

JULY 2018

BASIC ASSESSMENT PROCESS

MOEDING SOLAR PV FACILITY,
NORTH WEST PROVINCE

BACKGROUND INFORMATION DOCUMENT

savannah
environmental



Moeding Solar (Pty) Ltd ("Moeding Solar") is proposing the development of a photovoltaic (PV) solar energy generation facility, and associated infrastructure on a site situated approximately 8km south of Vryburg. The facility is known as the Moeding Solar PV Facility and will be located within the Naledi Local Municipality and within the greater Dr Ruth Segomotsi Mompati District Municipality in the North West Province.

The project site is located within Zone 6 of the Renewable Energy Development Zones (REDZ), known as the Vryburg REDZ. The procedure to be followed in applying for environmental authorisation for a large-scale project in a REDZ was formally gazetted on 16 February 2018 (in GN113 and GN114). As the project is located within one of the eight REDZ areas, the Moeding Solar PV Facility is now subject to a Basic Assessment and not a full EIA process, as well as a shortened timeframe of 57 days for the processing of an Application for Environmental Authorisation.

AIM OF THIS BACKGROUND INFORMATION DOCUMENT

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

- » an overview of the Moeding Solar PV Facility.
- » an overview of the Basic Assessment (BA) process and the studies being undertaken to assess the project.
- » details of how you can become involved in the BA process, receive information, or raise issues, which may concern and/or interest you.

OVERVIEW OF THE PROPOSED PROJECT

In response to the growing electricity demand within South Africa, the need to promote renewable energy and sustainability within the North West Province, as well as the country's targets for renewable energy, Moeding Solar is proposing the development of a commercial photovoltaic (PV) solar energy generation facility and associated infrastructure. The solar energy facility is proposed to be developed on Portion 1 of the farm Champions Kloof 731, Portion 4 and the Remaining Extent of Portion 3 of the farm Waterloo 730 situated approximately 8km south of Vryburg in the North West Province.

The facility is proposed to include multiple arrays (static or tracking) of photovoltaic (PV) solar panels with a contracted capacity of up to 100MW. The development footprint for the facility is anticipated to be approximately 300ha in extent.

Infrastructure associated with the solar energy facility will include:

- » Arrays of PV panels (either a static or tracking PV system) with a contracted capacity of up to 100MW.

- » Mounting structures to support the PV panels.
- » On-site inverters to convert the power from a direct current to an alternating current and an on-site substation to facilitate the connection between the solar energy facility and the Eskom electricity grid.
- » A new 132kV power line between the on-site substation and the Eskom grid connection point.
- » Battery storage with up to 6 hours of storage capacity.
- » Cabling between the project components, to be laid underground where practical.
- » Offices and workshop areas for maintenance and storage.
- » Temporary laydown areas.
- » Internal access roads and fencing around the development area.

The 132kV power line is proposed to be developed on the Remaining Extent of the farm Rosendal 673, Portion 4 and the Remaining Extent of Portion 3 of the farm Waterloo 730. Two power line alternatives are being considered:

- » Direct connection to the existing Mookodi Substation located on the northern portion of the project site.
- » A turn-in turn-out connection into the proposed Mookodi - Magopela 132kV power line (along the eastern boundary of the project site).

It is the developer's intention to bid the Moeding Solar PV Facility under the Department of Energy's (DoE) Renewable Energy Independent Power Producer Procurement (REIPPP) Programme. The power generated from the project will be sold to Eskom and will feed into the national electricity grid. The development of the project will also assist with the achievement of the electricity goals as set out in the Integrated Resources Plan.

Site-specific studies and assessments will be undertaken through the BA process in order to delineate areas of potential sensitivity within the broader areas and the identified study area. Once constraining factors have been determined, the layout of the solar energy facility can be planned to minimise social and environmental impacts.

USE OF SOLAR PV TECHNOLOGY AS THE RENEWABLE ENERGY TECHNOLOGY FOR THE MOEDING SOLAR PV FACILITY

Solar energy facilities, such as those using PV panels use energy from the sun to generate electricity through a process known as the **Photovoltaic Effect**. This effect refers to photons of light colliding with electrons, and therefore placing the electrons into a higher state of energy to create electricity. The solar energy facility will comprise of the following components (refer to Figure 1):



The Photovoltaic Cell

Individual PV cells are linked and placed behind a protective glass sheet to form a photovoltaic panel.

The Inverter

The photovoltaic effect produces electricity in direct current (DC). Therefore an inverter is required to change it to an alternating current (AC).

The Support Structure

The PV panels will be attached to a support structure up to 5m off the ground set at an angle so to receive the maximum amount of solar radiation (fixed technology), or set to track the sun (tracking technology) in order to increase the amount of energy produced.

The PV panels are designed to operate continuously for more than 20 years, unattended and with low maintenance.



Figure 1: Solar PV facility (Courtesy of Kabi Solar)

ENVIRONMENTAL IMPACT ASSESSMENT PROCESS (BASIC ASSESSMENT PROCESS)

As per the EIA Regulations published in terms of Section 24(5) of the National Environmental Management Act (NEMA, Act No 107 of 1998), Moeding Solar (Pty) Ltd require authorisation from the National Department of Environmental Affairs (DEA) (in consultation with North West Department of Rural, Environment and Agricultural Development (READ)) for the undertaking of the project. Due to the location of the Moeding Solar PV Facility project site within the REDZ, a BA process is required to be undertaken in accordance with GN114, as formally gazetted on 16 February 2018. In order to obtain authorisation, comprehensive, independent environmental studies must be undertaken in accordance with the EIA Regulations, 2014, as amended.

A BA is an effective planning and decision-making tool. It allows the environmental consequences resulting from a proposed activity to be identified and appropriately managed during construction and operation. It provides the opportunity for the developer to be fore-warned of potential environmental issues, and allows for the resolution of the issue(s) reported on in the BA report as well as dialogue with affected parties.

Moeding Solar has appointed **Savannah Environmental**, as the independent environmental consultant, to undertake the Basic Assessment for the project to identify and assess all potential environmental impacts associated with the project, and recommend appropriate mitigation measures in an Environmental Management Programme (EMPr). As part of these environmental studies, I&APs will be actively involved through the public involvement process being undertaken by **Savannah Environmental**.

WHAT ARE THE POTENTIAL ENVIRONMENTAL IMPACTS ASSOCIATED WITH THE MOEDING SOLAR PV FACILITY?

A number of potential environmental impacts associated with the Moeding Solar PV Facility have been identified, and will be assessed through specialist studies, including:

- » Impacts on biodiversity - which includes ecology, wetlands, fauna and flora
- » Impacts on avifauna
- » Impacts on soils and agricultural potential
- » Impacts on heritage including the archaeology and palaeontology
- » Impacts on the social and socio-economic environment
- » Impacts on the visual quality of the area



The independent specialist studies will be undertaken wherein the potentially significant impacts will be assessed and ground-truthed. Practical and achievable mitigation measures will be recommended in order to minimise the significance of the potential impacts identified. These recommendations will be included within an Environmental Management Programme (EMPr) compiled for the project.

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

PUBLIC INVOLVEMENT PROCESS

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

The public involvement process aims to ensure that:

- » Information containing all relevant facts in respect of the applications are made available to I&APs for review.
- » Participation by potential I&APs is facilitated in such a manner that I&APs are provided with a reasonable opportunity to comment on the application.
- » Adequate review period is provided for I&APs to comment on the findings of the BA report.

YOUR RESPONSIBILITIES AS AN I&AP

In terms of Section 24J of the National Environmental Management Act, Act 107 of 1998 and the Department of Environmental Affairs Public Participation Guideline 2017, as part of the BA process, an I&AP has the responsibility to:

- » Provide comment regarding the projects within the specified timeframes;
- » Submit written comment directly to the EAP;
- » Disclose any direct business, financial, personal or other interest which that I&AP may have in the approval or refusal of the applications.

HOW TO BECOME INVOLVED

1. By responding (by phone, fax or email) to our invitation for your involvement which has been advertised in local newspapers.
2. By returning the attached Reply Form to the relevant contact person.
3. By attending the meetings to be held during the course of the BA process.
4. By contacting the consultants with queries or comments.
5. By reviewing and commenting on the BA report within the stipulated 30-day review periods.

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

COMMENTS AND QUERIES

Direct all comments, queries or responses to:

Savannah Environmental

PO Box 148, Sunninghill, Johannesburg, 2157

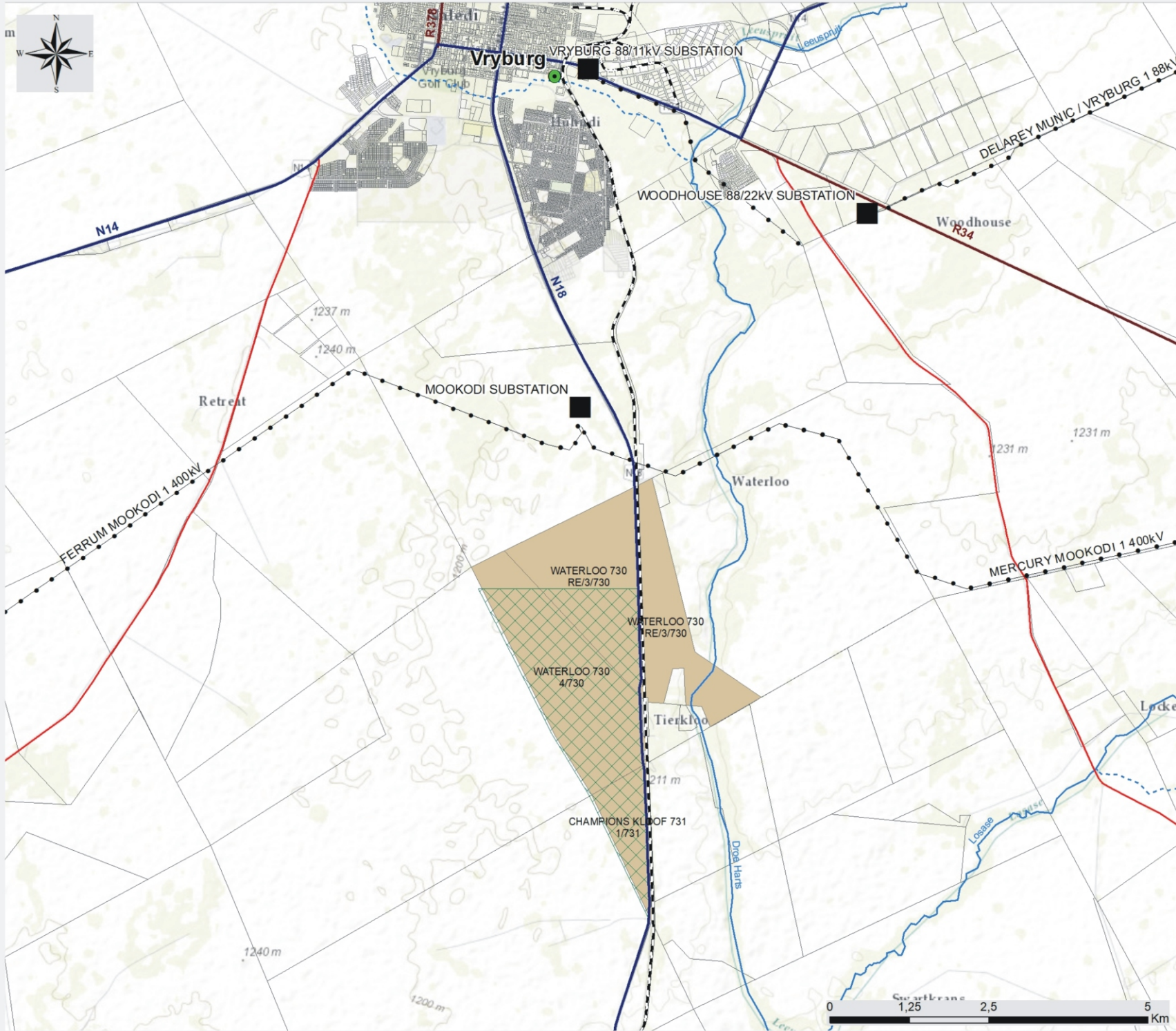
Phone: 011 656 3237

Fax: 086 684 0547

E-mail: publicprocess@savannahsa.com

To view project documentation, visit

www.savannahSA.com



Moeding Solar PV Facility and associated infrastructure, North West Province

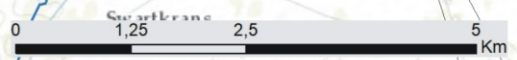
Locality Map

Legend

- Town
- Eskom Substation
- Railway
- National Route
- Regional Road
- Main Road
- Non-perennial River
- Perennial River
- Project Site
- Affected Property
- Farm Portion



Scale: 1:56 360
 Projection: LO25
 Map Ref: Moeding Locality Map 27.06.2018



JULIE 2018

BASIESE EVALUERINGSPROSES

MOEDING FV-SONKRAGAAANLEG,
NOORDWES-PROVINSIE

AGTERGRONDINLIGTINGS
DOKUMENT

savannah
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Moeding Solar (Edms.) Bpk. ("Moeding Solar") beoog die ontwikkeling van 'n fotovoltaïese (FV) sonkragopwekkingsaanleg en gepaardgaande infrastruktuur op 'n terrein sowat 8 km suid van Vryburg. Die aanleg staan bekend as die Moeding FV-sonkragaanleg en sal geleë wees in die Naledi Plaaslike Munisipaliteit en in die groter Dr. Ruth Segomotsi Mompati Distriksmunisipaliteit in die Noordwes-provinsie.

Die projekterrein is geleë in Sone 6 van die Hernubare Energie Ontwikkelingsones (REDZ), wat bekend staan as die Vryburg REDZ. Die prosedure wat gevolg gaan word om aansoek te doen vir omgewingsmagtiging vir 'n grootskaalprojek in 'n REDZ, is formeel in die staatskoerant afgekondig op 16 Februarie 2018 (in Staatskennisgewing 113 en 114). Omdat die projek in een van die agt REDZ-gebiede geleë is, is die Moeding FV-sonkragaanleg nou onderhewig aan 'n Basiese Evaluering en nie 'n volledige OIE-proses nie, asook 'n verkorte tydsraamwerk van 57 dae vir die verwerking van 'n Aansoek om Omgewingsmagtiging.

DOEL VAN HIERDIE AGTERGRONDINLIGTINGSDOKUMENT

Hierdie dokument poog om u, as 'n belangstellende en/of geaffekteerde party (B&GP), te voorsien van:

- » 'n oorsig van die Moeding FV-sonkragaanleg;
- » 'n oorsig van die Basiese Evalueringproses (BE-proses) en die studies wat onderneem word om die projek te evalueer;
- » besonderhede van hoe u betrokke kan raak by die BE-proses, inligting kan ontvang of vraagstukke kan opper wat u dalk kan raak en/of wat vir u van belang kan wees.

OORSIG VAN DIE BEOOGDE PROJEK

In antwoord op die groeiende vraag na elektrisiteit in Suid-Afrika, die behoefte om hernubare energie en volhoubaarheid in die Noordwes-provinsie te bevorder, asook op die land se teikens vir hernubare energie, beoog Moeding Solar die ontwikkeling van 'n kommersiële fotovoltaïese (FV) sonkragopwekkingsaanleg en gepaardgaande infrastruktuur. Die ontwikkeling van die sonkragaanleg word beoog op Gedeelte 1 van die plaas Champions Kloof 731, Gedeelte 4 en die Restant van Gedeelte 3 van die plaas Waterloo 730, wat sowat 8 km suid van Vryburg in die Noordwes-provinsie geleë is.

Daar word beoog dat die aanleg verskeie reekse (stilstandende en naspoor) fotovoltaïese (FV) sonpanele met 'n gekontrakteerde vermoë van hoogstens 100 MW sal insluit. Na verwagting sal die aanleg se ontwikkelingsvoetspoor sowat 300 ha beslaan.

Infrastruktuur wat verband hou met die sonkragaanleg, sal insluit:

- » reekse FV-panele (hetsy 'n stilstandende of naspoor FV-stelsel) met 'n gekontrakteerde vermoë van

hoogstens 100 MW;

- » monteerstrukture om die FV-panele te dra;
- » interne wisselrigters om die elektrisiteit om te sit van 'n gelykstroom na 'n wisselstroom en 'n interne substasie om die verbinding tussen die sonkragaanleg en Eskom se kragnet te bewerkstellig;
- » 'n nuwe 132kV kraglyn tussen die interne substasie en Eskom se verbindingspunt;
- » batteryberging met 'n bergingsvermoë van tot 6 ure;
- » kables tussen die projekkomponente, ondergronds gelê waar prakties moontlik;
- » kantore en werkswinkelgebiede vir instandhouding en berging;
- » tydelike opslagwerwe; en
- » interne toegangspaaie en 'n heining om die ontwikkelingsgebied.

Die 132kV kraglyn word beoog op die Restant van die plaas Rosendal 673, Gedeelte 4 en die Restant van Gedeelte 3 van die plaas Waterloo 730. Twee kraglynalternatiewe word oorweeg, naamlik:

- » 'n direkte verbinding met die bestaande Mookodi Substasie wat in die noordelike gedeelte van die projekterrein geleë is; of
- » 'n inlus-uitlusverbinding met die beoogde Mookodi-Magopela 132 kV kraglyn (met die oostelike grens van die projekterrein langs).

Die ontwikkelaar is van voorneme om die Moeding FV-sonkragaanleg aan te bied ingevolge die Departement van Energie (DE) se Program vir Onafhanklike Hernubare Kragprodusente (REIPPP). Die krag wat deur die projek opgewek sal word, sal aan Eskom verkoop en by die nasionale kragnet ingevoer word. Die ontwikkeling van die projek sal ook help om die elektrisiteitsdoelwitte te bereik soos uiteengesit in die Geïntegreerde Hulpbronneplan.

Studies eie aan die terrein en evaluering sal deur die BE-proses onderneem word ten einde potensiële sensitiewe gebiede in die omstreke en die geïdentifiseerde studiegebied aan te dui. Sodra beperkende faktore bepaal is, kan die uitleg van die sonkragaanleg beplan word om maatskaplike en omgewingsimpakte tot die minimum te beperk.

BENUTTING VAN FV-SONTEGNOLOGIE AS DIE HERNUBARE KRAGTEGNOLOGIE VIR DIE MOEDING FV-SONKRAGAANLEG

Sonkragaanlegte, soos dié wat FV-panele gebruik, gebruik die son se energie om elektrisiteit op te wek deur 'n proses wat as die **Fotovoltaïese Effek** bekend staan. Hierdie effek verwys na ligfotone wat met elektrone bots, wat die elektrone gevolglik in 'n hoër staat van energie plaas om elektrisiteit voort te bring. Die sonkragaanleg sal uit die volgende komponente bestaan (sien Figuur 1):



Die Fotovoltaïese Sel

Individuele FV-selle is verbind en agter 'n beskermende glaspaneel geplaas om 'n fotovoltaïese paneel te vorm.

Die Wisselrigter

Die fotovoltaïese effek wek elektrisiteit in gelykstroom (GS) op, met die gevolg dat 'n wisselrigter benodig word om dit in wisselstroom (WS) om te sit.

Die Steunstruktuur

Die FV-panele sal op 'n steunstruktuur sowat 5 m bo die grond gemonteer wees, wat teen 'n hoek gestel is om die maksimum hoeveelheid sonbestraling (stilstaande tegnologie) te ontvang, of wat gestel is om die son te volg (naspoortegnologie) ten einde die hoeveelheid energie wat opgewek word, te verhoog.

Die FV-panele is ontwerp om vir meer as 20 jaar ononderbroke, onbeman en met min instandhouding in bedryf te staan.



Figuur 1: FV-sonkragaanleg (met vergunning van Kabi Solar)

OMGEWINGSIMPAKEVALUERINGSPROSES (BASIESE EVALUERINGSPROSES)

Ooreenkomstig die OIE-regulasies wat kragtens Artikel 24(5) van die Nasionale Wet op Omgewingsbestuur (NEMA, Wet 107 van 1998) gepubliseer is, verg Moeding Solar (Edms.) Bpk. magtiging van die Nasionale Departement van Omgewingsake (DO) (in oorleg met die Noordwes se Departement van Landelike, Omgewings- en Landbou-ontwikkeling (READ)) vir die onderneming van die projek. Omdat die projekterrein vir die Moeding FV-sonkragaanleg in die REDZ geleë is, moet 'n BE-proses kragtens Staatskennisgewing 114, wat formeel op 16 Februarie 2018 in die Staatskoerant afgekondig is, onderneem word. Ten einde magtiging te verkry, moet omvattende, onafhanklike omgewingstudies ingevolge die OIE-regulasies, 2014, soos gewysig, onderneem word.

'n BE is 'n doeltreffende beplannings- en besluitnemingswerktuig. Dit bring mee dat die omgewingsverwante gevolge wat voortspruit 'n beoogde aktiwiteit, geïdentifiseer en na behore tydens die oprigting en bedryf daarvan bestuur word. Dit bied die ontwikkelaar die geleentheid om vooraf gewaarsku te wees teen potensiële omgewingsvraagstukke en bied die geleentheid om die vraagstuk(ke) waarvoor verslag gedoen is in die BE-verslag, asook uit dialoog met die geïmpakteerde partye, op te los.

Moeding Solar het **Savannah Environmental** aangestel as die onafhanklike omgewingskonsultant om die Basiese Evaluering vir die projek te onderneem, om alle gepaardgaande potensiële omgewingsimpakte betreffende die projek te identifiseer en te evalueer, en om gepaste versagtingsmaatreëls in 'n Omgewingsbestuursprogram (OBPr) aan te beveel. As deel van hierdie omgewingstudies sal B&GP's aktief betrokke raak deur die openbare betrokkenheidsproses wat deur **Savannah Environmental** onderneem word.

WAT IS DIE POTENSIËLE OMGEWINGSIMPAKTE WAT VERBAND HOU MET DIE MOEDING FV-SONKRAGAAANLEG?

'n Aantal potensiële omgewingsimpakte wat verband hou met die Moeding FV-sonkragaanleg, is geïdentifiseer en sal deur spesialisstudies geëvalueer word, insluitend:

- » impakte op biodiversiteit – wat insluit ekologie, vleilande, fauna en flora;
- » impakte op avifauna (voëllewe);
- » impakte op grondsoorte en landboupotensiaal;
- » impakte op erfenishulpbronne, insluitend argeologie en paleontologie;
- » impakte op die maatskaplike en sosio-ekonomiese omgewing; en
- » impakte op die gebied se visuele gehalte.



Die onafhanklike spesialisstudies sal onderneem word waarin die potensieel wesenlike impakte geëvalueer en ter plaaste getoets sal word. Praktiese en uitvoerbare versagtingsmaatreëls sal aanbeveel word ten einde die wesenlikheid van die potensieël impakte wat geïdentifiseer is, te minimaliseer. Hierdie aanbevelings sal vervat word in 'n Omgewingsbestuursprogram (OBPr) wat vir die projek saamgestel word.

Spesialisstudies sal toegelig word deur bestaande inligting, veldwaarnemings en insette wat uit die openbare deelnameproses voortspruit. As 'n B&GP word u insette as 'n belangrike deel van die proses geag, en ons moedig u aan om betrokke te raak.

OPENBARE BETROKKENHEIDSPROSES

Die deel van inligting vorm die grondslag van die openbare betrokkenheidsproses en bied u die geleentheid om uit die staanspoor aktief by die BE-proses betrokke te raak. Kommentaar en insette van B&GP's tydens die BE-proses word aangemoedig ten einde te verseker dat oorweging aan alle potensieël impakte binne die omvang van die studie geskenk word.

Die openbare deelnameproses poog om te verseker dat:

- » inligting wat al die tersaaklike feite met betrekking tot die aansoek bevat, aan B&GP's beskikbaar gestel word vir insae;
- » deelname deur potensieël B&GP's op so 'n wyse gefasiliteer word dat hulle 'n redelike geleentheid gegun word om kommentaar te lewer oor die aansoek; en
- » 'n toereikende insaetydperk aan B&GP's gebied word om kommentaar te lewer oor die bevindinge van die BE-verslag.

U VERANTWOORDELIKHEDE AS 'N B&GP

Ingevolge Artikel 24J van die Nasionale Wet op Omgewingsbestuur, Wet 107 van 1998, en die Departement van Omgewingsake se Openbare Deelnamereglyn, 2017, as deel van die BE-proses, het 'n B&GP die verantwoordelikheid om:

- » kommentaar te lewer oor die projek en wel in die gespesifiseerde tydsraamwerke;
- » skriftelike kommentaar regstreeks by die OEP in te dien; en
- » enige regstreekse sake-, finansiële-, persoonlike- of ander belange bekend te maak wat daardie B&GP in die goedkeuring of afkeuring van die aansoek kan hê.

HOE OM BETROKKE TE RAAK

1. Deur te reageer (telefonies, per faks of per e-pos) op ons uitnodiging vir u betrokkenheid wat in plaaslike koerante geadverteer is.
2. Deur die aangehegte antwoordvorm aan die tersaaklike kontakpersoon terug te besorg.
3. Deur die vergaderings by te woon wat tydens die verloop van die BE-proses gehou sal word.
4. Deur die konsultante te kontak met navrae of kommentaar.
5. Deur oorsig oor en kommentaar op die BE-verslag te bied, en wel binne die gestipuleerde 30-dae insaetydperke.

As u self as 'n B&GP vir die Moeding FV-sonkragaanleg ag, moedig ons u aan om gebruik te maak van die geleentheid wat geskep word deur die openbare betrokkenheidsproses om kommentaar te lewer of daardie vraagstukke en knelpunte te opper wat u raak en/of waarin u belangstel en waaroor u meer inligting wil hê. U insette in hierdie proses vorm 'n belangrike deel van die BE-proses.

KOMMENTAAR EN NAVRAE

Rig alle kommentaar, navrae of antwoorde aan:

Savannah Environmental

Posbus 148, Sunninghill, Johannesburg, 2157

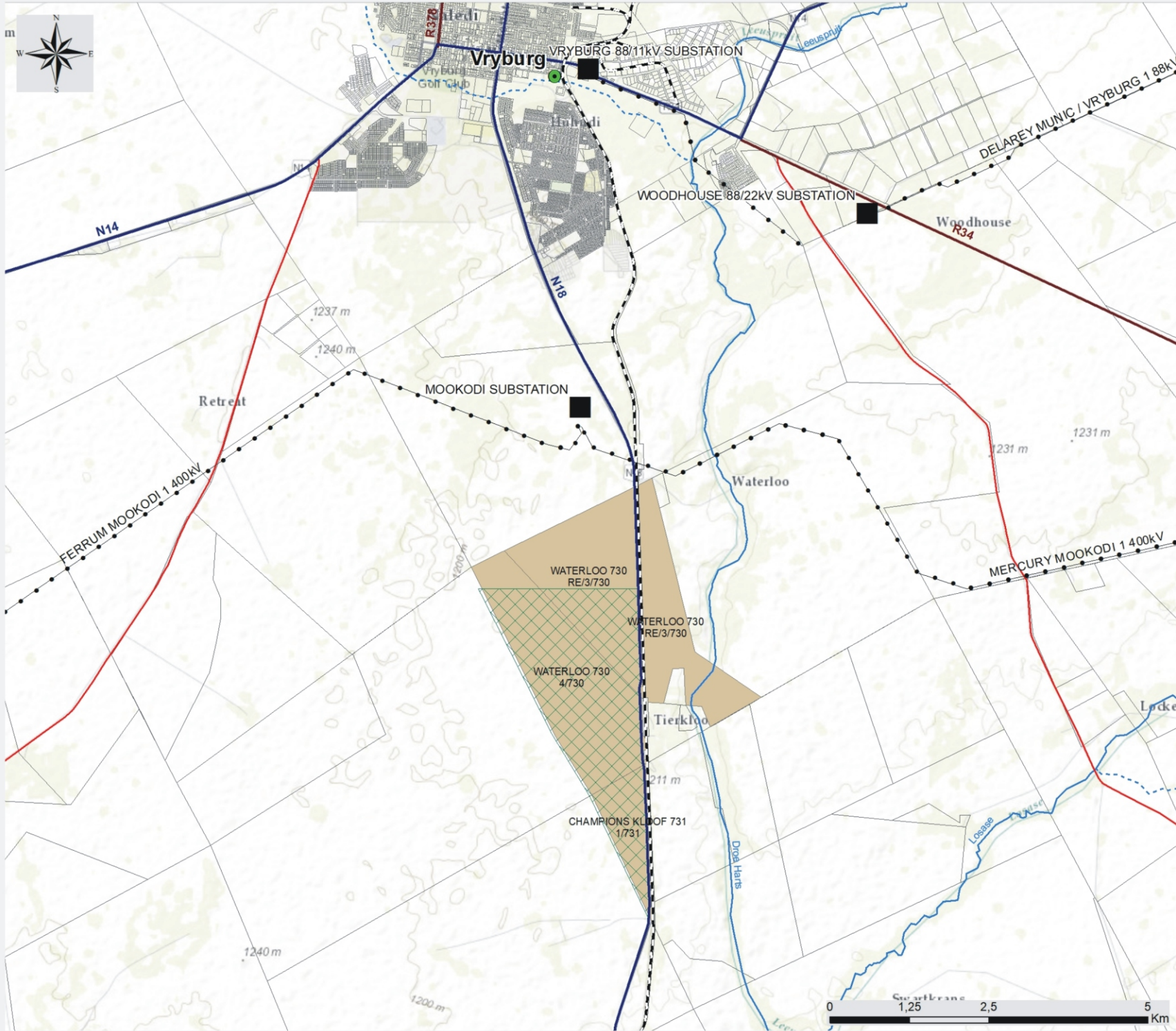
Telefoon: 011 656 3237

Faks: 086 684 0547

E-pos: publicprocess@savannahsa.com

Om projekdokumentasie te besigtig, besoek

www.savannahSA.com



Moeding Solar PV Facility and associated infrastructure, North West Province

Locality Map

Legend

- Town
- Eskom Substation
- Railway
- National Route
- Regional Road
- Main Road
- Non-perennial River
- Perennial River
- Project Site
- Affected Property
- Farm Portion



Scale: 1:56 360
 Projection: LO25
 Map Ref: Moeding Locality Map 27.06.2018

