely to impede any such object (sterilisation of the surface).

5.2.3 Authorisations required in terms of the National Heritage Resources Act (No 25 Of 1999):

Should the specialist study uncover any cultural/heritage resource artefacts or sites on the proposed development site, permission may be sought from the South African Heritage Resources Agency to remove or destroy such artefacts and disturb or destroy such sites if these cannot be incorporated in the final site-layout.

Table 5: Relevant policies, legislation and guidelines considered.

Title of policy, legislation or guideline	Authority	Application
Policies		
White Paper on Energy Policy (1998)	DoE	<p>The policy outlines five key objectives:</p> <ul style="list-style-type: none"> • increasing access to affordable energy services; • improving energy governance; • stimulating economic development; • managing energy-related environmental and health impacts; and • securing supply through diversity. <p>These objectives have subsequently formed the foundation and informed the development of energy policy in South Africa and still remain relevant. The white paper also indicates the government's inclination to support renewable energy technologies and to work towards establishing national targets for reducing emissions.</p>
White Paper on Renewable Energy (2003)	DoE	<p>The White Paper supplements the White Paper on Energy Policy, which recognises that the medium and long-term potential of renewable energy is significant. This Paper sets out Government's vision, policy principles, strategic goals and objectives for promoting and implementing renewable energy in South Africa.</p> <p>Recognizing the importance of reducing the damage done to the environment by South Africa's reliance on electricity from coal and the need for diversification of energy resources, it commits the Government to a number of actions to ensure that renewable energy becomes a significant part of South Africa's energy portfolio. These measures include fiscal mechanisms, regulatory instruments, and standards to promote R&D and investment in renewables and educational programs to raise public awareness.</p> <p>The White Paper envisioned reaching 10,000 GWh of renewable energy generation by 2013.</p>

Title of policy, legislation or guideline	Authority	Application
Integrated Energy Plan (IEP)	DoE	<p>The IEP is a multi-faceted long term energy policy which has multiple objectives:</p> <ul style="list-style-type: none"> • guide the development of energy policies and where relevant set the framework for regulations in the energy sector. • guide the selection of appropriate technologies to meet energy demand (i.e. what types and size of new power plants and refineries should be built and what prices should be charged for fuels). • guide the investment and development of energy infrastructure in South Africa. <p>The IEP is a national plan, which provide a roadmap of the future energy landscape for South Africa, which guides future energy infrastructure investments and policy development. It covers the entire energy sector and considers all elements of the energy value chain and aims to guide future energy infrastructure investments, identify and recommend policy development to shape the future energy landscape of the country. It also seeks to quantify and provide feedback on the extent to which policy objectives outside the sector may impact on the attainment of energy sector imperatives and <i>vice versa</i>.</p> <p>The objectives of the IEP are to:</p> <ul style="list-style-type: none"> • ensure security of supply; • minimise the cost of energy; • promote the creation of jobs and localisation; • minimise negative environmental impacts from the energy sector; • promote the conservation of water; • diversify supply sources and primary sources of energy; • promote energy efficiency in the economy; and • increase access to modern energy. <p>As a new, cleaner technology, that is becoming more and more price competitive, the contribution of renewable (PV solar) energy will be playing an ever increasing role in the IEP.</p>

Title of policy, legislation or guideline	Authority	Application
Integrated Resource Plan 2010-2030 (2011)	DoE	<p>The Integrated Resource Plan (IRP) 2010-30 was promulgated in March 2011 as a “living plan” to guide future energy infrastructure investments over the period up to 2050, identify and recommend policy options to shape the future energy landscape of the country. It only considers the electricity supply sector, and regulates the long-term increase of electricity generation capacity as well as the composition of the energy mix.</p> <p>The IRP process aims to balance similar objectives to the IEP, which are:</p> <ul style="list-style-type: none"> • security of supply, • cost of electricity, • job creation and localization, • minimal negative environmental impact, • minimal water usage, • diversity of supply sources (energy mix); and • promotion of energy access. <p>The IRP is the cornerstone of the South African renewable energy legal framework. According to the IRP, 9,770 MW of solar PV capacity should be installed in South Africa by 2030. As a new, cleaner technology, that is becoming more and more price competitive, the contribution of renewable (PV solar) energy will be playing an ever increasing role in the IRP.</p>
Renewable Energy Independent Power Producer Procurement Program (REIPPPP)		<p>The DoE has determined that 3 725 megawatts (MW), to be generated from renewable energy sources is required to ensure the continued uninterrupted supply of electricity in South Africa. This 3 725 MW is broadly in accordance with the capacity allocated to Renewable Energy generation in IRP 2010-2030.</p> <p>The IPP Procurement Programme has been designed so as to contribute towards the target of 3 725 megawatts and towards socioeconomic and environmentally sustainable growth, and to start and stimulate the renewable industry in South Africa.</p> <p>Solar PV systems with a capacity of > 5 MW are regulated by the REIPPPP, which is</p>

Title of policy, legislation or guideline	Authority	Application
		<p>managed by the DoE. It is a tender program that makes use of a competitive bidding system. The REIPPPP was initially designed to contribute 3,725 MW of renewable energy capacity in South Africa, but this figure was increased by 3,200 MW in 2012 and by another 6,200 MW 2015 in light of the great success the program has enjoyed. In terms of the REIPPPP, bidders are required to propose a tariff for the provision of electricity from the renewable energy plant. Should the bid be accepted, the proposed tariff forms the basis for the power purchase agreement entered into between the bidder and South Africa's state owned electricity generator, supplier and distributor - Eskom.</p> <p>In just over three years, four rounds of competitive bidding have been successfully completed. From a standing start, numerous projects across different renewable technologies have raised financing, completed construction and grid connection and achieved commercial operations, and many more will do so in the next few years. The projects have brought much needed new capacity to the South African grid, helping to keep the lights on and industry producing. They have also brought South Africa's first substantial renewable output in a country dominated by coal fired power. To date, the programme has attracted over \$10bn of foreign investment in respect of approximately 4,000 MW of new renewable electricity generation capacity.</p> <p>The REIPP Procurement Programme has also brought significant benefits to South Africa in key areas such as local ownership and participation by South Africans in the power sector, new jobs and the creation of a local manufacturing industry.</p>
Legislation		
National Environmental Management Act (No. 107 of 1998) (NEMA)	DEA/ DEDEAT	Applicable to the management of environmental impacts. It provides requirements for the sound management of the environment and sustainability principles, which must be complied with. It also makes provision for the identification and assessment of activities that are potentially detrimental to the environment and which require

Title of policy, legislation or guideline	Authority	Application
		authorization from the relevant authorities based on the findings of an environmental assessment.
Environmental Impact Assessment Regulations (GNR. 982, 4 December 2014).	DEA/ DEDEAT	The EIA regulations provide the 2014 revised requirements for the EIA process as well as the contents for scoping and EIA reports. The Scoping and EIA Process is being undertaken in terms of the National Environmental Management Act (No. 107 of 1998) (NEMA). The EIA process will follow the regulations as stipulated in GN R. 982.
List of Activities and Competent Authorities identified in terms of Sections 24(2) and 24D (Listing Notice 1 to 3) (GNR. 983, 984, & 985, 4 December 2014	DEA/ DEDEAT	Listing notices to identify activities that would require environmental authorisations prior to commencement of that activity and to identify competent authorities.
Identification of the minister as competent authority for the consideration of environmental authorisations for activities related to the Integrated Resource Plan (IRP) 2010 - 2030 (GN 779, 1 July 2016)	DEA/ DEDEAT	Identification of the minister as competent authority for the consideration and processing of environmental authorisations and amendments thereto for activities related to the Integrated Resource Plan 2010-2030.
National Water Act (Act 36 of 1998) (NWA)	DWS	Aims to ensure that South Africa's water resources are protected, used, developed, conserved, managed and controlled in responsible ways. It provides requirements for the management of the water resources to achieve sustainable use of water for the benefit of all water users. This requires the integrated management of water resources, as well as that the quality of water resources is protected.
Revision of general authorisations in terms of section 39 of the National Water Act (No. 36 of 1998) (GN. 1091, 6 September 2013)	DWS	Provides specifications for the general authorisation of the following water uses: <ul style="list-style-type: none"> • Impeding or diverting the flow of water in a watercourse; • Altering the bed, banks, course or characteristics of a watercourse.
Revision of General Authorisations in terms of section 39 of the National Water Act (No. 36 of 1998) (GN 399, 26 March 2004)	DWS	Provides specifications for the general authorisation of the following water uses: <ul style="list-style-type: none"> • The taking of water from a water resource and storage of water [Sections 21 (a) and (b)]

Title of policy, legislation or guideline	Authority	Application
Replacement of general authorisation in terms of section 39 of the National Water Act (No. 36 of 1998) (GN 1199, 18 December 2009)	DWS	Provides specifications for the general authorisation of the following water uses: <ul style="list-style-type: none"> Disposing of waste in a manner which may detrimentally impact on a water resource [Section 21 (g)].
National Environmental Management Waste Act (No. 59 of 2008)	DEA/ DEDEAT	Provides the legal framework for the management of general and hazardous waste in South Africa to protect health, wellbeing and the environment by providing: <ul style="list-style-type: none"> reasonable measures for the prevention of pollution and ecological degradation and for securing ecologically sustainable development; national norms and standards for regulating the management of waste by all spheres of government; specific waste management measures; for the licensing and control of waste management activities.
List of waste management activities that have, or are likely to have, a detrimental effect on the environment (GN. 921, 29 November 2013)	DEA (Hazardous waste) /DEDEAT (General waste)	Listed activities to identify whether an activity requires the application for a waste management licence, prior to commencement of the activity. Category A activities require the application for a waste management licence, supported by a basic assessment process in terms of NEMA; Category B activities require the application for a waste management licence, supported by scoping and a full EIA process; while activities listed in Category C need to be registered with the DEA. For Category C activities, there are promulgated norms and standards that need to be complied with.
National norms and standards for the storage of waste (GN. 926, 29 November 2013)	DEA/ DEDEAT	Provides key requirements for general and hazardous waste facilities as far as operational management, design, monitoring, auditing and record-keeping are concerned.
National Environmental Management: Biodiversity Act (No. 10 of 2004) (NEM:BA)	DEA/ DEDEAT	Provides for the management and conservation of South Africa's biodiversity within the framework of the NEMA and the protection of species and ecosystems that warrant national protection.
Cape Nature and Environmental Conservation Ordinance (No. 19 of 1974)	DEDEAT	Aims to protect particular plant and animal species through permitting requirements associated with lists of protected species.

Title of policy, legislation or guideline	Authority	Application
Conservation of Agricultural Resources Act (Act 43 of 1983) (CARA)	DAFF	Provides for control over the utilization of the natural agricultural resources of South Africa in order to promote the conservation of the soil, the water sources and the vegetation, and the combating of weeds and invader plants.
National Veld and Forest Fire Act (Act 101 of 1998) (NVFFA)	DAFF	Sets up regulations to help prevent veld, forest and mountain fires, and to minimize the damage they cause by developing a national fire danger rating, collecting fire related statistics and campaigning awareness of the dangers of fires and by outlining the responsibilities of property owners in the case of fire, transferring the burden to the property owner.
Fencing Act (No. 31 of 1963) (FA)	DAFF	Regulates the removal of any tree standing in the immediate line of a fence and the clearing of bush along the line of the fence up to 1.5 meters on each side thereof when erecting a boundary fence.
Subdivision of Agricultural Land Act (Act 70 of 1970) (SALA)	DAFF	The purpose of the Act is to control the subdivision and the long term (10 years or longer) lease of agricultural land and, in connection therewith, the use of agricultural land. The Minister of Agriculture, Forestry and Fisheries must consent to the proposed subdivision or long term lease.
National Forest Act (No. 84 of 1998)	DAFF	This act recognizes that everyone in South Africa has a constitutional right to have the environment protected for the benefit of present and future generations and acknowledges that natural forests and woodlands need to be conserved and developed according to the principles of sustainable management. The Act legislates the sustainable use of forests for environmental, economic, educational, health, recreational, cultural and spiritual purposes, and includes special measures for the protection of certain forests and trees.
The National Heritage Resources Act (No. 25 of 1999), particularly Chapter II, Section 38	SAHRA	Provides for the protection of heritage resources and the communication of any potential impacts on heritage resources to the South African Heritage Resource Authority (SAHRA) for statutory comment. The Act makes provision for the potential destruction to existing sites, pending the

Title of policy, legislation or guideline	Authority	Application
		archaeologist's recommendations through permitting procedures.
National Road Traffic Act, 1996 (No. 93 of 1996)	DoT	Provides the regulatory requirements that must be adhered to during the loading, offloading and transportation of dangerous goods.
National Road Traffic Regulations (GNR 225, 19 November 2013)	DoT Municipality	The regulations provide for very specific requirements applicable to the loading, offloading and transportation of dangerous goods.
Spatial Planning and Land Use Management Act (Act 16 of 2013) (SPLUMA)	National, Provincial and Local Government	Provides for a single, integrated spatial planning and land use management system for South Africa, as well as for the sustainable and efficient use of land.
Mineral & Petroleum Resources Development Act (Act 28 of 2002) (MPRDA)	DMR	Governs the legal tenure of mineral properties within South Africa. Requires approval by the Minister of Mineral Resources to use the surface of the land in any way which may be contrary to any object of this Act or which is likely to impede any such object (sterilisation of the surface).
Occupational Health and Safety Act (No. 85 of 1993)	DoL	Provides for the regulation of all work practices in the workplace to protect the occupational health and safety of employees
Hazardous Chemical Substances Regulations (GNR. 1179, 25 August 1995)	DoL	Provides important operational specifications for the management of hazardous chemical substances.
Regulations For hazardous Biological Agents (GNR. 1390 of 27 December 2001)	DoL	Provides the requirements for the labelling, packaging, transporting and storage of hazardous biological agents.
Civil Aviation Act (Act 13 of 2009) (CAA)	CAA	Provides for measures directed at more effective control of the safety and security of aircraft, airports and the like.
Promotion of Access to Information Act (Act 2 of 2000) (PAIA)	DEA/ DEDEAT	Recognises the constitutional right of access to any information held by the state and by another person when that information is required to exercise or protect any rights. Aims to foster a culture of transparency and accountability in public and private bodies and to promote a society in which people have access to information that enables them to exercise and protect their rights.

Title of policy, legislation or guideline	Authority	Application
Promotion of Administrative Justice Act (Act 3 of 2000) (PAJA)	DEA/ DEDEAT	Promote and ensures the constitutional right to just administrative action. It sets out the general rules and principles to be followed in exercising administrative power to ensure that government officials make decisions in a fair way...
National standards, some applicable to the transportation of dangerous goods by road		
SANS 10234 (2008) (English): Globally Harmonized System of classification and labelling of chemicals (GHS)	DoT Municipality	Provides the classification framework for the classification of hazardous waste in line with its physical, health and environmental hazards. The Waste Classification and Management Regulations are based on this classification system.
SANS 10228 (2012): The identification and classification of dangerous goods for transport by road and rail modes	DoT Municipality	Provides the requirements for the classification of dangerous goods for transport into one of nine main categories.
SANS 10231 - 3 (2011): Transport of dangerous goods - Operational requirements for road vehicles – Emergency response guides	DoT Municipality	Provides operational requirements applicable to emergency response guides for road vehicles transporting dangerous goods.
SANS 1518 (2011) Transport of dangerous goods – Design, construction, testing, approval and maintenance for road vehicles and portable tanks	DoT Municipality	Provides the requirements for the design, construction, testing, approval and maintenance of road vehicles and portable tanks, responsible for the transportation of dangerous goods.
SANS 10229- 1 (2010) Packaging of dangerous goods for road & rail transportation in South Africa – Packaging	DoT Municipality	Provides the packaging and labelling requirements for dangerous goods that are transported by road or rail
SANS 10229- 2 (2010) Packaging of dangerous goods for road & rail transportation in South Africa – Large Packaging	DoT Municipality	Provides the packaging and labelling requirements for large packages containing dangerous goods that are transported by road or rail.
SANS 10231 (2010) (English): Transport of	DoT	Provides operational requirements applicable to vehicles transporting dangerous

Title of policy, legislation or guideline	Authority	Application
dangerous goods - Operational requirements for road vehicles	Municipality	goods by road.
SANS 10231 - 1 (2010): Transport of dangerous goods - Operational requirements for road vehicles – Emergency information system for road transport.	DoT Municipality	Provides operational requirements applicable to emergency information systems for road vehicles transporting dangerous goods.
Guideline Documents		
Scoping, Integrated Environmental Management (IEM), Information Series 2	DEA/ DEDEAT	Provides guidance on the EIA process.
Stakeholder engagement, IEM, Information Series 3	DEA/ DEDEAT	Provides guidance on the EIA process.
Specialist studies, IEM, Information Series 4	DEA/ DEDEAT	Provides guidance on the EIA process.
Impact significance, IEM, Information Series 5	DEA/ DEDEAT	Provides guidance on the EIA process.
Cumulative effects assessment, IEM, Information Series 7	DEA/ DEDEAT	Provides guidance on the EIA process.
Alternatives in EIA, IEM, Information Series 11	DEA/ DEDEAT	Provides guidance on the EIA process.
Environmental Management Plans, IEM, Information Series 12	DEA/ DEDEAT	Provides guidance on the EIA process.
Environmental impact reporting, IEM, Information Series 15	DEA/ DEDEAT	Provides guidance on the EIA process.
Guideline on Need and Desirability in terms	DEA/	Provides guidance on the EIA process.

Title of policy, legislation or guideline	Authority	Application
of the EIA Regulations (GN 891, October 2014), IEM Guideline Series 9	DEDEAT	
Guideline for determining the scope of specialist involvement in EIA processes	DEA/ DEDEAT	Provides guidance on the use of specialists in the EIA process.
Guideline for the review of specialist input into the EIA process	DEA/ DEDEAT	Provides guidance on the use of specialists in the EIA process.
Guideline for involving biodiversity specialists in EIA processes	DEA/ DEDEAT	Provides guidance on the use of specialists in the EIA process.
Guideline for involving heritage specialists in EIA processes	DEA/ DEDEAT	Provides guidance on the use of specialists in the EIA process.
Guideline for involving visual and aesthetic specialists in EIA processes	DEA/ DEDEAT	Provides guidance on the use of specialists in the EIA process.
Guideline for involving economists in EIA processes	DEA/ DEDEAT	Provides guidance on the use of specialists in the EIA process.
Guideline for involving hydro-geologists in EIA processes	DEA/ DEDEAT	Provides guidance on the use of specialists in the EIA process.
Guideline for involving social assessment specialists in EIA processes	DEA/ DEDEAT	Provides guidance on the use of specialists in the EIA process.

5.2.4 Authorisations required in terms of the Aviation Act (No. 13 of 2009):

The Civil Aviation Regulations (CAR Part 139.01.33, 1997) issued in terms of the Aviation Act, as amended, regulates obstacles outside aerodromes or heliports which may impact on navigational airspace and affect aviation safety. Information will be submitted to the Civil Aviation Authorities so that they can ensure that any infrastructure constructed complies with the regulation requirements for obstacle limitations and markings outside an aerodrome or heliport.

5.2.5 Authorisations required in terms of the Subdivision of Agricultural Land Act (No 70 of 1970):

The Act prohibits the lease in respect of a portion of agricultural land of which the period is 10 years or longer, or which is renewable from time to time at the will of the lessee, either by the continuation of the original lease or by entering into a new lease, indefinitely or for periods which together with the first period of the lease amount in all to not less than 10 years, without the consent of the Minister of Agriculture, Forestry and Fisheries. Similarly, no right to a portion of agricultural land, whether surveyed or not, shall be sold or granted for a period of more than 10 years or to the same person for periods aggregating more than 10 years, or advertised for sale or with a view to any such granting, except for the purposes of a mine without such consent. The consent of the Minister of Agriculture, Forestry and Fisheries for the long term lease of the land (20 years) of the proposed development site will be sought before the project commences.

6 Motivation for the need and desirability for the proposed PV facility, including the need and desirability of the facility in the context of the preferred location

The consideration of "need and desirability" in EIA decision-making requires the consideration of the strategic context of the development proposal along with the broader societal needs and the public interest. The concept of "need and desirability" relates to, amongst others, the nature, scale and location of development being proposed, as well as the wise use of land. Essentially, the concept of "need and desirability" can be explained in terms of the general meaning of its two components in which need refers to time and desirability refers to place, i.e.

- Is this the right time for the type of land-use/activity being proposed?
- Is it the right place for locating the type of land-use/activity being proposed?

6.1 Need for the PV facility - Is this the right time for the development of photovoltaic facilities in South Africa?

6.1.1 South Africa's energy situation

South Africa is a developing country and associated energy demand is also ever increasing. The country relies heavily on coal to meet its energy needs because it is well-endowed with coal resources; in particular, South Africa has developed an efficient, large-scale, coal-based power generation system that provides low-cost electricity, through a grid system that is being extended to rural areas, to millions of residential, commercial and institutional consumers.

However, South Africa also recognises that the emissions of greenhouse gases, such as carbon dioxide, from the use of fossil fuels such as coal and petroleum products has led to increasing concerns worldwide about global climate change.

6.1.2 South Africa's solar potential

South Africa experiences some of the highest levels of solar radiation in the World. It has a considerable solar resource potential for solar water heating applications, solar photovoltaic and solar thermal power generation. The Eastern Cape, including the Middleburg area, has great potential to generate electricity from solar energy and the proposed project will contribute significantly to achieving government's objective by supplying the Middleburg area with electricity generated from the sun.

6.1.3 The potential of photovoltaic technology

PV electricity generation is a non-consumptive use of a natural resource and consumes no fuel for its continuing operation. Furthermore, this type of energy produces an insignificant quantity of greenhouse gases over its lifecycle as compared to conventional coal-fired power stations. The operational phase of a solar facility does not produce CO₂, SO₂, Hg, particulates or any other type of air pollution.

Photovoltaic (PV) systems are widely applied for powering conventional and cellular telecommunications networks in South Africa. They are also applied in small-scale remote stand-alone power supplies for domestic use, game farms, household and community water pumping schemes. Installed PV has solar to electric efficiencies in excess of 8% and typical load factor of 22%. The installed PV capacity in South Africa in 2000 was estimated at just over 8 MW.

6.1.4 South African government initiatives to promote renewable energy

South Africa is well endowed with abundant renewable energy resources that can be converted to productive energy uses and serve as sustainable alternatives to fossil fuels. However, these resources have remained largely untapped due to the utilisation of these resources not being cost competitive in many locations, when compared to South Africa's fossil-based energy supply industry. There are many reasons for this discrepancy in cost, including the fact that the lower cost associated with fossil fuel use does not fully account for its adverse impact on the environment.

The South Africa's Government is committed to make due contribution to the global effort to mitigate greenhouse gas emissions. For this purpose, the Government is developing an enabling environment through the introduction of fiscal and financial support mechanisms, within an appropriate legal and regulatory framework, to allow renewable energy technologies to compete with fossil-based technologies, so that the renewable energy industry can operate, grow, and contribute positively to the South African economy and to the global environment.

The PV facility will benefit society in general by alleviating the pressure of electricity generation from coal in a small way and also contributing to the government's target for renewable energy.

6.2 Desirability of the PV facility - • Is it the right place for locating the proposed photovoltaic facilities?

6.2.1 Site selection considerations

The ideal PV plant site meets the following criteria:

- High solar irradiation area to allow for the maximisation of the solar energy received;
- Flat to gently sloped terrain to allow for the optimisation of the layouts and minimum interference with respect to shadows etc. between the individual trackers;
- Northern orientation or no obstructions to the north to allow for efficiency;
- Not on high potential agricultural land to avoid conflicts with competing activities and the national priority of food security;
- Not in environmentally sensitive areas e.g. in wetlands or in close proximity to water courses;
- Suitable ground conditions to ensure the stability of the structures and reduce construction costs;
- Adjacent to an existing sub-station on the grid to avoid the necessity of transmission infrastructure;
- Existing capacity at the sub-station and local grid to receive the generated electricity so the electricity generated by the plant can be used locally from the time of commissioning, thus avoiding infrastructure costs and transmission losses and costs; and
- Potential to expand the facility - about the sub-station having a reasonable demand growth and there being space for the expansion of the PV plant.

The site selection process that led to the identification of the Collett site was based on locating sites in the Eastern Cape that matched as many as possible of the ideal criteria for the development of a PV electricity generation plant. The selection criteria filtered out alternative sites which are in some way or another not suitable for the development of a PV facility that is environmentally and economically sustainable. This resulted in the current site being selected, first on a regional level and thereafter on a farm level.

The power will feed into the Eskom electricity grid via the existing Collett traction substation that is situated at 31°32'03.54"S and 25°08'59.03"E, just south of the Rosmead Siding near Middelburg in the Eastern Cape (Figure 3). The substation serves the electrified railway line between Port Elizabeth and De Aar and the electricity will be used for consumption in the local distribution network. Eskom has confirmed that there currently is capacity to feed up to 40 MW into the Collett Substation.

6.2.2 Local economic benefit of the PV facility

Economic activities in the region is currently primarily dependent on farming related activities. Economic growth opportunities are limited and the authorities are struggling to develop and maintain the current service infrastructure networks.

The proposed development will contribute to poverty alleviation in the region and also contribute to the development and maintenance of service infrastructure. The expected capital value of the development on completion is R1.6 billion and the expected annual income that will be generated by or as a result of the development is R260 million.

The proposed development will also benefit the local community of Middelburg directly by generating limited skilled and unskilled employment opportunities for the local community during both the construction and operational phases. During the construction phase of the project, 3310 person-month employment opportunities will be created at an expected value of R48 million, 64% of which will accrue to previously disadvantaged individuals. 26 Permanent employment opportunities will be created during the operational phase of the PV facility.

The proposed development will furthermore benefit the local community indirectly through benefits associated with the provision of accommodation, catering and local spending by contractors. The expected current value of employment activities will be R3.76 million during the first 10 years, 60% of which will accrue to previously disadvantaged individuals.

6.2.3 Land use impacts of the PV facility

The proposed land use fits well within the land use in the surrounding area, which is used for extensive livestock farming. It also conforms to the SDF and planning vision for the local municipality. The benefits of the construction and operation of the PV facility will outweigh the negative impacts thereof, provided that the proposed mitigation measures are implemented effectively. Due to the fact that the proposed PV facility will largely be screened from surrounding areas by topographical features, it should not impact on the sense of place. Furthermore, it will not compromise the urban edge and will not affect any person's rights.

6.2.4 Other socio-economic benefits of the PV facility

The Renewable Energy Independent Power Producers Procurement Programme (REIPPP) requires that every project must have a proportion of participation/ownership by local communities. This requirement will be met through the establishment of an Educational Trust that will:

- provide scholarships to matriculants from the Middelburg area who wish to study engineering, science or maths at tertiary level by way of bursaries or scholarships;
- subsidise science and maths teachers' salaries at schools in the Middelburg area so as to enable those schools to attract good and well qualified teachers;
- subsidise the purchase of laboratory equipment and mathematical teaching aids in schools in the Middelburg area.

7 Details of the alternative evaluation process followed to reach the proposed preferred activity, site and location within the site

The following section will describe the alternatives that have been considered AE-AMD and also the options that have been chosen to be implemented.

7.1 Process followed to reach the preferred site

See description under 6.2.1.

7.2 Process followed to reach the preferred site lay-out alternatives

The area required for the development of a PV plant is normally determined by a number of factors. Given that this site is mostly flat, with a northern orientation, the key factors determining the size of the site needed, are the production capacity of the proposed PV power plant and the technology used.

The density of development is highest for fixed rack systems and lowest if two axis trackers are used. Typically fixed rack systems would take up about two to three Ha/MW and a PV plant using trackers would need about 4.5 to six Ha/MW. The current trend highly competitive Independent Power Producer market implies that either fixed structures or horizontal single axis tracking systems will most likely be used. Thus the 75 MW plant could use about 225 hectares.

AMDA investigated the following site layout alternatives for the development (Figure 2):

- Four separate fixed structure PV plants, with associated infrastructure, each <20ha and <20 MW, based on four separate properties;
- One 75 MW PV plant, with associated infrastructure, developed on a single 225 ha site, located on a combination of three properties.

However, there will be environmental and economic benefits to having a single 75 MW plant, covering 225 ha. Having four separate smaller facilities requires more infrastructure, such as roads, fences, power lines etc., with associated bigger environmental impacts and economic costs. In addition, the four smaller sites were also located in ecologically more sensitive areas, i.e. closer to the water course and the dolerite ridges than the preferred, bigger site.

For purposes of the EIA it was decided to investigate a larger area than required for the PV plant envisaged for the application. This is in order to provide for sufficient space for the preferred technology and flexibility in the positioning and detail layout of the plant in response to on site or environmental conditions or for design optimisation. To this end the draft Site Development Plan shown is actually for a 100 MW fixed rack PV facility and the final 75 MW will be smaller than that analysed in the process.

7.3 Process that was and will be followed to reached the preferred technological and structural alternatives

Photovoltaic power plants have a wide range of technologies that can be considered for incorporation into the plant. The solar PV industry is also a rapidly developing industry, where the advances in the general efficiencies of the technology and the reduction of production costs are enormous. Therefore, it would not be feasible to commit to specific technologies and manufacturers at this stage of the project.

During the bid process, the developer will put out a Request for Offers (RFO) from credible EPC Contractors who will make proposals with respect to the technology to be used and possible equipment suppliers for the PV plant. These will include the PV module manufacturer, the capacity of the modules, the support structure or tracker type, and manufacturer, the inverter type, etc. The design of the facility and the selection of equipment will be tailored for the specific site conditions, such as climate etc. Some of

the technological alternatives that will have to be finalised later are discussed in more detail below.

7.3.1 General layout design criteria

The choice of the technology or more specifically, the PV module and tracker or rack structure is the chief determinant in the layout of the PV plant. Fixed rack structures, single and two axis trackers all have different spatial requirements.

An optimised layout or spatial arrangement of the solar field will be prepared based on the performance criteria and spatial requirements of the preferred equipment choices above taking into account the further design criteria listed below.

- 16 m from the centre of any power lines, either they are single power lines or double power lines;
- 95 m from the centre of provincial roads (or a relaxation to a lesser distance);
- 16 m to any Telkom line;
- A minimum distance of 10 m to the perimeter fence to prevent theft and avoid shadows cast by the fence;
- Internal and perimeter service roads of 3m surface width and 5 m reserve width;
- A main access road of 10 m reserve width.

7.3.2 Foundations

A detailed geotechnical study will be carried out in order to provide data for the selection of the foundation. Depending on the structure or tracker that is selected, the following foundation options may be considered:

- Mass concrete block foundation
- Ground screw foundation
- Concrete pile foundation
- Vibratory driven steel pile foundation

For fixed or rack structures, either driven steel piles or small concrete footings are cast in the ground for the foundations. These concrete foundations are typically of the same size as for small buildings.

The preferred technology for trackers is the vibratory driven steel pile foundation. Depending on the ground conditions, a concrete pile may be required.

7.3.3 Structures

In order to support the PV modules, a steel structure must be used. Three different options will be considered:

- a fixed or rack structure;
- a single axis tracker (horizontal, vertical or polar axis); and
- a double axis tracker.

The current trend is towards rack structures or possibly horizontal single axis trackers because of the superior production rates and cost effectiveness.

Fixed or rack structures (Figure 7)

A typical rack or fixed structure will have two rows of 20 modules (2 strings). The modules are placed in portrait arrangement. The foundation technology is usually a direct-driven (rammed) installation, with a ramming depth subject to the soil characteristics.



Figure 7: Fixed or rack structure PV power plant

The design of the fittings for fixing the modules to the rack structures will enable thermal expansion of the metal without transferring mechanical loads that could affect the integrity of the modules. The structure will probably have anti-theft bolts.

Single-axis tracker (Figure 8)

With a typical horizontal single-axis tracker the PV modules are attached to beams on the rotating structure. A number of these trackers are placed adjacent to each other and driven by a common rotation mechanism. This allows for a modular design with each module having a single central motor and a number of trackers. This simplifies design and allows for an extremely efficient use of space.

The system produces more output than rack structures, yet still has an extremely low energy consumption. Precision electronics with GPS input and proprietary positioning algorithms ensure optimum angle is controlled at all times.



Figure 8: STI-Norland tracker PV power unit

There are numerous rack and tracker manufacturers in the market and the system chosen will depend on the proposals by the EPC Contractors.

The materials commonly used in support and tracker structures are:

- Galvanized steel
- Stainless steel

- Anodized aluminium

7.3.4 PV Modules

There are various types of PV modules defined according to the materials used:

- Si-Monocrystalline
- Si-Polycrystalline
- Thin Film
- High Concentrated

There are also a wide range of PV module manufacturers in the market. Currently the trend for utility scale facilities such as this is towards polycrystalline module technology.

In the Independent Power Producer Procurement Programme, an important bid criteria is local content and the use of locally manufactured or assembled PV modules to help the local economy, local job creation and the local communities.

The EPC Contractor establishes rigorous quality control procedures for the PV modules suppliers. These procedures are applied to the origin of the supply, as well as during the supply.

7.3.5 Inverters

There are various types of inverters defined according to their technology:

The inverter will be selected on the basis of making the most of its rated power according to the manufacturer specifications and the power to be installed in each site. The choice of inverter depends on the performance of the PV module chosen (type and model).

7.3.6 Concentrator boxes

The concentrator boxes are outdoor switchgear boxes or cabinets where the electrical wires from the tracker or rack group are collected. The concentrator boxes are designed for outdoor conditions and are mounted on a concrete base.

7.3.7 Transformation centre

The transformation centre will be a concrete or steel prefabricated structure built to house the transformer and the associated protection devices. In the transformer, voltage level will be transformed from 0.38 kV to 132 kV.

7.3.8 Distribution centre

The distribution centre is where all the medium voltage lines coming from the various transformers are collected. The distribution centre is housed in a pre-fabricated or a steel structure and a MV line runs from here to the Eskom substation.

7.3.9 Electrical reticulation

The electrical reticulation will comprise of an underground Direct Current (DC) component within the PV plant, from the PV modules (trackers or racks) through to the inverters and distribution centre and an Alternating Current (AC) component in the form of an electricity distribution line from the inverters to the Eskom connection to feed the generated electricity into the Eskom grid. The distance between the on-site distribution

centre and the Collett substation is approximately 800 m. The connection from the distribution centre to the Eskom substation depends on Eskom's requirements and could be overhead or underground, but is likely to be an overhead 132kV line.

The DC cabling will typically be:

- based on pre-assembled harnesses from each string-end connection up to the concentrator boxes, incorporating a first-level over-current protection by means of properly sized line-fuses;
- in full compliance with IEC and SANS standards, with single layer of XLP insulation, 90° temperature rating (wet or dry), suited for direct burial installation, rated for 1kV and UV resistant;
- sized to guarantee a maximum 1.5% voltage drop between PV modules and inverters.

The AC-MV cable will typically be:

- in full compliance with IEC, SANS and NRS Standards, with stranded aluminium conductor, triple extruded insulation system and high dielectric strength 22kV insulation;
- suited for direct burial, for operation at 105°C continuous, 140°C in emergency and 250°C in short-circuit.

7.3.10 Trenches

The dimensions of the trenches will vary according to the number of cables that run through each trench. The typical width is 0.6 m and depth is 1.10 m. The cable or cables are laid in a suitable bedding material, usually sand. If the *in-situ* material is not suitable for bedding, then bedding material will be sourced from local commercial sources. The trenches are then backfilled using suitable material originating from the trench excavations.

Trenches are usually excavated by a TLB, but given the quantity of trenching within the PV plant specialist trenching machines might be used.

7.4 Concluding statement indicating the preferred alternative, including preferred location of the activity

The preferred alternative for this development is a 75 MW PV solar facility, situated on a plain on the farms Harmsfontein and Brakke Kuilen, east of the Noupoot-Cradock railway line and approximately 800 m south-east of the existing Eskom Collett substation.

For purposes of the EIA it was decided to investigate a larger area than required for the PV plant envisaged for the application. This is in order to provide for sufficient space for the preferred technology and flexibility in the positioning and detail layout of the plant, in response to on-site or environmental conditions, or for design optimisation. To this end the study area shown (Figure 2) is actually for a 100 MW fixed rack PV facility, covering an area of approximately 300 ha. Consequently, the area required for the final 75 MW PV facility will be smaller than that investigated during the EIA process.

8 Description of the environment that may be affected, including geographical, physical, biological, social, economic, heritage and cultural aspects

8.1 Climate

Middelburg is situated in the summer rainfall region of South Africa with rain mainly (61%) in autumn and summer, peaking in March. The mean annual rainfall of Middelburg is 330.2 mm. The region has a mean annual potential evaporation of 2360 mm, which is almost seven times higher than the mean annual rainfall.

A mean annual temperature of 14.8°C is reported. Mean maximum and minimum monthly temperatures in Middelburg are 36.6°C and -7.2°C for January and July. The incidence of frost is relatively high and the temperature will drop below 0°C on average 52 days a year, usually during the winter months of June to August.

8.2 Topography

The proposed development site is situated approximately 1200 m above sea level on flat and gently sloping plains, interspersed with hills and rocky ridges of the Upper Karoo (Figures 3, 4 and 5).

8.3 Geology and soils

The geology of the area consists of mudstones and sandstones of the Beaufort Group, including both Adelaide and Tarkastad Subgroups. The geology supports duplex soils with prismatic and/or pedocutanic diagnostic horizons dominant, as well as some shallow Glenrosa and Mispah soils. In some places, less prominent Jurassic dolerites are also found.

8.4 Hydrology

The proposed development site is situated in the Q14B quaternary catchment of 726 km² that forms part of the Upper Middle Fish secondary catchment. The quaternary catchment receives a mean annual rainfall of 345 mm, but experience mean annual evaporation losses of 1850 mm, with a natural mean annual runoff of 16.26 million m³. The annual sediment yield is 134180 tons or the equivalent of 184 tons/ha.

In 1995, the 17 400 consumers in the town of Middelburg were supplied from boreholes. Water requirements were estimated to have been 2.4 million m³/annum. The yield of the existing boreholes was not known, but it was expected to be adequate to the year 2010. The quality of the water was considered to be ideal to good.

8.5 Land use

Approximately 95% of the population in the quaternary catchment reside in urban areas, with a small rural population.

Approximately 97% of the land in the Upper Middle Fish secondary catchment is used for extensive livestock grazing, with some irrigation (< 2%), limited urban areas and very little alien plant invader problems. Crops produced under irrigation are primarily Lucerne and pastures, with small areas of maize and wheat. Livestock kept includes sheep, cattle and goats.



Figure 3: Views of the Collett substation adjacent to the Cradock-Noupoort railway line, where the generated electricity will be fed into the Eskom grid, indicating the Transnet service road along the railway line that could possibly be used as access road to the proposed development site.

8.6 Land use

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Approximately 97% of the land in the Upper Middle Fish secondary catchment is used for extensive livestock grazing, with some irrigation (< 2%), limited urban areas and very little alien plant invader problems. Crops produced under irrigation are primarily Lucerne and pastures, with small areas of maize and wheat. Livestock kept includes sheep, cattle and goats.

8.7 Vegetation

The proposed development site is situated in two interlinked biomes; the Nama-Karoo and the Grassland Biome. The vegetation on and around the site of the proposed development forms part of Eastern Upper Karoo and Tarkastad Montane Shrubland vegetation types (Figure 6).

The Eastern Upper Karoo vegetation, which is found on the proposed development site, is dominated by dwarf microphyllous shrubs, with 'white' grasses of the genera *Aristida* and *Eragrostis* which become prominent especially in the early autumn months after good summer rains (Figures 4 & 5). Endemic Taxa includes: *Chasmatophyllum rouxii*, *Hertia cluytiifolia*, *Rabiea albinota*, *Salsola tetrandra*, *Phymaspermum scoparium*, *Aspalathus acicularis* subsp. *Planifolia*, *Selago persimilis* and *S. walpersii*. The status of this vegetation type is 'least threatened' and important taxa are listed in Table 1.

Table 6: Dominant species within the Eastern Upper Karoo.

Vegetation Type	Eastern Upper Karoo
Tall shrubs:	<i>Lycium cinereum</i> , <i>L. horridum</i> , <i>L. oxycarpum</i>
Low shrubs:	<i>Chrysocoma ciliate</i> , <i>Eriocephalus ericoides</i> subsp. <i>Ericoides</i> , <i>E. spinescens</i> , <i>Pentzia globosa</i> , <i>P. incana</i> , <i>Phymaspermum parvifolium</i> , <i>Salsola calluna</i> , <i>Aptosimum procumbens</i> , <i>Felicia muricata</i> , <i>Gnidia polycephala</i> , <i>Helichrysum dregeanum</i> , <i>H. luciliodes</i> , <i>Limeum aethiopicum</i> , <i>Nenax microphylla</i> , <i>Osteospermum leptolobum</i> , <i>Plinthus karoocicus</i> , <i>Pteronia glauca</i> , <i>Rosenia humilis</i> , <i>Selago geniculata</i> , <i>S. saxatilis</i>
Succulent shrubs:	<i>Euphorbia hypogaea</i> , <i>Ruschia intricate</i>
Herbs:	<i>Indigofera alternans</i> , <i>Pelargonium minimum</i> , <i>tribulus terrestris</i>
Geophytic herbs:	<i>Moraea palida</i> , <i>M. polystchya</i> , <i>Syringodea bifucata</i> , <i>S. concolor</i>
Succulent herbs:	<i>Psilocaulon coriarium</i> , <i>Tridentea jucunda</i> , <i>T. virescens</i>
Grasses:	<i>Aristida congesta</i> , <i>A. diffusa</i> , <i>Cynodon incompletes</i> , <i>Eragrostis bergiana</i> , <i>E. bicolor</i> , <i>E. lehmanniana</i> , <i>E. obtuse</i> , <i>Sporobolus fimbriatus</i> , <i>Stipagrostis ciliata</i> , <i>Tragus koelerioides</i> , <i>Aristida abscensionis</i> , <i>Chloris virgata</i> , <i>Cyperus usitatus</i> , <i>Digitaria eriantha</i> , <i>Enneapogon desvauxii</i> , <i>E. scoparius</i> , <i>Eragrostis curvula</i> , <i>Fingerhuthia Africana</i> , <i>Heteropogon contortus</i> , <i>Sporobolus ludwigii</i> , <i>S. tenellus</i> , <i>Stipagrostis obtuse</i> , <i>Themeda triandra</i> , <i>Tragus berteronianus</i>



Figure 4: Two panoramas of the proposed development site viewing from north to south, showing the flat and gently sloping plains, interspersed with hills and rocky ridges, with the dominant dwarf shrubs and white grasses.



Figure 5: Panorama of the proposed development site, as well as two other photographs viewing from south to north, showing the flat and gently sloping plains, interspersed with hills and rocky ridges, with the dominant dwarf shrubs and white grasses.

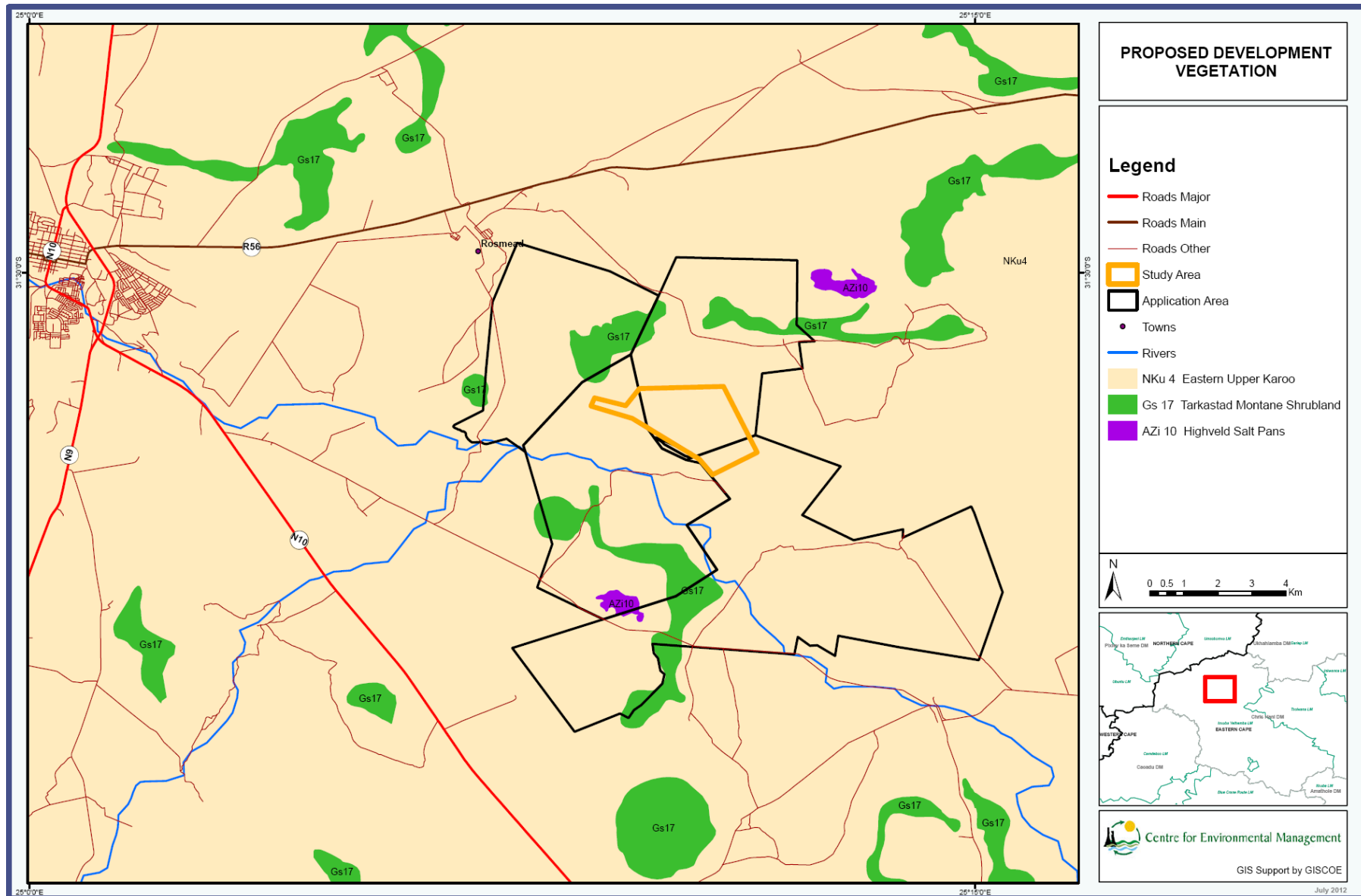


Figure 6: Vegetation types on the site of the proposed development, as well as in the surrounding area.

The Tarkastad Montane Shrubland vegetation, which occurs on the hills and ridges around the proposed development site, is characterized by low, semi-open, mixed shrubland, also with 'white' grasses and dwarf shrubs forming a prominent component of the vegetation. Biogeographically important taxa are *Encephalartos friderici-guiliemi*, *Eriocephalus africanus* and *Senecio acutifolius*. The status of this vegetation type is also 'least threatened' and important taxa of the Tarkastad Montane Shrubland are listed in Table 2.

Table 7: Dominant species within the Tarkastad Montane Shrubland.

Vegetation Type	Tarkastad Montane Shrubland
Succulent tree:	<i>Aloe ferox</i>
Small tree:	<i>Acacia karoo</i> complex
Tall shrubs:	<i>Diospyros austro-africana</i> , <i>Cadaba aphylla</i> , <i>Ehretia rigida</i> , <i>Rhus burchellii</i> , <i>Tarchonanthus minor</i>
Woody climbers:	<i>Asparagus racemosus</i> , <i>A. retrofractus</i>
Low shrubs:	<i>Euryops annae</i> , <i>Aptosimum elongatum</i> , <i>Asparagus striatus</i> , <i>Blepharis mitrata</i> , <i>B. villosa</i> , <i>Chrysocoma ciliate</i> , <i>Diospyros pallens</i> , <i>Eriocephalus ericoides</i> , <i>Felicia filifolia</i> subsp. <i>Filifolia</i> , <i>F. muricata</i> , <i>Gymnosporia heterophylla</i> , <i>Helichrysum dregeanum</i> , <i>H. zeyheri</i> , <i>Hermannia filifolia</i> , <i>Indigofera sessilifolia</i> , <i>Lantana rugosa</i> , <i>Limeum aethiopicum</i> , <i>Melolobium microphyllum</i> , <i>Nenax microphylla</i> , <i>Pegolettia retrofracta</i> , <i>Pentzia globosa</i> , <i>Phymaspermum parvifolium</i> , <i>Rosenia humilis</i> , <i>Sutera pinnatifida</i> , <i>Wahlenbergia albens</i>
Succulent shrubs:	<i>Lycium schizocalyx</i> , <i>Pachupodium succulentum</i> , <i>Sarcocaulon camdeboense</i>
Semiparasitic shrub:	<i>Thesium hystrix</i>
Grasses:	<i>Aristida adscensionis</i> , <i>A. congesta</i> , <i>A. diffusa</i> , <i>Cynodon incompletes</i> , <i>Enneapogon scoparius</i> , <i>Eragrostis chloromelas</i> , <i>E. lehmanniana</i> , <i>E. obtuse</i> , <i>Heteropogon contortus</i> , <i>Tragus berteronianus</i> , <i>T. koelerioides</i> , <i>Chloris virgata</i> , <i>Cymbopogon pospischilii</i> , <i>Digitaria eriantha</i> , <i>Eragrostis curvula</i> , <i>Eustachys paspaloides</i> , <i>Fingerhuthia Africana</i> , <i>Sporobolus fimbriatus</i> , <i>Themeda triandra</i> , <i>Tragus racemosus</i>
Herbs:	<i>Commelina Africana</i> , <i>Gazania krebsiana</i> subsp. <i>krebsiana</i> , <i>Hibiscus pusillus</i> , <i>Indigofera alternans</i> , <i>Lepidium africanum</i> subsp. <i>africanum</i> , <i>Tribulus terrestris</i>
Geophytic herbs:	<i>Asplenim cordatum</i> , <i>Boophone disticha</i> , <i>Cheilanthes deltoidea</i> , <i>C. hirta</i> , <i>Oxalis depressa</i>
Succulent herb:	<i>Crassula muscosa</i>

8.8 Invasive Alien plants

A total of 21 invasive alien plant species (IAPs) are reported to occur in the area (Middelburg) (Table 3). The list provides an overview of the possible IAPs which could be expected at the proposed development site. At the moment none of these occur at the site, however, could be introduced into any disturbed areas associated with the construction and operation of the proposed PV facility.

Table 8: Potential IAPs which could be encountered at the proposed development site.

<i>Agave americana</i> L.	<i>Nasturtium officinale</i> R. Br.
<i>Argemone ochroleuca</i> subsp. <i>ochroleuca</i>	<i>Opuntia ficus-indica</i> (L.) Mill.
<i>Atriplex nummularia</i> ssp. <i>nummularia</i>	<i>Opuntia robusta</i> H.L. Wendl.
<i>Azolla filiculoides</i> Lam.	<i>Populus canescens</i> (Ait.) J.E. Sm.
<i>Cereus jamacaru</i> DC.	<i>Prosopis velutina</i> Wooton
<i>Convolvulus arvensis</i> L.	<i>Salvia verbenaca</i> L.
<i>Echium plantagineum</i> L.	<i>Schinus molle</i> L.
<i>Eucalyptus</i> sp.	<i>Solanum elaeagnifolium</i> Cav.
<i>Gleditsia triacanthos</i> L.	<i>Tamarix</i> sp.
<i>Lepidium draba</i> L.	
<i>Caesalpinia gilliesii</i> (Wallich. ex Hook.) Benth.	
<i>Echinopsis spachiana</i> (Lem.) Friedr. & Rowley	
<i>Prosopis glandulosa</i> var. <i>torreyana/velutina</i>	

8.9 Threatened Fauna and Flora

Information on threatened animal and plant species for the Middelburg area is greatly lacking. There are 317 threatened animal and plant species in the Eastern Cape, including 19 mammal, 26 reptile and amphibian, 39 invertebrate, 17 fish, 31 bird and 185 plant species. The threatened and endemic reptiles and amphibians in the Eastern Cape are mostly located near the coast and in forest areas, while there are six listed plant species which have become extinct in the Eastern Cape, all in the Albany Centre of Endemism.

9 Positive and negative impacts that the proposed activity and alternatives will have on the environment and on the community that may be affected

Regulation 21 (3) of GN R. 982 states that a scoping report must contain all the information set out in Appendix 2 to these Regulations.

Different types of impacts may occur from the undertaking of an activity. The impacts may be positive or negative and may be categorized as being direct (primary), indirect (secondary) or cumulative impacts.

Direct impacts are impacts that are caused by the activity and generally occur at the same time and at the place of the activity (e.g. noise generated by blasting operations on the site of the activity). These impacts are usually associated with the quantifiable.

Indirect impacts of an activity are indirect or induce changes that may occur as a result of the activity (e.g. reduction of water in a stream that supplies water to a reservoir that supplies water to the activity). These types of impacts include all the potential impacts that do not manifest immediately when the activity is undertaken or which occur at a different place as a result of the activity.

Cumulative impacts are impacts that result from the incremental impact of the proposed activity on a common resource when added to the impacts of other past, present or reasonably foreseeable future activities (e.g. discharge of nutrients and heated water to a river that combine to cause algal bloom and subsequent loss of dissolved oxygen that is greater than the additive impacts of each pollutant). Cumulative impacts can occur from the collective impacts of individual minor actions over a period of time and can include both direct and indirect impacts.

GN R. 982 defines “cumulative impacts”, in relation to an activity, as the impact of an activity that in itself may not be significant, but may become significant when added to the existing and potential impacts eventuating from similar or diverse activities or undertakings in the area.

The identification of the potential impacts of an activity on the environment should include impacts that may occur during the commencement, operation and termination of an activity. In order to identify impacts it is important that the nature of the proposed activity is well understood so that the potential impacts that are associated with the activity can be understood.

The process of identification and assessment of impacts includes the:

- determination of current environmental conditions in sufficient detail so that there is a baseline against which impacts can be identified and measured;
- determination of future changes to the environment that will occur if the proposed activity does not take place;
- an understanding of the activity in sufficient detail to understand its consequences; and
- the identification of impacts which are likely to occur if the activity is undertaken.

Potential environmental impacts of the proposed development have been identified during consultative processes between the consultant, the client and some technical specialists based upon their professional experience and judgement. Additional potential environmental impacts were identified during the public participation process.

9.1 Activities related to the construction and operation of a solar PV facility

9.1.1 Activities related to the construction of a solar PV facility

The construction of a PV plant normally incorporates some or all of the following activities:

- Protection of natural features by creating no-go areas;
 - Marking identified features;
 - Prevent access to identified features that are to be protected;
- Earthworks;

- Site clearing
- Levelling of site;
- Excavations of soil and rock;
- Establishment of storm water drainage and other services infrastructure;
 - Design of storm water management and other services infrastructure;
 - Construction of storm water management and other services infrastructure;
 - Maintenance of storm water management and other services infrastructure;
- Handling and storage of soil and/or fill material;
 - Excavation and storage of in situ soil;
 - Excavation of soil and/or fill material off-site;
 - Dumping of imported soil and/or fill material on site;
 - Levelling and compaction of site;
- Transportation of bulk materials to, on and from the site;
 - Soil and/or fill material;
 - Hydrocarbon fuels, grease, lube oils and solvents;
 - Cement, concrete and other construction materials;
 - Building rubble and fill material;
 - Other solid and liquid waste;
- Provision and operation of on-site staff facilities and activities;
 - Provision of potable water;
 - Provision and operation of temporary toilets;
- Management of vehicles, machinery and equipment;
 - Provision and operation of access road;
 - Operation of construction vehicles, machinery and equipment;
 - Maintenance of construction vehicles, machinery and equipment;
- Handling and use of hazardous materials;
 - Storage and use of hydrocarbon fuels, grease, lube oils & solvents on site;
 - Storage and use of cement;
 - Storage and use of herbicides and pesticides;
- Waste generation, storage and disposal;
 - Temporary storage of solid waste;
 - Temporary storage of liquid waste;
 - Disposal of solid and liquid wastes

- Construction of the PV plant ;
 - Construction of foundations
 - Erection of PV solar panels;
 - Construction of inverters, concentrator boxes and transformation centre;
 - Construction of electrical reticulation and distribution centre;
 - Construction of electricity connection line to the substation;
 - Removal of all temporary construction structures and services;

9.1.2 Activities related to the operation of a solar PV facility

The operation of a PV plant normally incorporates some or all of the following activities:

- Maintenance of PV modules;
- Provision of security;
 - Use of water & electricity;
 - Operation of ablution facilities;
- Maintenance of supporting infrastructure;
 - Pest and invader plant control;
 - Erosion management
- Handling and use of hazardous materials;
 - Storage and use of hydrocarbon fuels, grease, lube oils & solvents on site;
 - Storage and use of cement;
 - Storage and use of herbicides and pesticides;
- Waste generation, storage and disposal;
 - Temporary storage of solid waste;
 - Temporary storage of liquid waste;
 - Disposal of solid and liquid wastes

Some of the above activities are more harmful to the environment than others. Intrusive activities directly impacts on the environment by destroying natural and cultural features and replacing it with the built feature, while other indirectly affect the environment, but can proceed over extended periods. The bottom line is that the existing natural environment will be replaced by a man-made environment.

9.2 Potential environmental Impacts and risks identified for each alternative

The following potential environmental impacts (with associated receptors/indicators) have been identified (Table 6):

- Water impacts
 - Water usage during the construction and operational phases;

- Potential surface water pollution due to soil erosion or spillage of pollutants;
- Removal, disturbance and or destruction of heritage resources – graves, artefacts and sites;
- Dust generation during construction on site and access roads;
- Machinery and vehicle noise during the construction phase;
- Soil impacts
 - Soil pollution due to soil or spillage of pollutants during construction and operational phases;
 - Soil erosion during construction and operational phases;
- Temporary sterilisation of land use potential;
- Biodiversity impacts
 - Habitat transformation during construction and operational phases;
 - Impacts on ecological functioning due to the habitat transformation; and
- Visual & aesthetic impacts;
- Social impacts
 - Positive impacts of job creation during the construction phase;
 - Negative impacts of migrant labour during the construction phase;
 - Positive impacts of job creation during the operational phase;
 - Positive impacts of improved education through the establishment of the proposed Educational Trust;
- Economic impacts
 - Positive impacts of job creation during the construction and operational phases;
 - Local sourcing of construction materials during the construction phase.

Table 9: Potential environmental impacts associated with the various phases of the proposed development.

Environmental medium	Environmental impact	Phase		
		Construction	Operational	Decommissioning
Water	Surface water pollution	X	X	X
	Hydrology	X	X	X
Soil	Soil pollution	X	X	X
	Soil erosion	X	X	X
Air	Air pollution	X	X	X
	Noise	X		X
Land use	Land use potential	X	X	X
	Agricultural production	X	X	X

Environmental medium	Environmental impact	Phase		
		Construction	Operational	Decommissioning
Biodiversity	Terrestrial habitat transformation	X	X	X
	Aquatic habitat transformation	X	X	X
	Ecological & corridor function	X	X	X
Social	Negative social impacts	X		X
	Positive social impacts	X	X	
Visual	Visual & aesthetic impacts	X	X	X
Economy	Economic impacts	X	X	X
Traffic	Traffic impacts	X	X	X

The majority of the potential environmental impacts identified will apply equally to all the alternatives considered.

Negative environmental impacts will be prevented as far as is reasonably practical, even if it requires a redesign of the proposed facilities. The negative environmental impacts that cannot be prevented will be minimised as far as is reasonably practicable. Whatever natural features remain once the PV Plant with its associated infrastructure has been developed, will be rehabilitated.

9.3 Environmental impact significance

The nature, significance, consequence, extent, duration and probability of the impacts, including the degree to which these impacts can be reversed, may cause irreplaceable loss of resources; and can be avoided, managed or mitigated has not been done as yet. It will be evaluated during the impact assessment phase and documented in the Environmental Impact Report.

9.4 Possible mitigation measures that could be applied and level of residual risk

Possible mitigation measures that could be applied to prevent or mitigate the identified environmental impacts have not yet been done identified. It will be done and level of residual risk identified during the environmental impact assessment phase and documented in the Environmental Management Programme.

10 Details of the public participation process undertaken in terms of regulation 41 of the Regulations

10.1 Pre-application consultation with competent authority:

The EIA process commenced with a pre-application consultation meeting between the EAP, client and the competent authority (DEA) on 24 November 2016. During the meeting, the proposed public participation process was discussed. The minutes of the pre-application meeting is attached (Appendix B).

10.2 Steps taken to notify potentially interested and affected parties of the application

10.2.1 Invitations to I&APs

Written notices with invitations to register as Interested and Affected Parties (I&APs), indicating that the Scoping report is available for public review, were e-mailed/faxed and mailed (registered letter) to pre-identified I&APs (Table 7), in line with the requirements of GN R. 982.

1. *Regulation 41 (2)(b)(i) the occupiers of the site and, if the proponent or applicant is not the owner or person in control of the site on which the activity is to be undertaken, the owner or person in control of the site where the activity is or is to be undertaken or to any alternative site where the activity is to be undertaken;*

Written notices (*Appendix C1*), including a Background Information Document (*Appendix C2*), were e-mailed to the following land owners: Hannes Louw, Mark McEwan, Thinus du Plessis.

2. *Regulation 41 (2)(b)(ii) owners, persons in control of, and occupiers of land adjacent to the site where the activity is or is to be undertaken or to any alternative site where the activity is to be undertaken;*

Written notices (*Appendix C1*), including a Background Information Document (*Appendix C2*), were mailed (registered letters) to the following owners of land adjacent to the proposed development site: Jannie Louw, David Bennie, Henning Vorster, Kobus Pieterse, Marais vd Merwe, Johan vd Merwe, David Victor, David McEwan, Charlie Ayliff, Piet van der Vyfer and the Chris Hani District Municipality.

3. *Regulation 41 (2)(b)(iv) the municipal councillor of the ward in which the site or alternative site is situated and any organisation of ratepayers that represent the community in the area;*

A written notice (*Appendix C1*), including a Background Information Document (*Appendix C2*), was e-mailed to the Ward Councillor of ward 7 of the Inxuba Yethemba Local Municipality, Mrs Ada Sammy.

4. *Regulation 54 (2)(b)(v) the municipality which has jurisdiction in the area;*

A written notice (*Appendix C1*), including a Background Information Document (*Appendix C2*), was mailed (registered letter) to the Municipal Manager of the Inxuba Yethemba Local Municipality.

5. *Regulation 54 (2)(b)(vi) any organ of state having jurisdiction in respect of any aspect of the activity;*

Written notices (*Appendix C1*), including a Background Information Document (*Appendix C2*), were mailed (registered letters), e-mailed and/or faxed to the Eastern Cape Department of Economic Development, Environmental Affairs, and Tourism (DEDEAT), the Directorate Land Use and Soil Management in the Department of Agriculture, Forestry and Fisheries (DAFF), the Chief Director, Eastern Cape, Department of Water Affairs (DWA) and the Eastern Cape Heritage Resources Agency.

6. *Regulation 54 (2)(b) (vii) any other party as required by the competent authority;*

Written notices (*Appendix C1*), including a Background Information Document (*Appendix C2*), were also mailed (registered letters), e-mailed and/or faxed to Eskom Distribution.

10.2.2 Notices in newspapers

A newspaper advertisement was (*Appendix D1*) published in the Advertiser/Karoo Nuus (8 December 2016) (*Appendix D2*) and the Eastern Cape Government Gazette (16 January 2017) (*Appendix D3*).

10.2.3 Site notices

Notice boards (*Appendix D1*) were fixed on the farms Harmsfontein No.335, Remainder of Brakke Kuilen No.180 and Buffelspoort 336, where the proposed development will take place, as well as at two farmer's co-operatives locations in Middelburg, i.e. BKB and OVK (*Appendix E*).

10.2.4 I&AP register

A register of interested and affected parties (I&APs) has been developed in 2012 and revised in 2016 (Table 10).

10.2.5 Public meeting

A public participation meeting was held on 2 August 2012 at the Desert Inn Guest House in Middelburg, Eastern Cape (*Appendices F1: PowerPoint Presentation, F2: Minutes & F3: Attendance register of the meeting*). The objective of the meeting was to inform participants of the proposed project and alternatives, as well as the environmental impact assessment process being undertaken, to provide feedback on progress made with the EIA process, solicit input and comments from I&APs to inform the EIA processes, note comments, issues and concerns regarding the proposed activity; and outline the way forward in terms of the EIA process. A total of 8 people attended the meeting.

10.2.6 Scoping Report

The draft Scoping Report was made available for review and comment by I&APs on 09 January 2017 (30-day commenting period) (*Appendices C1, D1 & E*).

Table 10: List of Interested and Affected Parties (I&APs).

Name	Position	Telkom number	Cell number	Fax number	E-mail address	Postal Address
Owners/Occupiers of land						
Hannes Louw	Land owner	049 842 1818 049 842 1208 (w)	082 453 7780		loucorboerdery@gmail.com	PO Box 532, Middelburg, 5900
Thinus du Plessis	Land owner	049 842 1811	082 772 3221		tinus@adsactive.com	PO Box 184, Middelburg, 5900
Mark McEwan	Land owner	049 842 1326	078 631 5816		greyville@midkaroo.co.za	PO Box 426, Middelburg, 5900
Neighbours						
Jannie Louw	Neighbour	049 842 1510	082 929 6938			p/a Hannes Louw
David Bennie	Neighbour		082 663 9365			Posbus 179, Middelburg, 5900
Henning Vorster	Neighbour		076 670 8012			Posbus 85, Middelburg, 5900
Kobus Pieterse	Neighbour		082 774 7885		kpieterse@cmw.co.za	Heuwelstraat 8, Middelburg, 5900
Marais vd Merwe	Neighbour		082 556 9259			Posbus 63, Middelburg, 5900
Johan vd Merwe	Neighbour		082 299 8244			Posbus 395, Middelburg, 5900
David Victor	Neighbour		079 499 7963			PO Box 295, Middelburg, 5900
David McEwan	Neighbour		082 379 0130		fairfield@hotmail.com	PO Box 222, Middelburg, 5900
Charlie Ayliff	Neighbour	049 842 1412				PO Box 341, Middelburg, 5900
Piet vd Vyfer	Neighbour		079 974 6965			Posbus 530, Middelburg, 5900
Chris Hani District Municipality	Neighbour	045 808 4600		045 838 1556	communications@chrisanidm.gov.za	PO Box 7121, Queenstown, 5320
Organs of State						
DEA						
Muhammad Essop		012 399 9406			messop@environment.gov.za	Private Bag X447, Pretoria, 0001

Name	Position	Telkom number	Cell number	Fax number	E-mail address	Postal Address
DEDEAT						
Bulumko Nelana				040 639 2002		
DWA						
	Chief Director: Eastern Cape	043 604 5402		043 604 5592	starkeya@dwa.gov.za	
DAFF						
Mrs. Annelize Collett HJ Buys	Directorate Land Use and Soil Management	012 319 7508 012 319 7634		012 329 5938	annelizec@nda.agric.za thokob@daff.gov.za	Private Bag x120, Pretoria, 0001
Eastern Cape Provincial Heritage Resources Authority						
Mr Sello Mokhanya				012 329 5938	smokhanya@ecphra.org.za	74 Alexander Road, King Williams Town, 5600
Chris Hani District Municipality						
A. Prinsloo/ F. Nel		049 842 1104		049 842 3582 045 833 3022	aprinsloo@chrishanidm.gov.za fnel@chrishanidm.gov.za nmbananga@chrishanidm.gov.za	Private Bag x7121, Queenstown, 5320
Inxuba Yethemba Local Municipality						
Mzwandile S Tantsi	Municipal Manager	049 842 1337		049 842 1310 048 881 1421	mm@iym.gov.za alda@iym.gov.za	PO Box 55, Middelburg, 5900
Ada Sammy	Ward councillor		082 957 5091			
Handri Vorster	Councillor		082 324 7524		Handri.vorster@gmail.com	
Eskom						
Kevin Leask Ronald Marais	Distribution	011 800 8111				
John Geeringh	Snr Env Advisor (Pr Sci Nat)	011 516 7233	083 632 7663	086 661 4064	john.geeringh@eskom.co.za	GC Land Development, Megawatt Park D1 Y38, P O Box 1091,

Name	Position	Telkom number	Cell number	Fax number	E-mail address	Postal Address
						Johannesburg, 2000
Transnet						
Dawid Theron		041 507 4124	083 275 1683		Dawid.theron@transnet.net	
Interest groups						
Bradley Gibbons	EWT, Blue Crane Working Group	049-842-1116	082 566 5803		bradley@ewkory.co.za	
Proponent						
Piero Granelli	CEO, AMDA Developments (Pty) Ltd	021 461 3382	082 333 3368	086 568 2737	piero@amdadevelopments.co.za	PO Box 2681, Cape Town, 8000

10.3 Summary of the issues raised by interested and affected parties, and an indication of the manner in which the issues were incorporated, or the reasons for not including them

See Table 11.

- Copies of any representations and comments received in connection with the application or the scoping report from interested and affected parties

Four I&APs responded on the Invitation to Register as I&APs in 2012 (Appendix C3). No I&APs responded during the public participation process in 2015.

10.4 Copies of the minutes of any meetings held by the EAP with interested and affected parties and other role players which record the views of the participants

- PowerPoint Presentation delivered during the public meeting held on Thursday, 2 August 2012 (Appendix F1).
- Minutes of the public meeting held on Thursday, 2 August 2012 (Appendix F2).
- Attendance register of the public meeting facilitated by Mr. Theunis Meyer (Appendix F3).
- Copies of responses from EAP to representations, comments and views raised by interested and affected parties (Appendix F4).

Table 11: A summary of issues raised by interested and affected parties and the response of the EAP to those issues.

Interested and Affected Party	Date of receipt	Issue	Response
B Gibbons	2 August 2012	It will be good to mark power lines with flippers, so that they are more visible for large birds. Not necessary for section close to the railway line.	Will be done
A Prinsloo	9 August 2012	All legislation regarding the provision of water services and waste management will be complied with to ensure that no environmental pollution occurs	Will be done
T du Plessis	15 August 2012	If possible use gravel road next to railway	This will be done if approval is given from Spoornet
F Nel	16 August 2012	Environmental friendly panels should be used to reduce threat to birds and other animals.	Comment will be forwarded to applicant for consideration during the final design process

11 Plan of study (PoS) for undertaking the environmental impact assessment (EIA) process

11.1 Description of the alternatives to be considered and assessed within the preferred site, including the option of not proceeding with the activity

The alternatives within the preferred site, as described in this report, including the option of not proceeding with the activity, will be considered and assessed in the EIA process.

11.2 Description of the aspects to be assessed as part of the EIA process

The environmental aspects identified under section 9.2 of this report will be assessed as part of the EIA process.

11.3 Aspects to be assessed by specialists

The environmental aspects identified under section 2.3 of this report has been assessed by specialists as part of the EIA process in 2012. These include soils and agricultural impact, vegetation (botanical) impacts, fauna (animal) impacts, archaeological impacts, paleontological impacts and visual impacts.

In the opinion of the EAP, nothing has changed in the environment of the proposed development site since the specialist studies were undertaken. As discussed during the pre-application meeting, the specialist will be requested to confirm that the specialist studies and the recommendations therein are still applicable to the current application.

11.4 Description of the tasks that will be undertaken as part of the EIA process

11.4.1 Description of the nature of the environmental impacts

The first step in the assessment is to describe the nature of the impact, i.e. a description of what is being affected and how. This is an appraisal of the type of effect the activity would have on the affected environment.

11.4.2 Evaluation of the significance of the environmental impacts

The second step is to determine the significance of the described impact.

GN R. 982 defines "significant impact" as an impact that may have a notable effect on one or more aspects of the environment or may result in non-compliance with accepted environmental quality standards, thresholds or targets and is determined through rating the positive and negative effects of an impact on the environment, based on criteria such as duration, magnitude, intensity and probability of occurrence.

11.4.3 Specialist studies

Specialist studies has already been undertaken during October 2012, as discussed under sections 2.3 and 11.2. Inputs from the specialist studies will be used to assess potential environmental impacts and identify suitable mitigation measures.

11.4.4 EIA Report & EMP

Once the Scoping Report has been accepted, the EIA Report and the EMPr will be compiled. A draft EIA Report and will be made available for review and comment by I&APs (30-day commenting period). All comments by I&APs and competent authorities and associated EAP responses will be recorded in the I&AP issue and response register.

The draft EIA Report and EMP will be reviewed and revised where required and the final EIA Report and EMPr will be submitted to the competent authority for consideration and decision-making.

11.5 Description of the proposed method of assessing the environmental impacts, including the duration and significance thereof

The environmental significance will be determined through a synthesis of the following assessment criteria: duration, magnitude, intensity and probability of occurrence.

11.5.1 Duration

This will be rated to indicate whether the lifetime of the impact would be:

- short term - where the impact would exist for 0-5 years;
- medium term - where the impact would exist for 5-15 years;
- long term - where the impact will cease after the operational life of the activity either because of natural process or by human intervention; or
- permanent - where mitigation either by natural process or by human intervention will not occur in such a way or in such a time span that the impact can be considered transient.

11.5.2 Magnitude or extent (spatial scale)

This will be rated as:

- local - where the impact would extend only as far as the activity;
- immediate - where the impact would be limited to the site and its immediate surroundings;
- regional - where the impact would extend to the region (municipal boundaries); or
- national - where the impact would have an impact on a national scale.

11.5.3 Status and intensity of the impact (severity)

Here it will be established whether the impact would be destructive or benign and rated as:

- low - where the impact affects the environment in such a way that natural, social and cultural functions and processes are not affected;
- moderate - where the affected environment is altered, but natural, social and cultural functions and processes continue albeit in a modified way; or
- high - where natural, social and cultural functions or processes are altered to the extent that it will temporarily or permanently cease.

The ratings will be based on a number of considerations, i.e. the degree to which:

- the activity, product or service violates the spirit or letter of any law, statute, regulation or authorisation;
- the activity, product or service affects public health and safety (level of toxicity etc.);
- the activity, product or service affects the availability or functioning of life support systems or other environmental goods, services and conditions which are considered to be of special or unique character, of limited supply or essentially irreplaceable;
- the activity, product or service is related to other impacts which individually are insignificant, but could cumulatively result in significant impacts;
- an activity, product or service may establish a precedent for future actions with significant environmental impacts or represents a decision in principle about an issue with significant implications;
- the potential impacts of the activity, product or service is highly uncertain or involves unique or unknown risks; and
- the degree of irreversibility.

11.5.4 Probability

The likelihood of the impact actually occurring will be rated as:

- improbable - where the possibility of the impact to materialise is very low, either because of design or historic experience;
- probable - where there is a distinct possibility that the impact will occur;
- highly probable - where it is most likely that the impact will occur; or
- definitely - where the impact will occur regardless of any prevention measures.

11.5.5 Significance

The significance of impacts will be determined through a synthesis of the aspects mentioned above and described as:

- low - where it will not have an influence on the decision;
- medium - where it should have an influence on the decision unless it is mitigated; or
- high - where it would influence the decision regardless of any possible mitigation.

11.6 Identification of suitable measures to avoid, reverse, mitigate or manage identified impacts and the extent of the residual risks that need to be managed and monitored

Possible mitigation measures that could be applied to avoid (prevent), mitigate, manage or reverse the identified environmental impacts have not yet been identified. It will be done during the environmental impact assessment phase and documented in the Environmental Management Programme and will include the level of residual risks that need to be managed and monitored.

11.7 Indication of the stages at which the competent authority will be consulted

- Submission of draft and final Scoping and Environmental Impact Reports with EMPr for comment during the public review periods;
- Submission of final Scoping and Environmental Impact Reports with EMPr for consideration and decision-making.

11.8 Particulars of the public participation process that will be conducted during the EIA process

- A hard copy of the Final EIA Report and EMPr, together with the specialist reports will be made available for comment by I&APs (30-day commenting period) at the Middelburg public library. Electronic versions of the draft EIA Report will also be made available upon request.
- At the end of the commenting period, the EIA report will be reviewed and revised, and submitted to the competent authority for consideration. All comments by I&APs and the competent authority, and the associated responses will be recorded in the issue and response register and dealt with appropriately.
- Once a decision on the application has been taken, all I&APs will be informed of the decision on the application and provided with access to the decision and the reasons for such decision. Their attention will also be drawn to the fact that an appeal may be lodged against the decision.

12 Undertaking under oath or affirmation by the EAP

The EAP hereby affirms:

- the information provided in the report is correct and accurate;
- all comments and inputs from stakeholders and interested and affected parties (I&APs); as well as any information provided by the EAP to I&APs and any responses by the EAP to comments or inputs made by I&APs has been included;
- there is agreement between the EAP and I&APs on the Plan of Study for undertaking the EIA.

13 Appendices

13.1 Appendix A: CV of Environmental Assessment Practitioner

TC Meyer Curriculum Vitae

1. **Surname:** Meyer
2. **First names:** Theunis Christoffel
3. **Date of birth:** 1961-11-29
4. **Nationality:** South African
5. **Marriage status:** Married
6. **Education/qualifications:**

Institution [Date from - Date to]	Degree(s) and Diploma(s) obtained
University of Orange Free State [1982-1992]	B. Sc. Agric, B.Sc. Agric Honours (Pasture Science), M.Sc. Agric (Pasture Science)
University of Pretoria [1987-1987]	B.Sc. Honours (Wildlife Management)
Technikon RSA 1992-1996	National Higher Diploma (Management Practice)
Potchefstroom University 1999-2003	M.Sc. (Environmental Management)
North West University 2015	Advanced Management Programme Certificate in Strategic Management

7. **Language skills:** Indicate competency on a scale of 1 to 5 (1=excellent; 5=basic)

Language	Reading	Speaking	Writing
Afrikaans	1	1	1
English	1	1	1
German	5	5	

8. **Membership of professional bodies:**
 - Registered Professional Natural Scientist – Ecological Science and Environmental Science. (400029/08)
 - Certified Senior Environmental Management System Auditor - Southern African Auditor Training and Certification Association (E058)
 - South African Institute of Ecologists & Environmental Scientists (Professional member)

- International Association for Impact Assessment (South African Chapter)
- Grassland Society of Southern Africa
- Former member of Arid Zone Ecology Forum and Wildlife Management Association of Southern Africa

9. Present position and location:

Chief Subject Specialist, Centre for Environmental Management, North-West University, Potchefstroom

10. Years within the organisation: 15 years

11. Professional experience

11.1 Areas of specialisation

Environmental law, mine closure and rehabilitation, Environmental Impact Assessment, Environmental and Occupational Health and Safety management systems, Environmental Management Systems auditing and environmental legal compliance auditing, municipal environmental management, estate management, invader plant control, biodiversity offsets, karoo, grassland and savannah ecology, wildlife and protected area management, plant-animal interactions.

11.2 Work experience

No	Activity	Key Experience
1.	Project Management	<ul style="list-style-type: none"> • Managed a number of large, multi-stakeholder projects for public and private sector clients.
2.	Conducting and facilitating Environmental Impact Assessments (EIAs) for clients	<ul style="list-style-type: none"> • Conducted numerous EIAs conducted throughout South Africa in terms of the Environmental Conservation Act (No. 73 of 1989) (ECA), the National Environmental Management Act (No. 107 of 1998) (NEMA) and the Mineral and Petroleum Resources Development Act (No. 28 of 2002) (MPRDA) for shopping malls, solar energy and mining projects.
3.	Conducting environmental legal compliance, Environmental Management System (EMS), as well as environmental performance audits	<ul style="list-style-type: none"> • Conducted numerous environmental legal compliance, EMS and Environmental Performance audits for clients in the mining, energy, chemical and local government sectors.

No	Activity	Key Experience
4.	Working with local government	<ul style="list-style-type: none"> • Developed and delivered various environmental management training interventions for local government in the past - Municipalities in Mpumalanga, selected municipalities in SADC, Western Cape and Northern Cape.
5.	Working with communities on issues related to sustainable land management, invader plant control and biodiversity conservation	<ul style="list-style-type: none"> • Development of an Environmental Sector Master Plan for Metsimaholo Municipality • Development of Invader Plant Control Strategies and Action Plans
6.	Technical <ul style="list-style-type: none"> • Sustainable agriculture • Veld management • Invader plant control 	<ul style="list-style-type: none"> • Involved in projects to improve/ensure sustainable veld/range management in rural areas –Department of Agriculture & Namibian Department of Nature Conservation • Involved in projects to control alien invasive trees – Department of Agriculture • Involved in veld rehabilitation projects – Department of Agriculture
7.	Training	<ul style="list-style-type: none"> • Lecturer, Environmental Management and Environmental Law Masters Programmes - North-West University (2006 – present) • Lecturer, Environmental management awareness & Environmental Management Systems - North-West University, School of Environmental Sciences and Development, Faculties of Law and Engineering (2002-2005) • Lecturer - Environmental Management module in MBA training programme, Tshwane University of Technology (2012) • External examiner, B. Sc Hons, M. Sc. & M. Sc. Agric programmes – Free State University, North-West University & University of Venda (2001-present) • External moderator, Botany 1 - Technikon of Namibia (1988 – 1989) & Pasture Science II & III - Potchefstroom Agricultural College (1996-2000) • Member of Executive Committee, Environmental Sciences, Environmental Management & Waste Management Standards Generating Body - NSB 10, South African Qualifications Authority (2003-2009) • Lecturer & presenter, formal education & short courses - Grootfontein Agricultural College (1990 – 1994) • Course developer & presenter, short courses - North West Department of Agriculture (1994-2001)

No	Activity	Key Experience
		<ul style="list-style-type: none"> • Course developer& presenter, Train the trainer: Veld Management - Boskop Training Centre (1995), Train the trainer: Bush control - National Educational Veld Rehabilitation Programme & North West Province Department of Agriculture (1995–2001) • Lecturer, Bush control - Resource Identification and Utilisation Course, North West Province Department of Agriculture (1995–2000) • Course developer & presenter, Train the trainer: Environmental awareness - Impala Platinum Mine (2000), Jwaneng Diamond Mine, Botswana (2001) • Technical course co-ordinator (developer) & presenter: Environmental law, Mine closure and rehabilitation, Environmental Management Systems, Environmental Impact Assessment, Environmental awareness, EMS auditing, Occupational Health and Safety law, Occupational Health and Safety Management Systems, OHSAS 18001 Auditing, Internal SHE Management System Auditing, Handling & Storage of Dangerous Goods - Centre for Environmental Management, North-West University (2001-present) • Programme developer & co-ordinator: Municipal Environmental Management Capacity Building Programmes - Mpumalanga Department of Agriculture and Land Administration, Metsimaholo Local Municipality, Northern Cape Department of Tourism, Environment and Conservation, Ekurhuleni Metropolitan Municipality, Capricorn District Municipality • Programme developer & presenter: Senior management introduction to Environmental and Occupational Health and Safety Management Systems • Programme developer & presenter: Senior management introduction to Environmental law and legal liability

11.3 Specific Professional Experience

Dates	Location	Company	Position
2001 – present	Potchefstroom	Centre for Environmental Management, North-West University,	Chief Subject Specialist
Description of experience	<ul style="list-style-type: none"> • Development, co-ordination and presentation of environmental management and occupational health and safety management, mine closure and rehabilitation, as well as environmental law courses • Conducting and facilitating Environmental Impact Assessments, public participation, integrated Environmental Authorisation and mine closure and rehabilitation processes • Performing environmental legal compliance, environmental performance assessment and environmental management system audits • Development and implementation of ISO 14001 environmental management systems • Providing support to improve the environmental performance of local authorities, as well as public & private sector organisations • Project management • Development of a biodiversity offset proposal and Environmental Management Frameworks • Participation in Standard Generation Body for Environmental Sciences, Environmental Management and Waste Management – also developing standard for post graduate diploma for EAPs • Developing student assessment procedure for CEM Quality Management System • Regular assessment and evaluation of short course training students 		
1994 - 2001	Potchefstroom	North West Department of Agriculture	Senior Agricultural scientist
Description of experience	<ul style="list-style-type: none"> • Planning and execution of research and development projects (grazing capacity, veld management, bush control, veld reclamation) • Development and presentation of training courses on veld management and bush control • Communicating research results through reports, articles and presentations 		
1989 - 1994	Middelburg Eastern Cape	Department of Agriculture, Karoo Region	Agricultural scientist
Description of experience	<ul style="list-style-type: none"> • Planning and execution of research and development projects (grazing capacity, veld management, veld reclamation) • Presentation of training courses on veld management • Formal student training at Grootfontein Agricultural College • Communicating research results through reports, articles and presentations 		

Dates	Location	Company	Position
1988 – 1989	Windhoek, Namibia	Directorate Nature Conservation, Namibia Government	Nature Conservation Scientist
Description of experience	<ul style="list-style-type: none"> • Planning and execution of research projects • Development and presentation of training courses on wildlife management • Communicating research results through reports, articles and presentations • Formulation of management recommendations for game reserves 		

12 Other relevant information (e.g., Publications)

- 5 Book contributions
 - Hoffman M.T., Cousins B., Meyer T.C., Petersen A. & Hendricks H. 1998. Historical and contemporary agricultural land use and the desertification of the Karoo. In: Dean W.R.J. & Milton S.J. (eds.) *The Karoo: ecological patterns and processes*. Cambridge University Press.
 - Meyer, T.C., Kellner, K. & Viljoen, C. 2002. Land transformation and soil quality (Chapter 9). *North West State of the Environment Report, 2002*. CD ROM. North West Department of Agriculture, Conservation and Environment, Mmabatho.
 - Meyer TC & Le Roux E, 2006. Capacity building for effective municipal environmental management in South Africa. *The Sustainable City IV*, WIT Press, Southampton, UK.
 - Meyer TC & Roos C, 2015. Hazardous Substances Control. In: Du Plessis A (ed.) *Environmental Law and Local Government in South Africa*, Juta.
 - Meyer TC, 2015. Soil and Land Management. In: Du Plessis A (ed.) *Environmental Law and Local Government in South Africa*, Juta.
- 10 Semi-scientific publications
 - Meyer T.C. & Immelman W.F. 1993. Botaniese dieetsamestelling van Afrino's op Dorre Karooveld. *Karoo Agric* 5(2): 5-9
 - Hoon J.H. & Meyer, T.C. 1998. Effek van die toediening van 'n kommersiële tannien inheiberder op die prestasie van Angorabokke op Spekboomveld. *Groofontein Agric* 1(1): 8-10.
 - Meyer T.C., van den Heever J. 1998. Interactions between livestock farming, human needs and the environment in the communal farming sector – perceptions of field workers in the Ganyesa District of the North West Province. *Proceedings of a Symposium on Policy-making for the Sustainable Use of southern African Communal Rangelands*. University of Fort Hare, Alice, South Africa.
 - Meyer T.C., Venter I.S. & Van Zijl I.J.M. 1998. The sustainability of livestock farming in communal rangelands in the North West Province – experience from a long term grazing experiment. *Proceedings of a Symposium on Policy-making for the Sustainable Use of southern African Communal Rangelands*. University of Fort Hare, Alice, South Africa.
 - Meyer T.C., van den Heever J. 1999. Perceptions in Ganyesa on livestock farming. *North West Focus*, 1999(1): 6-8. Department of Agriculture, North West Province, Potchefstroom.

- Meyer T.C. & Richter C.G.F. 2000. Die Prosopis bedreiging in die ariede gebiede van Suid-Afrika. North West Focus 2000(2). Department of Agriculture, North West Province, Potchefstroom.
- Richter C.G.F. & Meyer T.C. 2000. Die beheer en bestryding van Prosopis. North West Focus 2000(2). Department of Agriculture, North West Province, Potchefstroom.
- Richter C.G.F. & Meyer T.C. 2001. Perspective on bush encroachment in the North West Province. North West Focus 2001(1). Department of Agriculture, North West Province, Potchefstroom.
- Meyer, T.C., C.F.G. Richter & G.N. Smit . 2001. The implications of vegetation dynamics in the Kalahari Thornveld for game ranching. North West Focus 2001(2): 3-10. NW DACE, Potchefstroom.
- Meyer T.C. & Nel J.G. 2002. Towards sustainable development: promoting environmental awareness and training in the mining sector. Proceedings of the First Botswana International Mining Conference, Gaborone, November.
- Numerous popular publications
- 36 Presentations at professional congresses/symposia

2016-04-29

13.2 Appendix B: Proof of pre-authorisation consultation with the competent authority

Minutes of a pre-application meeting held at 08:30 on 24 November 2016 at the Department of Environmental Affairs Head Office, Steve Biko Avenue, Pretoria.

Attendance:

Name	Organisation	EIA Role/Responsibility
Mr. Mohammad Essop	DEA	Competent authority
Mr. Coenraad Agenbach	DEA	Competent authority
Mr. Sizwe Kuzwayo	Skypower	Applicant
Mr. Nate van Geest	Skypower	Applicant
Mr. Theunis Meyer	NWU-CEM	EAP
Mr. Reece Alberts	NWU-CEM	EAP

Agenda items

1 Opening

Mr. Essop opens and welcomes everybody to the meeting. He also explained the purpose of the meeting as an important step to ensure that the EIA process is designed and implemented in such a way so as to ensure that all the legal requirements in this regard are complied with. Afterwards, all participants introduced themselves.

2 Introduction to the project

Mr Meyer introduces the meeting to the proposed project. He explains that two EIA processes have already been completed in the past for this project, resulting in two separate Environmental Authorisations, one issued by DEA and the other by EC DEDEAT. Due to the fact that the initial EA had lapsed prior to the commencement of the project, another EA application needs to be submitted, so that another EA could be obtained for the project that had been bid in the DOE REIPP programme.

After a discussion on the background, it was agreed that the new application should include all the listed activities that are triggered. Once the new EA gets issued, the remaining EA could then be amended to allow it to lapse shortly thereafter, so that only one valid EA remains.

At the moment there is uncertainty of the entity in whose name the application will be submitted. The client needs to provide clarity on the matter prior to the submission of the application.

3 Listed activities triggered

Mr. Meyer indicated that the following listed activities had been identified

GNR	Activity	Activity description
984	1	The development of facilities or infrastructure for the generation of electricity from a renewable resource where the electricity output is 20 megawatts or more, excluding where such development of facilities or infrastructure is for photovoltaic installations and occurs within an urban area.
984	15	The clearance of an area of 20 hectares or more of indigenous vegetation, excluding where such clearance of indigenous vegetation is required for- (i) the undertaking of a linear activity; or (ii) maintenance purposes undertaken in accordance with a maintenance management plan.
983	19	The infilling or depositing of any material of more than 5 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 5 cubic metres from (i) a watercourse;
983	24	The development of- (ii) a road with a reserve wider than 13,5 meters, or where no reserve exists where the road is wider than 8 metres; but excluding (b) roads where the entire road falls within an urban area.
983	56	The widening of a road by more than 6 metres, or the lengthening of a road by more than 1 kilometre (i) where the existing reserve is wider than 13,5 meters; or (ii) where no reserve exists, where the existing road is wider than 8 metres; excluding where widening or lengthening occur inside urban areas.
985	4	The development of a road wider than 4 metres with a reserve less than 13,5 metres outside urban areas, in critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans.
985	18	The widening of a road by more than 4 metres, or the lengthening of a road by more than 1 kilometre outside urban areas, in (ee) critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional, plans; or (ii) areas on the watercourse side of the development setback line or within 100 metres from the edge of a watercourse where no such setback line has been determined.

Some of the last five activities may be triggered, depending on which access road alternative will be preferred. However, chances are that whichever access road option is preferred, it will not trigger these listed activities.

After some reflection, Mr. Essop enquired about the inclusion of the following activities:

GNR	Activity	Activity description
983	11	The development of facilities or infrastructure for the transmission and distribution of electricity (i) outside urban areas or industrial complexes, with a capacity of more than 33 but less than 275 kilovolts
983	12	The development of (x) buildings exceeding 100 square metres in size; or (xii) infrastructure or structures with a physical footprint of 100 square metres or more; where such development occurs- (a) within a watercourse; (b) in front of a development setback; or (c) if no development setback exists, within 32 metres of a watercourse, measured from the edge of a watercourse; excluding (dd) where such development occurs within an urban area; or (ee) where such development occurs within existing roads or road reserves.

The EAP agreed that these two activities also need to be included in the application.

4 Understanding 2014 EIA regulations requirements

The following matters were highlighted when the requirements of the 2014 EIA regulations (GNR 982) were discussed:

- Confirmation needs to be obtained from the specialists that the specialist studies and the recommendations therein are still applicable;
- Landowner consent with regard to the proposed development needs to be obtained;
- Although the 2014 regulations require the submission of impact assessments and mitigation measures in the scoping report, the report will not be rejected if these matters are not addressed in the scoping report, but only in the EIA report and EMPr later in the process;
- All requirements of Chapter 6 of the 2014 EIA regulations need to be complied with during the public participation process;
- All I&APs identified in regulation 41(b), GNR 982 must be given written notice of the application or proposed application, which is subjected to public participation. In this regard, the EAP was informed that the DEA branch responsible for biodiversity conservation must specifically be included;
- Due to the previous EIA processes that were undertaken, a number of I&APs had already been identified before and all these will again be invited to participate in the current application;

- I&APs who participated in the previous EIA processes needs to re-register in order to participate in the new EIA process;
- Advertisements will again be published in three local newspapers that are distributed in the area where the proposed development will take place and that was used in the previous EIA processes;
- All documents submitted to the competent authority must include 1 hard copy and 2 electronic copies on CD.

5 Time-frames

Mr Meyer indicated that the proposed time frames are as follows:

- Pre-application meeting with DEA - week of 28 November 2017
- Circulation of I&AP notification/registration letter and Background Information Document - Wednesday, 7 December 2016
- Publication of newspaper advertisements Thursday, 8 December 2016
- Submission of application and Scoping report for public review - Friday, 6 January 2017
- Submission of final Scoping Report for DEA acceptance - Monday, 13 February 2017
- Acceptance of Scoping Report - Tuesday, 28 March 2017 latest
- Submission of Draft EIR & EMPr for public review - Friday, 31 March 2017
- Submission of Final EIR & EMPr for DEA approval - Monday, 8 May 2017
- Approval of EIR & EMPr and issuing of EA by 24 August 2017 latest

The above time frame is based on very little time for EAP involvement and the minimum time frames for public participation (44 days x 2) and DEA review (43 days & 107 days).

The DEA officials responded by stating that the competent authority will honour the official time frames, as provided for in the regulations. Due to various reasons, they cannot commit their officials to any shorter time frames.

They will, however, take any representation regarding developments in the DoE REIPP programme into consideration in their involvement in the EIA process.

The competent authority also agreed with the EAP's proposed time frames and advised that it will not make much difference to submit the application before 15 December 2016 in order to shorten the EIA process by a number of days. The applicant was advised to only submit the application in early January 2017.

6 Other issues

None

7 Closure

The meeting closed at 09:45.

13.3 Appendix C: Proof of communication with I&APS regarding the EIA application

13.3.1 Appendix C1: Written notices with invitations to register as Interested and Affected Parties (I&APs), indicating that the Scoping Report is available for review were e-mailed, mailed (registered letter) and/or faxed to all I&APs, including the land owners, the Inxuba Yethemba Local Municipality, the Chris Hani District Municipality, the Eastern Cape Department of Economic Development, Environmental Affairs, and Tourism (DEDEAT), the Directorate Land Use and Soil Management in the National Department of Agriculture, Forestry and Fisheries (DAFF), the Chief Director Eastern Cape, Department of Water Affairs (DWA), the Eastern Cape Provincial Heritage Resources Agency, as well as the ward councillor.



NORTH-WEST UNIVERSITY
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Tel: +27 (0) 18 299-1588

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Email: 20801114@nwu.ac.za

Web: www.nwu.ac.za/cem

9 January 2017

Interested and Affected Party
per mail, e-mail & fax

Dear sir/madam,

**ENVIRONMENTAL IMPACT ASSESSMENT PROCESS IN SUPPORT OF THE PROPOSED
CONSTRUCTION OF 75 MW PHOTOVOLTAIC POWER PLANT AND ASSOCIATED
INFRASTRUCTURE IN THE VICINITY OF THE COLLETT SUBSTATION NEAR
MIDDELBURG IN THE EASTERN CAPE, INXUBA YETHEMBA LOCAL MUNICIPALITY**

This development has already been authorised by the Department of Environmental Affairs in 2013 (Environmental Authorisation No. 14/12/16/3/3/2/385 & NEAS Ref. DEA/NEAS/0001343/2012) and the Eastern Cape Department of Economic Development, Environmental Affairs and Tourism (Environmental Authorisation No. EC 131/CH/LN3/14/14-12 & NEAS Ref. ECP/EIA/0001165/2014).

This application is submitted because the original environmental authorisation lapsed in July 2016.

Project information

AMDA Developments (Pty) Ltd proposes to develop a Photovoltaic (PV) Power Plant with an electricity generation capacity of 75 MW, as well as associated infrastructure such as roads and a power line. The development will cover an area of approximately 225 hectares on the farms Harmsfontein 335, Remainder of Brakke Kuilen 180 and Buffelspoort 336 near Middelburg in the Eastern Cape. The site is situated at 31°32'03.54"S and 25°08'59.03"E, just south of the Rosmead Siding.

The purpose of the proposed solar energy facility is to add new capacity for generation of renewable energy to the national electricity mix, in line with government policy. The PV facility is designed to operate continuously with low maintenance for 20 years. The power will feed into the Eskom electricity grid via the existing Collett substation.

Environmental Impact Assessment process

An application for environmental authorisation for this project has been submitted to the Department of Environmental Affairs. The Centre for Environmental Management at the North-west University has been appointed to conduct the environmental impact assessment (EIA) and facilitate the public participation process for the development.

Public Participation process

• **Background Information Document**

A Background Information Document (BID) with information on the proposed development and EIA process is included with this letter for your attention. This document aims to provide you as Interested and Affected Party (I&AP) with:

- an overview of the proposed development;
- an overview of the Environmental Impact Assessment (EIA) process that will be followed to assess the potential environmental impacts of the proposed development;
- information on how you can become involved in the EIA and public participation processes to receive information and raise environmental issues that concern and/or interest you.

Please study the BID and complete the attached registration form, in order to assist the Environmental Assessment Practitioner (EAP) to identify additional environmental impacts and/or management measures that need to be investigated/considered during the EIA process.

• **I&AP registration**

In order to register as an interested and/or affected party (I&AP), please complete the registration form that is attached to the BID and an indication of any direct business, financial, personal or other interest in the matter to the contact person below within 14 days from the date of this notice. Future correspondence will only be distributed to registered I&APs.

Please return the completed form to the contact person, Mr Tshepiso Seobi at e-mail tshepiso.seobi@nwu.ac.za or fax 086 513 7996 or Private Bag X6001, Potchefstroom, 2520, should you want to identify any environmental impacts and/or management measures that need to be investigated/considered during the EIA process or require more information in this regard.

• **Review of the Scoping report**

The scoping report for this proposed development is available for a review period of 30 days from 16 January 2017. A hard copy of the report will be available in the Middelburg Public Library, while electronic copies will be made available on request.

Yours sincerely



Theunis Meyer

Pri. Sci. Nat.

CENTRE FOR ENVIRONMENTAL MANAGEMENT



NORTH-WEST UNIVERSITY
YUNIBESITHI YA BOKONE-BOPHIRIMA
NOORDWES-UNIVERSITEIT
POTCHEFSTROOM CAMPUS

Internal Box 150, Private Bag X6001, Potchefstroom,
South Africa 2520

Centre for Environmental Management

Tel: +27 (0) 18 299-1588

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Email: 20801114@nwu.ac.za

Web: www.nwu.ac.za/cem

9 Januarie 2017

Geïnteresseerde en Geëffekteerde Party
per pos, e-pos & faks

Meneer/mevrou

**OMGEWINGSIMPAKBEPALINGSPROSES TER ONDERSTEUNING VAN DIE
VOORGESTELDE KONSTRUKSIE VAN 'N 75 MW-FOTOVOLTAÏESE SONKRAGANLEG
EN GEASSOSIEERDE INFRASTRUKTUUR IN DIE OMGEWING VAN DIE COLLETT
SUBSTASIE NABY MIDDELBURG IN DIE OOS-KAAP, INXUBA YETHEMBA PLAASLIKE
MUNISIPALITEIT**

Belangrike kennisgewing: Hierdie ontwikkeling is reeds deur die Departement van Omgewingsake in 2013 gemagtig (Omgewingsmagtiging No. 14/12/16/3/2/385 & NEAS No. DEA/NEAS/0001343/2012), asook die Oos-Kaap Departement van Ekonomiese Ontwikkeling, Omgewingsake en Toerisme in 2015 (Omgewingsmagtiging No. EC 131/CH/LN3/14/14-12 & NEAS No. ECP/EIA/0001165/2014). Hierdie aansoek word ingedien omdat die oorspronklike omgewingsmagtiging in Julie 2016 verval het.

Projekinsligting

AMDA Developments (Pty) Ltd beplan om 'n Fotovoltaïese (PV) sonkragaanleg met 'n kapasiteit om 75 MW elektrisiteit op te wek, asook geassosieerde infrastruktuur soos paaie en 'n kraglyn te ontwikkel. Die ontwikkeling sal 'n gebied van ongeveer 225 hektaar beslaan op die plase Harmsfontein 335 en Restant van Brakke Kuilen 180 naby Middelburg in die Oos-Kaap. Die terrein is geleë by 31°32'03.54"S en 25°08'59.03" O, net suid van die Spoornet Rosmead Sylyn.

Die doel van die beoogde sonkragaanleg is om in lyn met regeringsbeleid, addisionele kapasiteit vir die opwekking van hernubare energie tot die nasionale energie-mandjie toe te voeg. Die PV-aanleg word ontwerp om met lae onderhoud deurlopend vir 'n periode van 20 jaar te opereer. Die elektrisiteit sal in die bestaande Eskom elektrisiteitsnetwerk invoer via die bestaande Collett substasie.

Omgewingsimpakbepalingsproses

'n Aansoek vir 'n omgewingsmagtiging vir hierdie projek is by die Departement van Omgewingsake ingedien. Die Sentrum vir Omgewingsbestuur (CEM) aan die Noordwes-Universiteit is aangestel om die omgewingsimpakbepalingsproses (OIB-proses) vir die ontwikkeling te onderneem en die gepaardgaande publieke deelnameproses te fasiliteer.

Publieke deelnameproses

- **Agtergrondinligtingsdokument**

'n Agtergrondinligtingdokument (AID) met inligting oor die voorgestelde ontwikkeling en die OIB-proses (ongelukkig slegs in Engels) word saam met hierdie skrywe gestuur vir u aandag. Die dokument poog om u as geïnteresseerde en geaffekteerde party (I&AP) van die volgende te voorsien:

- 'n oorsig oor die voorgestelde ontwikkeling;
- 'n oorsig van die OIB-proses wat gevolg gaan word om die potensiele omgewingsimpakte van die voorgestelde ontwikkeling te assesseer;
- Inligting oor hoe u by die OIB- en publieke deelnameprosesse betrokke kan raak ten einde inligting te ontvang en kan help om potensiele omgewingskwessies waaroor u bekommerd is of wat u interesseer, te identifiseer.

Bestudeer asseblief die AID en voltooi die aangehegte registrasievorm, ten einde die Omgewingsassesseringspraktisyn (EAP) te help om die omgewingsimpakte en bestuursmaatreëls te identifiseer wat gedurende die OIB proses bestudeer moet word.

- **Registrasie as geïnteresseerde en geaffekteerde party**

U word hiermee ook uitgenooi om as 'n geïnteresseerde en geaffekteerde party te registreer ten einde aan die OIB proses deel te neem. Toekomstige korrespondensie sal slegs aan geregistreerde geïnteresseerde en geaffekteerde partye gestuur word.

Voltooi asb die registrasievorm wat aan die AID aangeheg is en bring dit na die publieke vergadering, of stuur dit aan my by e-pos tshepiso.seobi@nwu.ac.za of faks 086 513 7996 of Privaatsak X6001, Potchefstroom, 2520 indien u aan die OIB proses wil deelneem of enige omgewingskwessies en/of bestuursmaatreëls wil identifiseer wat gedurende die OIB proses ondersoek moet word of verdere inligting benodig.

- **Oorsig/hersiening konsep Bestekverslag**

Die konsep Bestekverslag vir die voorgestelde ontwikkeling is beskikbaar vir 'n oorsigperiode van 30 dae vanaf 16 Januarie 2017. 'n Harde kopie van die verslag sal beskikbaar gestel word in die Middelburg Openbare Biblioteek, terwyl elektroniese kopieë ook beskikbaar gestel sal word op versoek.

Die uwe



Theunis Meyer

Pri. Sci. Nat.

SENTRUM VIR OMGEWINGSBESTUUR

13.3.2 Appendix C2: Background Information Document sent to I&APs

Background Information Document (BID) for the proposed development of a Photovoltaic Power Plant

Important note: This development has already been authorised by the Department of Environmental Affairs in 2013 (EA No. 14/12/16/33/2/385 & NEAS Ref. DE/NEAS/0001343/2012) and the Eastern Cape Department of Economic Development, Environmental Affairs and Tourism in 2015 (EA No. EC 131/CHILN3/14/14-12 & NEAS Ref. ECP/EA/0001165/2014). This application is to replace the original environmental authorisation that has lapsed.

The aim of this document

This document aims to provide you as Interested and Affected Party (I&AP) with:

- An overview of the proposed development;
- An overview of the Environmental Impact

Assessment (EIA) process that will be followed to assess the potential environmental impacts of the proposed development;

- information on how you can become involved in the EIA and public participation processes to receive information and raise environmental issues that concern and/or interest you.

The proposed project

AMDA Developments (Pty) Ltd proposes to develop a Photovoltaic (PV) Power Plant with an electricity generation capacity of 75 MW, as well as associated infrastructure such as roads and a power line. The development will cover an area of approximately 225 hectares on the farms Harmsfontein 335, Remainder of Brakke Kuilen 180 and Buffelspoort 336 near Middelburg in the

Eastern Cape. The site is situated at 31°32'03.54"S and 25°08'59.03"E, just south of the Rosmead Siding.

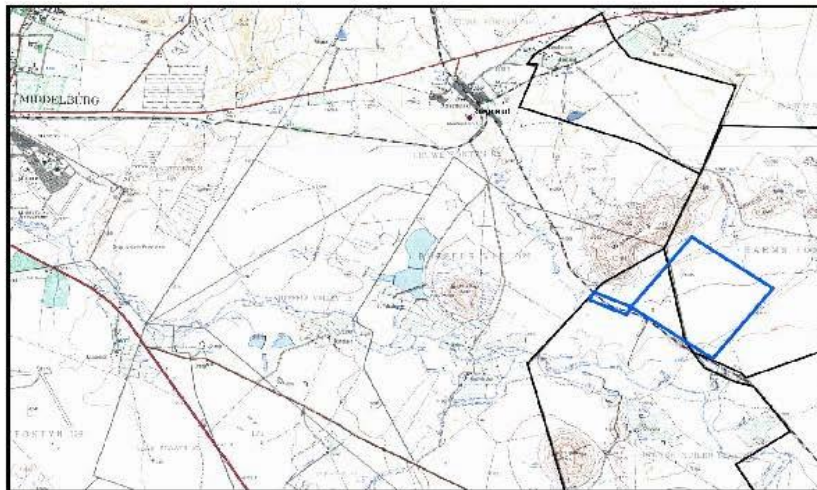
The purpose of the proposed solar energy facility is to add new capacity for generation of renewable energy to the national electricity mix, in line with government policy. The PV facility is designed to operate continuously with low maintenance for 20 years. The power will feed into the Eskom electricity grid via the existing Collett substation.

Photovoltaics involve the conversion of sunlight into direct current (DC) electricity through the use of thin layers of materials known as semi-conductors.

The proposed facility would comprise:

- Arrays of photovoltaic panels for the generation of electricity;
- Dedicated inverters to convert the electricity from DC to AC;
- Underground cabling between the photovoltaic panels and dedicated inverters;
- Overhead 132 kV power line connecting into the Eskom Collet substation;
- External access road along Rosmead-Cradock railway line;
- Internal access roads;
- Administrative/security buildings.

The aim of the design and lay-out of the facility will be to maximise electricity generation through exposure to solar radiation, while minimising infrastructure, operational and maintenance costs, as well as environmental & social impacts.



Environmental Impact Assessment Process

Due to the extent and nature of the project, the proponent is required to obtain an Environmental Authorisation (EA) prior to commencement of the development.

The Centre for Environmental Management (CEM) has been appointed to act as the independent Environmental Assessment Practitioner (EAP) to conduct an Environmental Impact Assessment (EIA) and related processes and specialist studies in order to obtain the required environmental authorisation.

The process is being undertaken in terms of the National Environmental Management Act (No. 107 of 1998) (NEMA).

The EIA regulations promulgated in terms of NEMA prescribe the procedures that must be followed in the consideration, investigation, assessment, and reporting of activities that have been identified. These regulations aim to provide the competent authority with adequate information to make decisions that will ensure that activities which may have an unacceptable negative impact on the environment are not authorised, and activities that are authorised are undertaken in such a manner that the environmental impacts are managed to acceptable levels.

When an applicant proposes to undertake identified activities, applications for authorisation must be submitted to the competent authorities. All such applications must be supported by

reports that are compiled upon completion of the prescribed assessment procedures. After the competent authorities have made decisions on the applications, appeals may be lodged against the decisions, or parts of the decisions.

The aims of environmental assessments are to:

- establish the environmental sensitivity of the site;
- determine environmental impacts related to the project;
- identify alternatives to the current proposals;
- inform I&APs (e.g. neighbours & community groups) about the project and provide them the opportunity to identify environmental issues and alternatives;
- assess the proposals and the issues raised;
- identify opportunities to prevent and mitigate potential environmental impacts.

What process will be undertaken?

The EIA Regulations provide for two types of assessment processes i.e.:

- Basic Assessment;
- Scoping & Environmental Impact Assessment.

The proposed development includes the following listed activities:

- Activity 1, listed in GN R. 984 of 2014:

The development of facilities or infrastructure for the generation of electricity from a renewable resource where the electricity output is 20 megawatts or more, excluding where such development of facilities or infrastructure is for photovoltaic installations and occurs within an urban area.

- Activity 15, listed in GN R. 984 of 2014:

The clearance of an area of 20 hectares or more of indigenous vegetation, excluding where such clearance of indigenous vegetation is required for- (i) the undertaking of a linear activity; or (ii) maintenance purposes undertaken in accordance with a maintenance management plan.

- Activity 11, listed in GN.R. 983 of 2014:

The development of facilities or infrastructure for the transmission and distribution of electricity (i) outside urban areas or industrial complexes, with a capacity of more than 33 but less than 275 kilovolts

- Activity 12, listed in GN.R. 983 of 2014:

The development of (x) buildings exceeding 100 square metres in size; or (xii) infrastructure or structures with a physical footprint of 100 square metres or more; where such development occurs-(a) within a watercourse; (b) in front of a development setback; or (c) if no development setback exists, within 32 metres of a watercourse, measured from the edge of a watercourse; excluding (dd) where such development occurs within an urban area; or (ee) where such development occurs within existing roads or road reserves.

- Activity 19, listed in GN.R. 983 of 2014:

The infilling or depositing of any material of more than 5 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 5 cubic metres from (i) a watercourse.

These listed activities may not commence without environmental authorisation after the investigation, assessment and communication of potential impacts have been undertaken that followed the **full EIA process**.

The full EIA process for this project involves the following steps:

- Engaging with the competent authority;
- Development of BID & newspaper advertisements & site notices;
- I&AP registration & circulation of BID to registered I&APs;
- Drafting of Scoping Report (SR);
- Circulation of draft SR to registered I&APs for review;
- Revision of SR, based on I&AP comments;
- Submission of final SR to authorities;
- Conducting of specialist studies;
- Drafting of Environmental Impact Report (EIR) & Environmental Management Programme (EMPr);
- Circulation of draft EIR & EMPr to registered I&APs for review;
- Revision of draft EIR & EMP, based on I&AP comments;
- Submission of final EIR & EMPr to competent authority for consideration & decision-making;
- Informing registered I&APs of the decision by competent authority (letter & newspaper ad).

What environmental issues have been already been identified?

- Agricultural productivity;
- Agricultural potential;
- Surface water impacts;
- Vegetation impacts;
- Soil impacts;
- Animal life impacts (including birds);
- Heritage impacts – archaeological & paleontological;
- Visual impacts;
- Security of farmers, farm workers, livestock & farm infrastructure;
- Other social impacts.

Why and how should you get involved?

One of the important parts of the environmental authorisation processes is public consultation and participation, which provides I&APs with the opportunity to gain a better understanding of the proposed development and to raise any environmental issues or concerns they may have. You are invited to register as an I&AP in the environmental assessment processes of the proposed project.

Please note that in order to be registered as an I&AP, you must request that your name be added to the registered I&AP list or provide written comments on the proposal or raise issues/concerns that you would like to be

addressed in the assessment (see attached form). Future correspondence will only be distributed to **registered I&APs**.

Details of the EAP:

Theunis Meyer

Telephone: 018 299 1467 Fax: 086 513 7996

E-mail: theunis.meyer@nwu.ac.za

Contact person for I&AP registration and correspondence:

Tshepiso Seobi

Centre for Environmental Management

Private Bag X6001, Potchefstroom, 2520

Telephone: 018 299 4299 Fax: 018 299 4266

E-mail: tshepiso.seobi@nwu.ac.za



Tracking PV solar panels near Kathu, Northern Cape

Proposed development of PV Power plant at Eskom Collet substation near Middelburg, Eastern Cape

Interested and Affected Party registration

Please e-mail form back to contact person (tshepiso.seobi@nwu.ac.za) or fax to 086 513 7996

Name and surname:		Language preference:	
--------------------------	--	-----------------------------	--

Physical Address:

Do you wish to receive future communication?

Yes No

Communication preference?

Registered Letter Fax E-mail

Postal address: _____

Fax number:		E-mail address:	
--------------------	--	------------------------	--

Please indicate:

- any environmental issues of concern regarding the proposed project?

- any suggestions for alternatives or to improve the proposed project?

- any direct business, financial, personal or other interest which you may have in the approval or refusal of the application?

13.3.3 Appendix C3:I&AP registration forms received from I&APs in 2012

Proposed development of PV Power plant at Eskom Collet substa on near Middelburg, Eastern Cape

Interested and A ected Party registra on

Please hand form back or fax to 018 299 4266

Name and surname:	BRADLEY GIBSON	Language preference:	ENGLISH
-------------------	----------------	----------------------	---------

Physical Address:

28 DA PLESSIS STREET, MIDDELBURG, EASTERN CAPE

Do you wish to receive future communication?

Yes

No

Communication preference?

Letter

Fax

E-mail

Postal address: P O BOX 40, MIDDELBURG, EASTERN CAPE, 5700

Fax number:	088049842116	E-mail address:	bradleyg@ewb.co.za
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Please indicate:

- any environmental issues of concern regarding the proposed project?

BLUE CRANES AND OTHER LARGE BIRD IN THE AREA (SUCH AS
LUDWIG'S BUSTARD AND SECRETARY BIRD) ARE MY CONCERN

- any suggestions for alternatives or to improve the proposed project?

IT WILL BE GOOD TO MARK POWER LINES WITH FLAPPERS, SO
THAT THEY ARE MORE VISIBLE FOR LARGE BIRDS (IT WONT
BE NECESSARY TO MARK THE SECTION CLOSE TO THE RAILWAY LINE,
BUT OTHER AREAS IS NEEDED)

- any direct business, financial, personal or other interest which you may have in the approval or refusal of the application?

I AM HAPPY WITH USING RENEWABLE ENERGY

Proposed development of PV Power plant at Eskom Collet substa on near Middelburg, Eastern Cape

Interested and A ected Party registra on

Please hand form back or fax to 018 299 4266

Name and surname:	Tubby Victor	Language preference:	Afrikaans
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Physical Address:

Mignon
Middelburg EC 5900

Do you wish to receive future communication?

Yes No

Communication preference?

Letter Fax E-mail

Postal address: Postbus 295
Middelburg 5900 (EC)

Fax number:		E-mail address:	tubbyvictor@gmail.com
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Please indicate:

- any environmental issues of concern regarding the proposed project?

- any suggestions for alternatives or to improve the proposed project?

- any direct business, financial, personal or other interest which you may have in the approval or refusal of the application?

Proposed development of PV Power plant at Eskom Collet substa on near Middelburg, Eastern Cape

Interested and A ected Party registra on

Please hand form back or fax to 018 299 4266

Name and surname:	Timus du Plessis	Language preference:	A
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Physical Address: Buffelspoort, Middelburg, 5900,
Oos-Kaap

Do you wish to receive future communication?

Yes

No

Communication preference?

Letter

Fax

E-mail

Postal address: P.O. Box 184, Middelburg, 5900

Fax number:	-	E-mail address:	timus@adsactive.com
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Please indicate:

any environmental issues of concern regarding the proposed project?

-

any suggestions for alternatives or to improve the proposed project?

If possible use gravel road
next to railway

any direct business, financial, personal or other interest which you may have in the approval or refusal of the application?

-

Proposed development of PV Power plant at Eskom Collet substa on near Middelburg, Eastern Cape

Interested and A ected Party registra on

Please hand form back or fax to 018 299 4266

Name and surname:	FRANCOIS NEL	Language preference:	ENGLISH
CHRIS HANI DISTRICT MUNICIPALITY			
Physical Address:			
29 PRINCE ALFRED STREET			
QUEENSTOWN			
Do you wish to receive future communication?			
Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>
Communication preference?			
Letter	<input type="checkbox"/>	Fax	<input type="checkbox"/>
E-mail	<input checked="" type="checkbox"/>		
Postal address:			
P/BAG X 7121			
QUEENSTOWN , 5320			
Fax number:	045 838 3022	E-mail address:	fnel@chrishanidm.gov.za nmbananga@chrishanidm.gov.za

Please indicate:

- any environmental issues of concern regarding the proposed project?

- Public participation process

- Environmental health and biodiversity issues

- Impact on birds

- any suggestions for alternatives or to improve the proposed project?

- Environmental friendly pannels should be used to reduce threat to birds and other animal species.

- any direct business, financial, personal or other interest which you may have in the approval or refusal of the application?

Chris Hani District Municipality's interest in the approval of this application is generation of renewable energy related to the DM's response to Climate Change

Proposed development of PV Power plant at Eskom Collet substa on near Middelburg, Eastern Cape

Interested and A ected Party registra on

Please hand form back or fax to 018 299 4266

Name and surname:	ANDRÉ PRINSLOO	Language preference:	ENGLISH
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Physical Address:

CHRIS HANI DISTRICT MUNICIPALITY, VAN RENEN
STREET, MIDDELBURG EC (MUNICIPAL HEALTH
SERVICES)

Do you wish to receive future communication?

Yes

No

Communication preference?

Letter

Fax

E-mail

Postal address:

PRIVATE BAG X7121, QUEENSTOWN
5320 or PO BOX 55 Middelburg EC

Fax number:

049-8423582

E-mail address:

aprinloo@chrishanidm.gov.za

Please indicate:

- any environmental issues of concern regarding the proposed project?

All legislation regarding to and provision of sanitary
facility for staff, waste management and
water facilities must be to the satisfaction of the

CHRIS HANI DISTRICT MUNICIPALITY - MUNICIPAL HEALTH SERVICES/
ENVIRONMENTAL MANAGEMENT SECTION to ensure no pollution of

- any suggestions for alternatives or to improve the proposed project? the environment

All relative documentation applicable to this
project must be submitted to the
CHDM - MHS/EM Section for comments

- any direct business, financial, personal or other interest which you may have in the approval or refusal of the application?

13.4 Appendix D: Proof of newspaper advertisements

13.4.1 Text that was used for the site notices and newspaper advertisements.

NOTIFICATION OF PUBLIC PARTICIPATION PROCESS
ESTABLISHMENT OF A 75 MW PHOTOVOLTAIC SOLAR POWER PLANT WITH ASSOCIATED INFRASTRUCTURE BY AMDA DEVELOPMENTS (PTY) LTD
<p>Proposed Project: Construction of a 75 MW photovoltaic solar power plant with associated infrastructure near Collet substation, Middelburg, Eastern Cape.</p> <p>Location: Farms Harmsfontein 336, Buffelspoort 336 and Remainder of Brakke Kuilen 180, adjacent to the Collett Railway Siding near Rosmead, in the vicinity of Middelburg in the Eastern Cape Province (S 31°32'5.5309", E 25°10'2.0424").</p> <p>Notice is hereby given of a public participation process in terms of Regulation 41(2) of the 2014 EIA Regulations, published in Government Gazette No. 982 under Section 24(5) of the National Environmental Management Act, 1998 (No. 107 of 1998) (NEMA) to apply for environmental authorisation to undertake the following activities listed in terms of the NEMA in 2014, following the Scoping and Environmental Impact Reporting process:</p> <p>Activity 1 (GN R. 984 of 2014): The development of facilities or infrastructure for the generation of electricity from a renewable resource, where the electricity output is 20 megawatts or more, excluding where such development of facilities or infrastructure is for photovoltaic installations and occurs within an urban area.</p> <p>Activity 15 (GN R984 of 2014): The clearance of an area of 20 hectares or more of indigenous vegetation, excluding where such clearance of indigenous vegetation is required for- (i) the undertaking of a linear activity; or (ii) maintenance purposes undertaken in accordance with a maintenance management plan.</p> <p>Activity 12 (GN R. 983 of 2014): The development of (ii) channels exceeding 100 square metres in size; (x) buildings exceeding 100 square metres in size; or (xii) infrastructure or structures with a physical footprint of 100 square metres or more; where such development occurs (a) within a watercourse; or (c) if no development setback exists, within 32 metres of a watercourse, measured from the edge of a watercourse, excluding (dd) where such development occurs within an urban area; or (ee) where such development occurs within existing roads or road reserves.</p> <p>Activity 19 (GN R. 983 of 2014): The infilling or depositing of any material of more than 5 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 5 cubic metres from (i) a watercourse; but excluding where such infilling, depositing, dredging, excavation, removal or moving (a) will occur behind a development setback; (b) is for maintenance purposes undertaken in accordance with a maintenance management plan.</p> <p>Activity 11 (GN R. 983 of 2014): The development of facilities or infrastructure for the transmission and distribution of electricity (i) outside urban areas or industrial complexes, with a capacity of more than 33, but less than 275 kilovolts.</p> <p>Please note: This development has already been authorised by the Department of Environmental Affairs in 2013 - Environmental Authorisation Reg. No. 14/12/16/3/3/2/385 & NEAS Ref. No. DEA/NEAS/0001343/2012 and the Eastern Cape Department of Economic Development, Environmental Affairs and Tourism - Environmental Authorisation Reg. No. EC 131/CH/LN3/14/14-12 & NEAS Ref. No. ECP/EIA/0001165/2014. This application is submitted because the original environmental authorisation lapsed in July 2016.</p> <p>Opportunity to register as an Interested and Affected Party: In order to register as an interested and/or affected party (I&AP), please submit your name, contact information (preferred method of notification, e.g. e-mail address or fax number) and an indication of any direct business, financial, personal or other interest in the matter to the contact person below within 30 days from the date of this notice.</p> <p>Availability of background information document and scoping report for public review: A background information document will be sent to all registered I&APs upon receipt of registration. The scoping report for this proposed development will be made available for a review period of 30 days from 06 January 2017. A copy of the report will be available in the Middelburg Public Library, while electronic copies will be made available on request. Please contact the contact person in this regard.</p> <p>For more information contact: Mr. Tshepiso Seobi, Centre for Environmental Management, Internal Box 150, Private Bag X6001, Potchefstroom, 2520, Tel: (018) 299 4299, Fax: (086) 513-7996, E-mail: tshepiso_seobi@nwu.ac.za.</p> <p>Date of advertisement: 8 December 2016</p>

13.4.2 Appendix D2: Proof of notice published in the Advertiser/Karoo Nuus on 8 December 2016

Thursday 8 December, 2016

Advertiser

briewe | letters 7

Graaff-Reinet het nou ook rommelstatus bereik

• Christa Hahn, Graaff-Reinet:

Op 18 Januarie 2017 sal ek 51 jaar woonagtig te Graaff-Reinet wees. Dit was 'n pragtige, vooruitstrewende dorp gevees en selfs na die nuwe bedeling toe die ANC oorgeneem het, het dit goed gegaan tot en met die reserwe fondse oënskynlik opgebruik was. Daar word egter nou deur Eskom gedreig om ons krag af te sny. Ek is geskok, hartseer, oorluf en woedend... Hoe kon dit gebeur dat ons tot rommelstatus afgedaer is? Ek het tot die volgende slotsom gekom:

Terwyl Mnr Pravin Gordham nog Minister van Streek-en-plaaslike Owerhede was en ook 'n lakei vir die ANC, is daar onder sy bestuur besluit om 'n beter stembedeling vir die ANC tydens die afgelepe munisipale verkiesing te verkry, deur die amalgamasie van Graaff-Reinet en twee ander munisipaliteite, een, naamlik Jansenville, wat al vir 'n geruime tyd bankrot was. Mnr Gordham is nou 'n held in almal in Suid-Afrika en die wêreld se oë en baie kundig om die land van rommelstatus te red.

My nederige versoek aan Mnr Gordham, aangesien hy 'n aandeel gehad het in die onuit-houdbare situasie waarin ons, ons nou bevind is om 'n plan te maak dat ons krag nie vanaf Januarie 2017 afgesny sal word nie. Ek is deel van die kiekorkoring-brigade en vind Graaff-Reinet se hitte onuit-houdbaar en soos al my vriende maak ons staat op ons waaiers vir verligting van die versengende hitte. Verder gaan al ons vries-en-yskaste uitbrand van die aanhoudende onderbrekings. We gaan finansieel na staan vir die herstel of verving-

ing van al die toerusting? Dit sal gaaf wees as hierdie skrywe onder die belangrike mense se aandag gebring sou word. Ons wil met van die nuwe burgemeester van die Dr Beyers Naudé munisipaliteit ook 'n verklaring hê. Ek glo dat Oom Bey in sy graf omdraai as hy moet weet wat van sy geliefde dorp geword het. Ons wag ongeduldig op 'n antwoord. • Die Advertiser het die munisipaliteit genader vir kommentaar op dié brief - daar is geëndrem- oem om dit volgende week te publiseer.

Questions remain unanswered

• Louis du Preez, Graaff-Reinet:

I was disappointed that the advertiser did not submit my letter to the Dr Beyers Naudé Municipality as submitted by myself Louis Du Preez in full. In my original letter to the above municipality regarding the above heading, several questions were submitted to the Municipal Manager. I would expect that this letter is sent as is to the Mayor and Municipal Manager. Leolynn Smith, the Municipalities Communications Office has reported that the Municipal Manager and Eskom had reached an agreement and that the R16.8 million would be paid in two instalments. That is certainly good news but one of my questions asked and not published is 'how does the municipality allow the Eskom account to get into such a bad state and especially to the point where Eskom has threatened to cut our-our power supply'. My second question was that 'Should Eskom cut our electrical supply when they must law abiding and rate paying citizens have their power cut? My third question is 'what happens to the money paid by all law abiding and rate paying citizens? Leolynn Smith, being a tax paying citizen for the past 26 years in Graaff Reinet I would expect detailed answers to be above. • The municipality has been approached for comment in this regard - a response will be issued for next week's Advertiser.

Would it be possible via this media newspaper to advise how many litter bugs have been fined?

• Louis du Preez, Graaff-Reinet: How inspiring and exciting that the Dr Beyers Naudé Municipality (DBNM) has eventually raised its concerns about the increasing cases of illegal dumping and littering in the various neighbourhoods. However, why has this concern only been raised by the DBNM once my son, Stuart Du Preez, and his friend Carel Enslin and myself brought this to your attention via the local press? Do you want to tell me that no one in authority has ever noticed the appalling disgust of all this illegal dumping and litter all over our town? Seeing that this mess has raised its concerns

with the powers that be, can you please name one area that has been cleaned (excluding those being cleaned by the DBNM and paid by the three of us)? You also go on to mention that in terms of Section 8 of the Traffic bylaw that it is basically illegal to dump or litter in town and that a fine of up to R150 can be imposed on committing offenders. The municipality goes on to say that we actually do have law enforcement officers who are responsible for looking out for these uncivilized litter bugs (I say uncivilized because civilized citizens do not litter). Would it be possible via this media newspa-

per to advise how many litter bugs have been fined? Recently, or if ever, this should not be too difficult to establish as one can look in the law enforcement fines book. As a tax payer, I would like to know the figure. In conclusion, a good place to get your law enforcement officers to start would be at Angel Park, though a word advise: get them to take a spare fines book as it will not take long to fill the first one and it would save a trip back to the office to fetch the second one. • The municipality has been approached for comment in this regard - a response will be issued for next week's Advertiser.

A serious accident waiting to happen

• Louis du Preez, Graaff-Reinet: Could someone in the correct department please, please explain why there are no traffic law enforcement officers on duty between our local dam and the centre of town, especially on a Saturday and Sunday afternoon? Locals, as well as, others consume alcohol as if they think the manufacturers might lose the recipe to make more alcohol and of course all the empties are left or broken where they park (for our Ben to pick up. It's called job creation),

Then the race is on into town. I thought a stop sign means stop, apparently not to these hoodlums. They race through the stop street of Green Acres and that allows them enough time to build up speed to race through stop street at Angel Park. Please, whoever is in charge, if you read this complaint or hear about it then please get your officers to set up speed traps and especially conduct breathalyzer tests. What is really

disturbing is that nobody in authority has even bothered to do this before. It is only a matter of time before some innocent victim or victims are wiped out by drunken hoodlums. The absolute disregard for all laws is indeed disturbing. But I guess it starts with number one, so what can we expect. • The municipality has been approached for comment in this regard - a response will be issued for next week's Advertiser.

Red 'n lewe - skenk bloed!

GRAAFF-REINET — Die Suid-Afrikaanse Nasionale Bloedoorloppingsdiens hou volgende Saterdag, 19 Desember, 'n bloedskenkings-kliniek by die NG Nuwekerk se saal in Caledonstraat, Graaff-Reinet. Skenkers en belangstellende skenkers word gevra om dié goeie saak te ondersteun. Mensse sal kan bloed skenk van 2nm tot 6nm.



ITT INTERTOWN TRANSPORT
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Graaff-Reinet	082 652 9306	Colesberg	051 753 0670
Aberdeen	049 846 0133	Jansenville	049 838 0007
Middelburg	082 563 6868	Port Elizabeth	041 453 2616

Online quote: www.intertown.co.za
A professional courier service on your doorstep. Covering the entire Eastern Cape, Garden Route and Cape Town

Graaff-Reinet Aberdeen Murraysburg Middelburg Coleberg Willowmore Jansenville

Advertiser
Karoo Nuus wat saak maak Karoo Nuus with a view

Please take note of the following publication dates and deadlines for December

DEADLINES FOR BOOKINGS AND MATERIAL

15 December publication: Friday, 9 Dec. @ 10:00
22 December publication: Tuesday, 20 Dec. @ 10:00

Southern Cape Propertyguide & autodealer

15 December publication: Thursday, 8 Dec. @ 10:00
22/23 December publication: Monday, 12 Dec. @ 10:00

CONTACT: 044 892 2236

NOTIFICATION OF PUBLIC PARTICIPATION PROCESS

ESTABLISHMENT OF A 75 MW PHOTOVOLTAIC SOLAR POWER PLANT WITH ASSOCIATED INFRASTRUCTURE BY AMDA DEVELOPMENTS (PTY) LTD

Proposed Project: Construction of a 75 MW photovoltaic solar power plant with associated infrastructure near Collet substation, Middelburg, Eastern Cape.

Location: Farms Harmsfontein 336, Buffelspoort 336 and Remainder of Braakie Kullen 180, adjacent to the Collet Railway Siding near Rosmead, in the vicinity of Middelburg in the Eastern Cape Province (S 31°32'5.5309", E 25°10'2.0424").

Notice is hereby given of a public participation process in terms of Regulation 41(2) of the 2014 EIA Regulations, published in Government Gazette No. 982 under Section 24(5) of the National Environmental Management Act, 1998 (No. 107 of 1998) (NEMA) to apply for environmental authorisation to undertake the following activities listed in terms of the NEMA in 2014, following the Scoping and Environmental Impact Reporting process:

Activity 1 (GN R. 984 of 2014): The development of facilities or infrastructure for the generation of electricity from a renewable resource, where the electricity output is 20 megawatts or more, excluding where such development of facilities or infrastructure is for photovoltaic installations and occurs within an urban area.

Activity 15 (GN R984 of 2014): The clearance of an area of 20 hectares or more of indigenous vegetation, excluding where such clearance of indigenous vegetation is required for- (i) the undertaking of a linear activity; or (ii) maintenance purposes undertaken in accordance with a maintenance management plan.

Activity 12 (GN R. 983 of 2014): The development of (i) channels exceeding 100 square metres in size; (ii) buildings exceeding 100 square metres in size; or (iii) infrastructure or structures with a physical footprint of 100 square metres or more, where such development occurs (a) within a watercourse; or (b) if no development setback exists, within 32 metres of watercourse, measured from the edge of a watercourse, excluding (a) where such development occurs within an urban area; or (ee) where such development occurs within existing roads or road reserves.

Activity 19 (GN R. 983 of 2014): The infilling or depositing of any material of more than 5 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 5 cubic metres from (i) a watercourse; but excluding where such infilling, depositing, dredging, excavation, removal or moving (a) will occur behind a development setback; (b) is for maintenance purposes undertaken in accordance with a maintenance management plan.

Activity 11 (GN R. 983 of 2014): The development of facilities or infrastructure for the transmission and distribution of electricity (i) outside urban areas or industrial complexes, with a capacity of more than 33, but less than 275 kilovolts.

Please note: This development has already been authorised by the Department of Environmental Affairs in 2013 - Environmental Authorisation Reg. No. 14/12/16/3/2/285 & NEAS Ref. No. DE/NEAS/0001343/2012 and the Eastern Cape Department of Economic Development, Environmental Affairs and Tourism - Environmental Authorisation Reg. No. EC 131/CHLN3/14/14-12 & NEAS Ref. No. EC/PEIA/0001165/2014. This application is submitted because the original environmental authorisation lapsed in July 2016.

Opportunity to register as an Interested and Affected Party: In order to register as an interested and/or affected party (I&AP), please submit your name, contact information (preferred method of notification, e.g. e-mail address or fax number) and an indication of any direct business, financial, personal or other interest in the matter to the contact person below within 30 days from the date of this notice.

Availability of background information document and scoping report for public review: A background information document will be sent to all registered I&APs upon receipt of registration. The scoping report for this proposed development will be made available for a review period of 30 days from 06 January 2017. A copy of the report will be available in the Middelburg Public Library, while electronic copies will be made available on request. Please contact the contact person in this regard.

For more information contact: Mr. Tshespo Seobi, Centre for Environmental Management, Internal Box 150, Private Bag 76001, Potchefstroom, 2520, Tel: (018) 299-4299, Fax: (086) 513-7996, E-mail: tshespo.seobi@rivm.ac.za

Date of advertisement: 8 December 2016 gm201670

13.4.3 Appendix D3: Proof of notice published in the Eastern Cape Gazette on 16 January 2017

To be completed

13.5 Appendix E: Photographic Proof of Site Notices

E1. Site notices displayed along the public road on the farm Harmsfontein, Middelburg



E2. Site notices displayed on the fence line of the farm Brakke Kuilen, Middelburg, at the preferred site of the proposed development



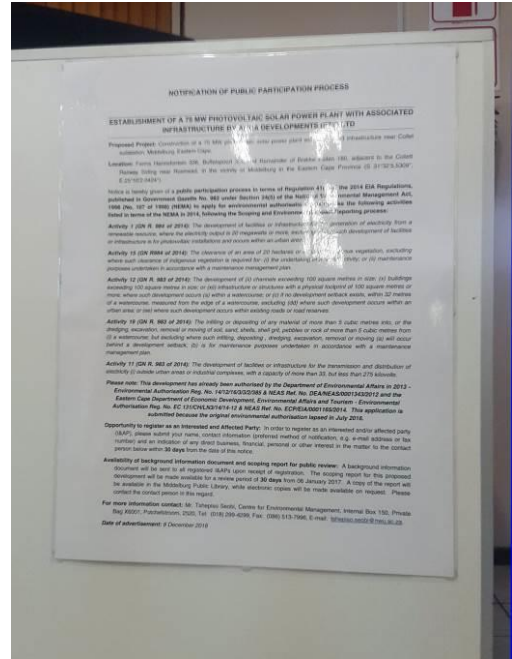
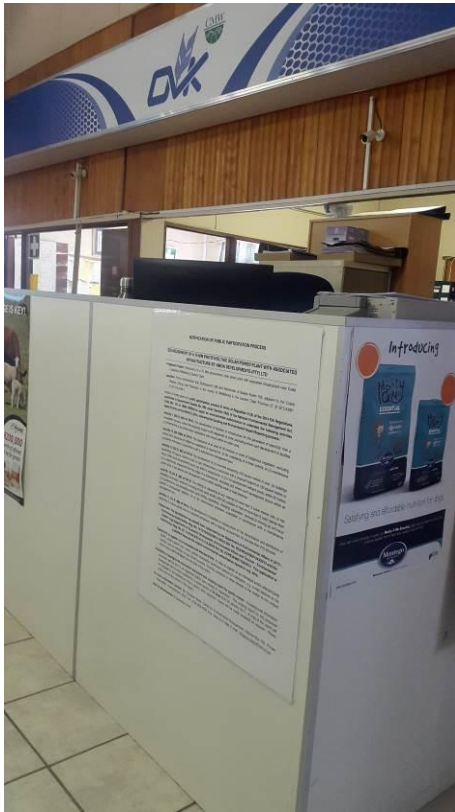
E3. Site notices displayed at the entrance to the farm Buffelsvlei, Middelburg



E4. Site notices displayed at the BKB farmers' co-operative, Middelburg EC



E5. Site notices displayed inside OVK farmers' co-operative, Middelburg EC



13.6 Appendix F: Proof of public meeting

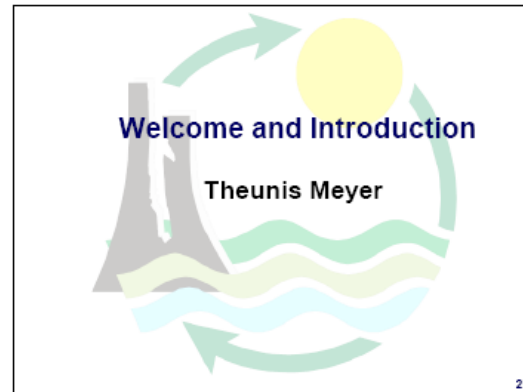
13.6.1 Appendix F1: Presentation delivered at the Public Participation Meeting Held at Desert Inn Guest House in Middelburg on Thursday, 02 August 2012



Collet PV plant EIA – Public Meeting
02 August 2012

Centre for Environmental Management
North-West University
Potchefstroom Campus
South Africa

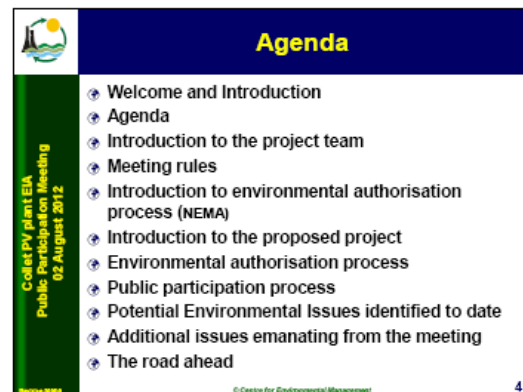
Tel: +27 (0) 18 299 1467
Fax: +27 (0) 18 299 4266
E-Mail: theunis.meyer@nwu.ac.za
Web Address: http://www.nwu.ac.za/ceem



Welcome and Introduction
Theunis Meyer

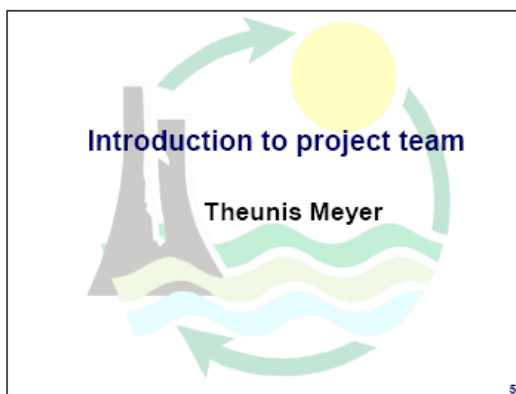


Agenda
Theunis Meyer



Agenda

- ☛ Welcome and Introduction
- ☛ Agenda
- ☛ Introduction to the project team
- ☛ Meeting rules
- ☛ Introduction to environmental authorisation process (NEMA)
- ☛ Introduction to the proposed project
- ☛ Environmental authorisation process
- ☛ Public participation process
- ☛ Potential Environmental Issues identified to date
- ☛ Additional issues emanating from the meeting
- ☛ The road ahead

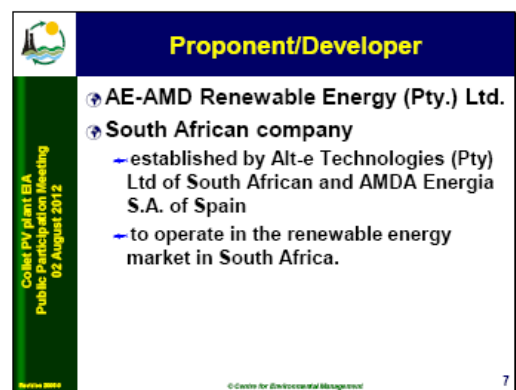


Introduction to project team
Theunis Meyer



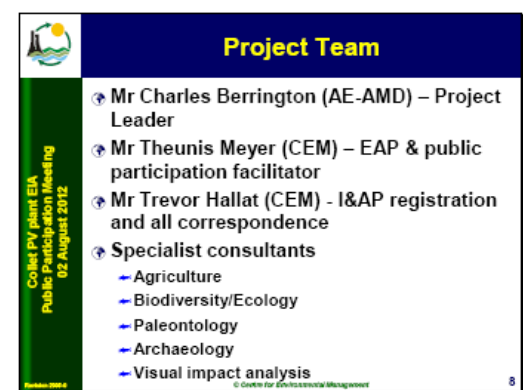
Introduction to the facilitator

- ☛ Hold Masters degrees
 - Pasture Science – Free State University
 - Environmental Management – North-West University
- ☛ Professionally registered
 - Natural scientist
 - ★ Ecology
 - ★ Environmental Management
 - Environmental auditor
- ☛ Experienced EAP & public participation facilitator
- ☛ Environmental law expert



Proponent/Developer

- ☛ AE-AMD Renewable Energy (Pty.) Ltd.
- ☛ South African company
 - established by Alt-e Technologies (Pty) Ltd of South African and AMDA Energia S.A. of Spain
 - to operate in the renewable energy market in South Africa.



Project Team

- ☛ Mr Charles Berrington (AE-AMD) – Project Leader
- ☛ Mr Theunis Meyer (CEM) – EAP & public participation facilitator
- ☛ Mr Trevor Hallat (CEM) - I&AP registration and all correspondence
- ☛ Specialist consultants
 - Agriculture
 - Biodiversity/Ecology
 - Paleontology
 - Archaeology
 - Visual impact analysis

Meeting Rules
Theunis Meyer

Manner in which the meeting will be conducted

- ⊕ Presentation first, introducing the project and the issues to the audience.
- ⊕ Afterwards, the floor will be opened for discussion.
 - Complete form indicating your name, contact details and issue(s) to be raised
 - Address meeting through the facilitator.
 - When speaking, identify yourself (name and/or organisation) and interest in the matter.
 - Ask your question or state your comment.
 - Every person gets one opportunity to speak in order to give everybody an opportunity.

Introduction to environmental authorisation process
Theunis Meyer

Why are we here?

- ⊕ AE-AMD proposes to construct a Photovoltaic Power Plant
 - to add new capacity for generation of renewable energy to the national electricity mix,
 - in line with government policy.
- ⊕ This project requires an environmental authorisation in terms of the National Environmental Management Act 107 of 1998 (NEMA) before the project can proceed.

Why are we here? (2)

- ⊕ When an applicant proposes to undertake identified activities, applications for authorisation must be submitted to the competent authorities.
- ⊕ All such applications must be supported by reports that are compiled upon completion of the prescribed assessment procedures.
- ⊕ After the competent authorities have made decisions on the applications, appeals may be lodged against the decisions, or parts of the decisions.

Why are we here? (3)

- ⊕ The aims of environmental assessments are to:
 - establish the environmental sensitivity of a site;
 - determine environmental impacts related to the project;
 - identify alternatives to the current proposals;
 - inform I&APs (e.g. neighbours & community groups) about the project and provide them the opportunity to identify environmental issues and alternatives;
 - assess the proposals and the issues raised;
 - identify opportunities to prevent and mitigate potential environmental impacts.

Why are we here? (4)

- ⊕ Section 24 of the National Environmental Management Act (No. 107 of 1998) (NEMA) requires that
 - the potential impact of listed activities on the environment
 - must be considered, investigated, assessed and reported on
 - to the competent authority charged with granting the relevant environmental authorisation.

Why are we here? (5)

- ⊕ Section 24 of NEMA stipulates that the Minister (or an MEC) may
 - identify activities which may not commence without environmental authorisation from the competent authority;
 - * activities that due to their nature and/or extent
 - may have a substantial detrimental effect on the environment
 - associated with pollution / waste / environmental degradation
 - are likely to have significant environmental impacts
 - make regulations laying down the procedure to be followed in applying for, the issuing of and monitoring compliance with environmental authorisations;

Why are we here? (6)

☛ The proposed project will include the following listed activities:

- ☛ Activity 1 (GN R. 545 of 2010):
 - ★ The construction of facilities or infrastructure for the generation of electricity where the electricity output is 20 MW or more.
- ☛ Activity 15 (GN R. 545 of 2010):
 - ★ Physical alteration of undeveloped, vacant or derelict land for residential, retail, commercial, industrial or institutional use where the total area to be transformed is 20 ha or more.
- ☛ Activity 10 (GN R. 544 of 2010):
 - ★ The construction of facilities or infrastructure for the transmission and distribution of electricity: (i) Outside urban areas or industrial complexes with a capacity of more than 33 but less than 275 kV.

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Why are we here? (7)

☛ EIA regulations promulgated in terms of NEMA prescribe procedures that must be followed in the EIA process.

☛ Aim to provide the competent authority with adequate information to make decisions that will ensure that

- ☛ activities which may have an unacceptable negative impact on the environment are not authorised, and
- ☛ activities that are authorised are undertaken in such a manner that the environmental impacts are managed to acceptable levels.

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Why are we here? (8)

☛ EIA Role players

- ☛ Applicant
 - ★ Person (including juristic person) who has submitted an application for environmental authorisation
- ☛ Environmental assessment practitioner (EAP)
 - ★ the individual responsible for the planning, management and coordination of environmental impact assessments
- ☛ Competent authority
 - ★ the organ of state charged by NEMA with evaluating the environmental impact of an activity and,
 - ☛ where appropriate, granting or refusing an environmental authorisation in respect of that activity.
- ☛ Interested and affected party includes –
 - ★ any person, group of persons or organisation interested in or affected by an operation or activity; and
 - ★ any organ of state that may have jurisdiction over any aspect of the operation or activity.

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Why are we here? (9)

☛ NEMA requires a *public participation process*

- ☛ in which potential interested and affected parties are given an opportunity
- ☛ to comment on or raise issues relevant to the application.

☛ Requires notification and communication

- ☛ Newspaper advertisements & site notices
- ☛ Personal communications
- ☛ Opportunity
 - ★ to review and comment on documentation;
 - ★ to communicate with the competent authority;
 - ★ to appeal against the issuing of the environmental authorisation.

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Aim of Stakeholder Engagement Process

INFORM STAKEHOLDERS OF THE PROPOSED DEVELOPMENT	
IDENTIFY ISSUES, COMMENTS AND CONCERNS RAISED BY STAKEHOLDERS	
PROMOTE TRANSPARENCY AND AN UNDERSTANDING OF THE PROJECT AND ITS CONSEQUENCES	
STRUCTURE FOR LIAISON AND COMMUNICATION WITH STAKEHOLDERS	
ASSIST IN IDENTIFYING POTENTIAL ENVIRONMENTAL IMPACTS	

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Background

- ☛ Electricity Generation Capacity Issues
- ☛ IPR 2010
- ☛ Independent Power Producers Procurement Program
- ☛ Bid Process
- ☛ Renewable Energy Allocations

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Parties Involved and Contracts

- ☛ Department of Energy
- ☛ National Treasury
- ☛ NERSA
- ☛ Eskom

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Ownership Structure

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AE-AMD Renewable Energy (Pty) Ltd
AEM Energy (70%)
Aite Technologies (30%)

AE AMD
renewable energy

AE-AMD Renewable Energy

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- AE-AMD currently has promoted two modular PV power plants that were successfully for the first round of the IPP procurement Program developed by the Department of Energy, on 4th of November 2011.
- All sites are located in the province of Northern Cape, next to an identified and power load available ESKOM substation, on the distribution network (Voltage : 22 kV).
- The total power of each power plant is:
 - Greefspan - 11 MWp PV Power plant
 - Herbert - 22 MWp PV Power plant

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Solar PV Production Process (1)

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Photovoltaics involve the conversion of sunlight into direct current (DC) electricity through the use of thin layers of materials known as semi-conductors.

- The physical processes involved in the conversion of sunlight into electricity
 - include light absorption, electron transport and recombination mechanisms,
 - which are determined by the electro-optical properties of the material.

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Solar PV Production Process (2)

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Proposed Collett Project (1)

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- Photovoltaic Power Plant with an electricity generation capacity of 75 MW,
 - as well as associated infrastructure such as roads and a power line.
- 2 Phases.

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Proposed Collett Project (2)

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- The development will cover an area of approximately 225 hectares
 - on the farms Harmsfontein 335, Buffelspoort 336 and Remainder of Brakke Kuilen 180
 - near Middelburg in the Eastern Cape.
- The site is situated at 31°32'03.54"S and 25°08'59.03"E, just south of the Rosmead Siding.

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renewable energy

Proposed Collett Project (3)

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- The proposed facility would comprise:
 - Arrays of photovoltaic panels for the generation of electricity;
 - Dedicated inverters to convert the electricity from DC to AC;
 - Underground cabling between the photovoltaic panels and dedicated inverters;
 - Overhead 132 kV power line connecting into the Eskom Collett substation;
 - External access road along Rosmead-Cradock railway line;
 - Internal access roads;
 - Administrative/security buildings.

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Plant Key Components

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Photovoltaic modules
PE230/240-600+

SUNNY TRIPOWER
15000TL

IDEEMATEC

AE AMD
renewable energy

Proposed Collet Project (4)

- The PV facility is designed to operate continuously with low maintenance for 20 years.
 - The power will feed into the Eskom electricity grid via the existing Collett substation.
- The aim of the design and lay-out of the facility will be
 - to maximise electricity generation through exposure to solar radiation,
 - while minimising infrastructure, operational and maintenance costs, as well as environmental & social impacts.

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Development Issues

- Water Requirements**
 - Construction Stage – 9MI at about 60kl/day peak
 - Operational Stage – 1.25MI Per Annum/3400l per day



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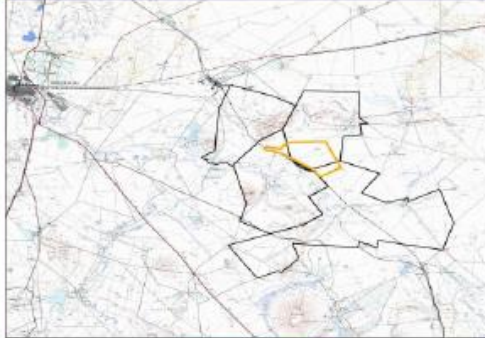
Development Issues Cont'd

- Job Creation**
 - Construction stage - 3000 Person-months
 - Operational Stage – 300 Person-months
- Economic Development**
 - Bid requirements
- Education Trust**

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Proposed Collet Project (5)



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Proposed Collet Project (6)



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Proposed Collet Project (7)



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Proposed Collet Project (7)



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Proposed Collet Project (8)



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Proposed Collet Project (9)

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NEMA EIA Process

Theunis Meyer

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EIA process (1)

When an applicant proposes to undertake a listed activity, an application must be made for environmental authorisation.

- All applications must be supported by a report
 - compiled as a result of an assessment procedure.
- After the competent authority has made a decision on the application,
 - an appeal may be made.

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Generic EA/EIA Process

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EIA process (2)

EIA Regulations provide for two types of assessment processes i.e.:

- Basic Assessment;
- Scoping & Environmental Impact Assessment.

The full EIA process for this project will involve the following steps:

- Engaging with competent authorities;
- Development of BID, newspaper advertisements & site notices;
- I&AP registration & circulation of BID to registered I&APs;
- Public meeting;
- Drafting of Scoping Report (SR);

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EIA process (3)

- Circulation of final SR to registered I&APs for review;
- Revision of SR, based on I&AP comments;
- Submission of final SR to authorities;
- Conducting of specialist studies;
- Drafting of Environmental Impact Report (EIR) & Environmental Management Programme (EMP);
- Circulation of final EIR & EMP to registered I&APs for review;
- Revision of draft EIR & EMP, based on I&AP comments;
- Submission of final EIR & EMP to competent authority for environmental authorisation;
- Informing registered I&APs of the decisions by competent authority (letter & newspaper ad).

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Scoping & EIA Process

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Project Alternatives (1)


NEMA Act 107 of 1998; GN R. 543 defines alternatives in relation to a proposed activity, as different means of meeting the general purpose and requirements of the activity, which may include alternatives to:

- the property on which or location where it is proposed to undertake the activity;
- the type of activity to be undertaken;
- the design or layout of the activity;
- the technology to be used in the activity;
- the operational aspects of the activity; and
- the option of not implementing the activity.

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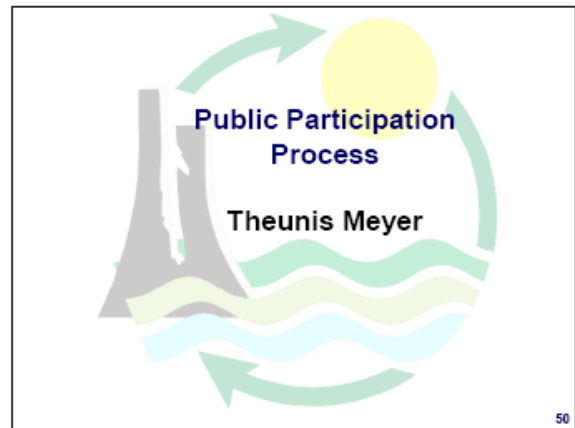
48



Project Alternatives (2)

- ⊕ **Alternative sites:** have been considered
 - however, due to proximity of the proposed site to the Eskom substation, no other feasible site alternatives could be identified
- ⊕ **Alternative designs:**
 - Four smaller (<10 MW) PV plants;
 - Tracking vs. fixed panel.
- ⊕ **The no-go or “do nothing” alternative:**
 - Maintain the *status quo* – no development
 - Remains extensive grazing land
 - Lost economic opportunities


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Public participation process (1)

- ⊕ **Identify stakeholders**
 - Competent authorities
 - ★ DEA & SAHRA
 - Commenting authorities
 - ★ EC DEDEA , Transnet,
 - Property owners within 100m from site boundaries (adjacent farms)
 - Inxuba Yethemba Local Municipality & Ward councillor
 - Interest groups (EWT)
 - General public


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Public participation process (2)

- ⊕ **Public participation process**
 - May 2012: Initial identification of I&APs
 - 29 June 2012: Published notice of the EIA process and the public meeting in the Middelburg Courant, Graaf Reinett Advertiser and Daily Dispatch newspapers;
 - 29 July 2012 : Distribution of compulsory invitation letters & BID to identified I&APs by registered mail;
 - I&APs were given a 60-day period to register (1 July – 31 August 2012);


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Public participation process (3)

- 29 July 2012: Published notice of the EIA process & the public meeting in the Middelburg Courant and Graaf Reinett Advertiser;
- 30 July 2012: Preparation and erection of three (3) on-site advertisements in English at three affected farms to inform the public about the proposed project, the public participation process & the opportunity to register as I&APs.
- May to November 2012: Draft and maintain I&AP register
- 02 August 2012: Public participation meeting


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Public participation process (4)

- Final Scoping & EIA report with EMP will be made available for comment by I&APs
 - ★ 10 August – 31 August 2012: 21 day commenting period: Final Scoping Report.
 - ★ 07 – 27 November 2012: 21 day commenting period: Final EIA Report & EMP.
- **Locations**
 - ★ Middelburg Library
 - ★ Electronically
- March 2013: Notify I&APs of outcome of application and right to appeal to decision.


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Environmental issues identified

- ⊕ **Agricultural impact**
 - Sterilise 250 ha of extensive grazing land
 - No high potential land involved
 - Potential soil erosion
- ⊕ **Biodiversity issues**
 - Endangered plant species ???
 - Endangered animal & bird species ???
- ⊕ **Archaeological issues**
 - ??
- ⊕ **Paleontological issues**
 - ??
- ⊕ **Visual impact**
 - ??

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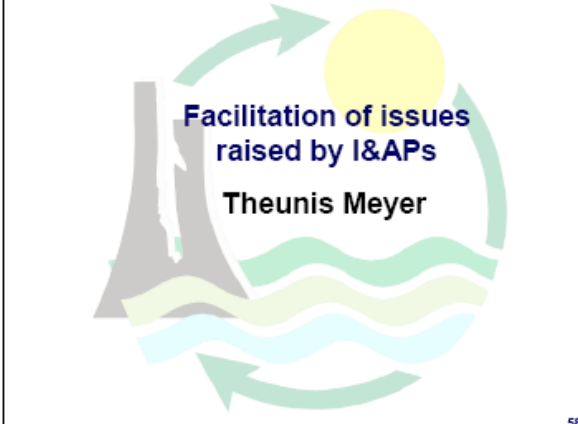
Potential Specialist studies

- Agricultural assessment
- Biodiversity assessment
 - Including birds
- Visual assessment
- Heritage assessment
 - Archaeology
 - Paleontology
- Social??

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Facilitation of issues
raised by I&APs

Theunis Meyer

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Rules for facilitation

- Please
 - Address meeting through the facilitator;
 - Complete form indicating your name, contact details and issue(s) to be raised;
 - When speaking,
 - * clearly identify yourself (name and/or organisation)
 - * state your interest in the matter
 - * Ask your question or make your comment;
 - Everybody gets one opportunity to speak, so as to give everybody an opportunity to participate;
 - Facilitator will rephrase questions & comments to ensure that these are clearly understood by everybody.


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Facilitation



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The Road Ahead

Theunis Meyer

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Plan of study for EIA (1)

- Description of the tasks that will be undertaken as part of the EIA process
 - Scoping Report
 - * Following the public meeting the Draft Scoping Report will be made available for review and comment by I&APs on 20 April 2012 (40-day commenting period);
 - * Draft Scoping Report will be reviewed and revised where required;
 - * Final Scoping Reports will be submitted to GDARD and the DMR for consideration by June 2012;
 - Specialist studies will be undertaken from April-June 2012;
 - * Potential specialist studies identified:
 - ➔ Heritage screening assessment
 - ➔ Botanical screening assessment
 - ➔ Butterfly screening assessment
 - ➔ Biodiversity assessment

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Plan of study for EIA (2)

- EIA Report & EMP
 - * Once the Scoping Report has been accepted, the EIA Report and EMP, EMP addendum and Water Use Licence Application will be drafted;
 - * Draft EIA Report, EMP addendum and Water Use Licence Application will be made available for review and comment by I&APs (40-day commenting period);
 - * All comments by I&APs and competent authorities and associated responses will be recorded in the I&AP issue and response register and dealt with accordingly;
 - * Draft EIA Report, EMP addendum and Water Use Licence Application will be reviewed and revised where required
 - * Final EIA Report, EMP addendum and Water Use Licence Application submitted to the relevant competent authorities for consideration;

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Plan of study for EIA (3)

- Stages at which the competent authority will be consulted:
 - Submission of draft Scoping and Environmental Impact Reports with EMPs to GDARD and the DMR for comment;
 - Submission of final Scoping and Environmental Impact Reports with EMPs to GDARD and the DMR for consideration;
- Particulars of the public participation process that will be conducted:
 - Review and comment on the Draft Scoping Report ;
 - Review and comment on the Draft Environmental Impact Report with EMP;
 - Notification of all registered I&APs of the outcome of the EIA and WUL applications;
 - Publication of Notices in the newspapers of the outcome of the EIA and WUL applications;

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Plan of study for EIA (4)

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- ⊕ Description of the proposed method of assessing the environmental issues and alternatives
 - Impact prediction involves the consideration of physical, biological, socio-economic and cultural information to estimate the likely characteristics and parameters of the impact
 - To provide a basis for determining the likely significance of each impact with sufficient accuracy to develop appropriate mitigation measures
 - Methods used to predict the characteristics of impacts will be clearly described to the extent that the competent authority that evaluates the assessment will be able to understand exactly how the predictions were made.
- + The methods include professional judgement, quantitative mathematical models, experiments and physical models, physical or visual simulations or maps (including GIS tools), case studies and past experience.

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Plan of study for EIA (5)

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- Potential environmental impacts will be identified using a Leopold matrix containing
 - + all the project activities on the y-axis and
 - + all the potential environmental impacts on the x-axis
- The assessment of impacts will be done according to a synthesis of the following assessment criteria:
 - + Description of the nature of the impact
 - Appraisal of the type of effect the activity would have on the affected environment;
 - Description includes what is being affected and how
 - + Extent will be rated as
 - Immediate;
 - Local;
 - Regional; or
 - National

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Plan of study for EIA (6)

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- + Duration will be rated to indicate whether the lifetime of the impact will be
 - Short term;
 - Medium term;
 - Long term; or
 - Permanent
- + Status and intensity of the impact (severity) will be established whether the impact would be destructive or benign and rated as
 - Low;
 - Moderate; or
 - High
- + Ratings will be based on a number of considerations, i.e.
 - the degree to which the potential impacts of the activity, product or service is highly uncertain or involves unique or unknown risks; and
 - the degree to which potential impacts of the activity, product or service is irreversible;

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Plan of study for EIA (7)

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- the activity, product or service
 - o violates the spirit or letter of any law, statute, regulation or authorisation;
 - o affects public health and safety (level of toxicity etc.);
 - o affects the availability or functioning of life support systems or other environmental goods, services and conditions which are considered to be of special or unique character, of limited supply or essentially irreplaceable;
 - o is related to other impacts which individually are insignificant, but could cumulatively result in significant impacts;
 - o may establish a precedent for future actions with significant environmental impacts or represents a decision in principle about an issue with significant implications;

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Plan of study for EIA (8)

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- + Probability: The likelihood of the impact actually occurring will be rated as
 - improbable;
 - probable;
 - highly probable; or
 - definitely
- + Significance: will be determined through a synthesis of the aspects produced, in terms of their nature, duration, intensity, extent and probability and described as
 - Low;
 - Medium; or
 - High
- ⊕ Results of the impact evaluations for the base case and modified design will be displayed in matrices that will be colour coded to facilitate the visual inspection thereof.

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Road Ahead (1)

Collet PV plant EIA
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02 August 2012

- ⊕ **Apr to May 2012:** Circulate Scoping Report for comments from I&APs
- ⊕ **Apr to Jul 2012:** Specialist studies and Impact Assessment
- ⊕ **Jul 2012:** Review and revise scoping where required
- ⊕ **Aug 2012:** Submit final Scoping Report and Plan of Study for EIA to CAs
- ⊕ **Feb to Sept 2012:** Compile all information in Public Participation Report
- ⊕ **Sep 2012:** Circulate EIR, EMP and WUL application to I&APs for comments

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Road Ahead (2)

Collet PV plant EIA
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- ⊕ **Jul to Sept 2012:** Review period by I&APs
- ⊕ **Sept 2012:** Submission of final EIR and EMP to CA
- ⊕ **Dec 2012:** Inform all I&APs of outcome of EIA Process and right to appeal
- ⊕ **Dec 2012 to end Jan 2013:** Appeals by I&APs

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Closure

Collet PV plant EIA
Public Participation Meeting
02 August 2012



We thank you for your attendance!

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13.6.2 Appendix F2: Minutes of the Public Participation Meeting Held at Desert Inn Guest House in Middelburg on Thursday, 02 August 2012

Collet PV EIA – Minutes of public meeting held on 02 August 2012 at Desert Inn Lodge, Church Street, Middelburg (EC)

Attendance:

1. Welcome and Introduction

Mr Theunis Meyer, the chairman welcomed everybody attending the meeting.

2. Introduction to the project team

Mr. Meyer introduced the project team consisting of the following people:

- Mr. Charles Berrington, project leader from the applicant, AE-AMD (Pty) Ltd;
- Mr Meyer from the Centre for Environmental Management (CEM), the Environmental Assessment Practitioner for the project;
- Mr Trevor Hallat from the CEM;
- Specialists that will be involved in the identified specialist studies

3. Introduction to environmental authorisation process (NEMA)

Mr Meyer introduced the meeting to the legal requirements for environmental authorisations for listed activities as regulated by the National Environmental Management Act (NEMA). He explained that the proposed construction of the PV Power plant will include 3 activities listed in terms of the NEMA.

4. Introduction to the proposed project

Mr. Berrington firstly introduced the meeting to the proponent, AE-AMD (Pty) Ltd, indicating that they were successful in bidding for 2 projects in round 1 of the bidding process. He then explained the PV development and bidding processed, before introducing the meeting to the details of the proposed construction of a 75 MW PV solar facility in the vicinity of the Collet substation.

The aim of the design and lay-out of the facility will be to maximise electricity generation through exposure to solar radiation, while minimising infrastructure, operational and maintenance costs, as well as environmental & social impacts.

5. Environmental authorisation process

Mr Meyer explained the environmental authorisation process that will be followed in terms of the National Environmental Management Act (See attached slide deck).

6. Public participation process

The meeting was informed that the following Interested and Affected Parties had been identified:

- **Competent authorities**
DEA & SAHRA
- **Commenting authorities**
EC DEDEAT, Transnet, DWA, DAFF, Eskom
- **Property owners within 100m from site boundaries (adjacent farms)**
- **Local Municipality**
Inxuba Yethemba Local Municipality & Ward councillor
- **Interest groups (EWT)**
Endangered Wildlife Trust, Blue Crane Working Group
- **General public**

- **Public participation process**
 - May 2012: Initial identification of I&APs
 - 29 June 2012: Published notice of the EIA process and the public meeting in the Middelburg Courant, Graaf Reinett Advertiser and Daily Dispatch newspapers;
 - 29 July 2012 : Distribution of compulsory invitation letters & BID to identified I&APs by registered mail;
 - I&APs were given a 60-day period to register (1 July – 31 August 2012);
 - 29 July 2012: Published notice of the EIA process & the public meeting in the Middelburg Courant and Graaf Reinett Advertiser;
 - 30 July 2012: Preparation and erection of three (3) on-site advertisements in English at three affected farms to inform the public about the proposed project, the public participation process & the opportunity to register as I&APs.
 - May to November 2012: Draft and maintain I&AP register
 - 02 August 2012: Public participation meeting
 - Final Scoping & EIA report with EMP will be made available for comment by I&APs
 - 10 August – 31 August 2012: 21 day commenting period: Final Scoping Report.

- 07 – 27 November 2012: 21 day commenting period: Final EIA Report & EMP.
- Locations
 - Middelburg Library
 - Electronically
- March 2013: Notify I&APs of outcome of application and right to appeal to decision.

7. Potential environmental issues identified to date

The meeting was informed that the following environmental issues had been identified by the consultant team:

- Agricultural potential of the land that will be used for the development
- Biodiversity issues
- Archaeological heritage
- Paleontological heritage
- Visual impacts
- Availability of water for construction and operation
- Potential soil erosion
- Traffic impacts during the construction phase
- Sanitation facilities on site

8. Additional issues emanating from the meeting

- Social impacts associated with migrant construction workers
- Possible injury to blue cranes and other large birds by the power lines

9. The road ahead

After again explaining the road ahead for the EIA process, Mr Meyer closed the meeting by thanking everybody for their participation and urging them to forward any contributions to him.

13.6.3 Appendix F3: Attendance Register of the Public Participation Meeting Held at Desert Inn Guest House in Middelburg on Thursday, 02 August 2012



**ENVIRONMENTAL IMPACT ASSESSMENT FOR THE DEVELOPMENT OF A PHOTOVOLTAIC SOLAR PLANT
ATTENDANCE REGISTER: PUBLIC PARTICIPATION MEETING FOR THE DEVELOPMENT OF A PHOTOVOLTAIC
SOLAR POWER PLANT AT COLLETT SUBSTATION NEAR MIDDLEBURG, EASTERN CAPE**

LOCALITY: Desert Inn, Middleburg Eastern Cape





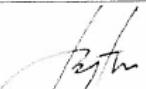
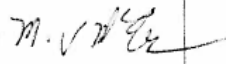
DATE : Thursday, 2 August 2012

TIME: 17:00

Name:	Interest in the Matter:	Telephone Number:	Fax Number:	E-mail Address:	Signature:
BRADLEY GIBBONS	CRANES IN THE AREA	049 842 1116 082 566 5803	0880649842 1116	bradleyg@ewt.org.za	
J. C. Louw	Ground Mining	049 84 91268	—	—	

Attendance Register: Collett EIA Public Participation Meeting

Page 1 of 5

Name:	Interest in the Matter:	Telephone Number:	Fax Number:	E-mail Address:	Signature:
M. Pretise	Grand eienaar	069-8423830	069-8423836	kpretise@cmw.co.za	
APRINSLOO	CHRISHANI DISTRICT MUNICIPALITY ENVIRONMENTAL HEALTH PRACTITIONER	049-8421104	049-8423582	aprinsloo@ chrishani.gov za	
Timodius Plessis	Grand eienaar	0875501519	—	timus@adreactive. com	
T.C. Victor	Grand Eienaar	049 84 22907	—	—	
C. Berrington	Developer	0824404057	086 577 8361	charlie@ac-umd.co.za	
M. McEnam	Land owner	049 842 1326 078 631 8816	—	greyville@melka.co.za	

13.6.4 Appendix F4: Copies of responses from EAP to representations, comments and views raised by interested and affected parties in 2012



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Tel: +27 (0) 18 299-1467

Fax: +27 (0) 18 299-4266

Email: theunis.meyer@nwu.ac.za

Web: www.nwu.ac.za/cem

27 September 2012

Mnr T du Plessis
Posbus 184,
MIDDELBURG,
5900

Meneer du Plessis

Kommentaar op Voorgestelde Collett Fotovoltaïesie Kragstasie OIB

U terugvoer op die I&AP registrasievorm verwys. Baie dankie vir die belangstelling in ide voorgestelde ontwikkeling.

Soos reeds tydens die publieke vergadering genome, is die opgradering van die toegangspad langs die Noupoot-Cradock spoorlyn die applikant se voorkeursoegangsroete. Die enigste geval waar dit nie gebruik sal word nie en 'n nuwe toegangspad gebou sal word is indien Spoornet 'n nie toestemming wil verleen vir die gebruik van die pad nie.

U is welkom om my te kontak in geval van enige ander sake wat u graag wil opper.

Die uwe

Theunis Meyer

Senior Omgewingsbestuurder

NOTE

These comments and responses will be recorded in reports submitted to the competent authority in terms of these Regulations.

According to the EIA regulations, the person conducting the public participation process must ensure that -

- (a) information containing all relevant facts in respect of the application is made available to potential interested and affected parties; and
- (b) participation by potential interested and affected parties is facilitated in such a manner that all potential interested and affected parties are provided with a reasonable opportunity to comment on the application.



NORTH-WEST UNIVERSITY
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27 September 2012

Chris Hani District Municipality
Private Bag X7121
QUEENSTOWN
5320

Messrs Nel and Prinsloo

Comment on Proposed Collett Photovoltaic Power Station EIA
Kommentaar op Voorgestelde Collett Fotovoltaïese Kragstasie OIB

Your feedback received during I&AP registration refers. Thank you for your interest in the proposed development. Your comments have been noted and recorded.

As requested, all legislation regarding the provision of water services and waste management will be complied with to ensure that no environmental pollution occurs.

The request to use environmentally friendly PV panels and a design that minimises the potential harm to biodiversity will be passed on to the applicant in order to apply this as an additional criterion during the final design process.

If in any way you are of the opinion that there are any other issues that needs to be considered, you are welcome to contact me in order to resolve any outstanding issues.

Yours sincerely

Theunis Meyer

Senior Environmental Manager

NOTE

These comments and responses will be recorded in reports submitted to the competent authority in terms of these Regulations.

According to the EIA regulations, the person conducting the public participation process must ensure that -

- (a) information containing all relevant facts in respect of the application is made available to potential interested and affected parties; and
- (b) participation by potential interested and affected parties is facilitated in such a manner that all potential interested and affected parties are provided with a reasonable opportunity to comment on the application.