APPENDIX C3:

Background Information Document

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BACKGROUND INFORMATION DOCUMENT (BID)

NOVEMBER 2020

ENVIRONMENTAL IMPACT ASSESSMENT PROCESS

100MW VREDE SOLAR PV FACILITY AND BATTERY ENERGY STORAGE SYSTEM, 100MW RONDAVEL SOLAR PV FACILITY AND BATTERY ENERGY STORAGE SYSTEM, AND ASSOCIATED GRID CONNECTION SOLUTIONS,

FREE STATE

The development of two separate solar photovoltaic (PV) facilities inclusive of all associated infrastructure are proposed ~13km south west of Kroonstad, in the Free State Province by South Africa Mainstream Renewable Power Developments (Pty) Ltd. The two solar PV facilities are to be known as the Vrede Solar PV Facility and the Rondavel Solar PV Facility. The solar PV facilities will be connected to the grid via dedicated grid connection solutions, to be known as Vrede Grid Connection and Rondavel Grid Connection.

The nature and extent of the solar PV facilities and the associated infrastructure, as well as the respective grid connection applications are explored in more detail in this Background Information Document (BID). Each solar PV facility will be constructed as a separate stand-alone project, and is assessed through an EIA process. Similarly, each grid connection solution will be subjected to a separate Basic Assessment process which will consider feasible alternatives for the power line routes. Due to the proximity of the solar PV facilities and grid connection solutions to one another, the public participation processes for the EIA processes will be undertaken concurrently, providing the public with an opportunity to understand and comment on each of the projects. The details for the respective projects are as follows:

Project name	Affected Properties	Capacity	EIA Process
Vrede Solar PV Facility	• Remaining extent of the farm Vrede No. 1152; • Portion 1 of the farm Uitval No. 1104.	100MW Solar PV	Scoping/EIA
Vrede Grid Connection	<u>Both Alternative 1 and Alternative 2:</u> • Remaining extent of the farm Vrede No. 1152; • Remaining Extent of the farm Gesukkel No. 1153; • Remaining Extent of the farm Geduld No. 1156.	132kV substation and grid line	BAR
Rondavel Solar PV Facility	• Remaining Extent of the farm Rondavel Noord No. 1475; • Remaining Extent of the farm Rondavel No. 627.	100MW Solar PV	Scoping/EIA
Rondavel Grid Connection	<u>Alternative 1:</u> • Remaining extent of the farm Rondavel No. 627 • Portion 1 of the farm Rondavel No. 627 • Portion 0 of the farm Rondavel No. 627 • Remaining extent of the farm Boschplaat No. 330 • Remaining extent of the farm Salie No. 1837	132kV substation and grid line	BAR

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Rondavel Grid Connection	Alternative 2: • Remaining extent of the farm Rondavel-Noord No. 1475 • Portion 1 of the farm Naseby Thorns No. 288 • Portion 0 of the farm Leeuwkrantz No. 1384 • Remaining extent of the farm Dorp Gronden Van Kroonstadt No. 460 • Portion 225 of the farm Dorp Gronden Van Kroonstadt No. 460 • Portion 226 of the farm Dorp Gronden Van Kroonstadt No. 460 Alternative 3: • Remaining extent of the farm Rondavel-Noord No. 1475 • Remaining extent of the farm Waterloo No. 1383		

It is the Developer's intention to bid each solar PV facility under the Renewable Energy Independent Power Producer Procurement (REIPPP) Programme. The power generated from each solar PV facility will be sold to Eskom and fed into the national electricity grid through the proposed grid connections solutions. The development of the facilities and grid connection infrastructure will also assist with achieving the energy mix as set out in the Integrated Resources Plan (IRP).

Aim of this background information document

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

- An overview of the proposed solar PV facilities, grid connection solution and associated infrastructure.
- An overview of the Environmental Impact Assessment (EIA) processes and specialist studies being undertaken to assess the solar PV facilities and associated grid connection solutions.
- Details of how you can become involved in the EIA processes, receive information, or raise comments that may concern and/or interest you.

Overview Of The Projects

In response to the electricity demand and need for supply within South Africa, the need to promote renewable energy and sustainability within the Free State Province, as well as the country's targets for renewable energy, the development of two solar PV facilities is proposed. The development of the solar PV facilities will add new capacity and transmission infrastructure to the national electricity grid network. The available development area for each solar PV facility is in excess of 1000ha in extent. The smaller development footprint for each facility will be located within the designated development area, and the layout for each facility will be designed to avoid sensitive environmental areas and features.

Infrastructure associated with each solar PV facility will include:

- Solar PV array comprising PV modules and mounting structures.
- Inverters and transformers.
- Cabling between the project components.
- On-site facility substation to facilitate the connection between the solar PV facility and the Eskom electricity grid.
- Battery Energy Storage System (BESS).
- Site offices and maintenance buildings, including work shop areas for maintenance and storage.
- Laydown areas.
- Access roads, internal distribution roads and fencing around the development area.

Site-specific studies and assessments will delineate areas of potential sensitivity within the identified development areas for both the Vrede Solar PV Facility and the Rondavel Solar PV Facility. Once constraining factors have been confirmed, the layout of the solar PV facilities can be planned to minimise social and environmental impacts.

The Vrede Grid Connection and Rondavel Grid Connection grid connection solutions will each include a collector substation and an overhead power line with a capacity of up to 132kV.

The Vrede Grid Connection solution will loop into the existing Eskom 132kV Kroonstad Municipality – Theseus 1 132kV power line.

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The Rondavel Grid Connection will loop into either the Kroonstad Munic – Kroonstad SW STN 1 132kV power line, or connect directly with the Kroonstad Municipality 132/66kV substation, depending on which alternative is constructed. The assessment of the grid connection infrastructure will consider a corridor with a width of up to 260m. Two alternative routes are being considered for the Vrede Grid Connection, and three for the Rondavel Grid Connection grid connection solutions:

Project	Alternative and approximate distance	Assessment corridor width
Vrede Grid Connection	Alternative 1: 1 579m	Scoping/EIA
Rondavel Grid Connection	Alternative 1: 3 054m Alternative 2: 3 902m Alternative 3: 1 474m	BAR

More about solar pv technology

Solar energy facilities 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 fields of the PV facilities will comprise the following components:

Photovoltaic Cells:
A photovoltaic (PV) cell is made of silicone that acts as a semiconductor used to produce the photovoltaic effect. PV cells are arranged in multiples/arrays and placed behind a protective glass sheet to form a PV panel. Each PV cell is positively charged on one side and negatively charged on the opposite side, with electrical conductors attached to either side to form a circuit. This circuit captures the released electrons in the form of an electric current (i.e. Direct Current (DC)).

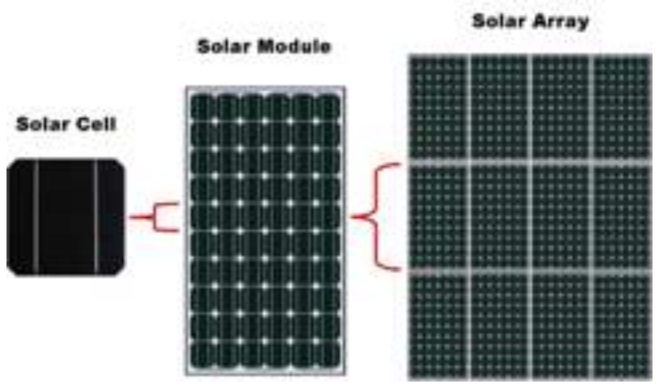

Figure 2: Overview of a PV cell, module and array/panel (Source: pveducation.com)

A solar PV module is made up of individual solar PV cells connected together, whereas a solar PV array is a system made up of a group of individual solar PV modules electrically wired together to form a much larger PV installation. The PV panels will be fixed to support structures to maximise exposure to the sun.

Inverters:
Inverters are used to convert electricity produced by the PV cells from Direct Current (DC) into Alternating Current (AC) to enable the facility to be connected to the national electricity grid. Numerous inverters will be arranged in several arrays to collect and convert power produced by the facilities.

Support Structures:
PV panels will be fixed to support structures. PV panels can either utilise fixed / static support structures, or alternatively they can utilise single or double axis tracking support structures. PV panels which utilise fixed / static support structures are set at an angle (fixed-tilt PV system) so as to optimise the amount of solar irradiation received. With fixed / static support structures the angle of the PV panel is dependent on the latitude of the proposed development and may be adjusted to optimise for summer and winter solar radiation characteristics. PV panels which utilise tracking support structures track the movement of the sun throughout the day so as to receive the maximum amount of solar irradiation.

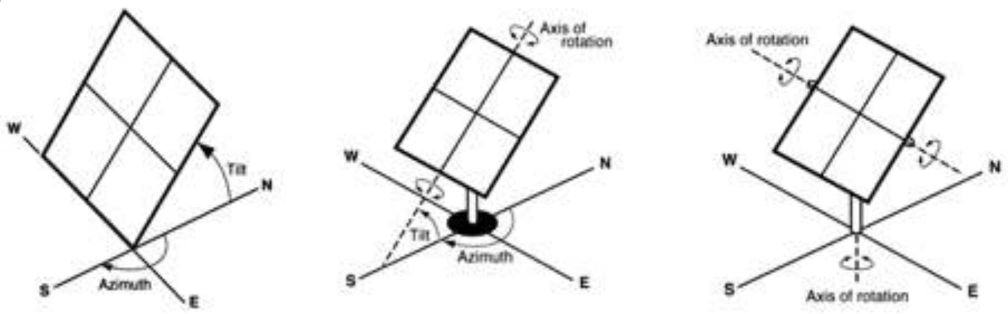

Figure 2: Overview of different PV tracking systems (from left to right: fixed-tilt, single-axis tracking, and double-axis tracking (Source: pveducation.com)).

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

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The BESS will:

- Store and integrate a greater amount of renewable energy from the Solar PV Facilities into the electricity grid;
- This will assist with the objective to generate electricity by means of renewable energy to feed into the National Grid which will be procured under either the Renewable Energy Independent Power Producer Procurement Program (REIPPPP) other government run procurement programmes or for sale to private entities if required.
- Proposed footprint of battery storage area: Up to 2 ha
- Proposed capacity of battery storage: 200MWh
- Proposed technology to be used: Lithium Ion
- Battery types to be considered: Solid State Batteries and Redox Flow Batteries.

Environmental impact assessment process

In accordance with the EIA Regulations, 2014 (as amended) published in terms of Section 24(5) of the National Environmental Management Act (No. 107 of 1998) (NEMA), the applicants require Environmental Authorisation (EA) from the National Department of Environment, Forestry and Fisheries (DEFF) in consultation with the Free State Department of Economic Development, Tourism and Environmental Affairs for the development of the proposed projects. In terms of Section 24(5) of NEMA, the EIA Regulations 2014 (as amended) and Listing Notices (GNR 327, GNR 325, and GNR 324), the two applications for EA for the Solar PV Facilities are subject to the completion of Scoping/EIA processes. In addition, the two applications for EA for the Vrede Grid Connection and Rondavel Grid Connection are each subject to the completion of a Basic Assessment (BA) process. Each application is required to be supported by comprehensive, independent environmental studies undertaken in accordance with the EIA Regulations, 2014 (as amended).

An EIA is an effective planning and decision-making tool. It allows for potential environmental consequences resulting from a proposed activity to be identified and appropriately managed during the construction, operation, and decommissioning phases of development. It also provides an opportunity for the project applicant to be forewarned of potential environmental issues, and allows for the resolution of issue(s) identified and reported on as part of the EIA process, as well as provides opportunity for dialogue with key stakeholders and Interested and Affected Parties (I&APs).

Savannah Environmental has been appointed as the independent environmental consultant responsible for managing the separate applications for EA and undertaking the supporting EIA process required to identify and assess potential environmental impacts associated with the projects detailed above, as well as propose appropriate mitigation and management measures to be contained within the Environmental Management Programmes (EMPrs).

What are the potential environmental impacts associated with the proposed projects?

The development area and the grid connection corridors will be assessed by independent environmental specialists to identify the potential for environmental impacts. Specialist studies that are proposed as part of the EIA processes include the following:

These studies assessed the following aspects of the projects:

- Biodiversity – includes ecology, fauna and flora and assess the potential impact and the associated disturbance of vegetation on the biodiversity (including critical biodiversity areas and broad-scale processes).
- Wetland and freshwater features – includes an assessment of impact and associated disturbance to drainage lines, rivers and wetlands at a broad and fine scale.
- Avifauna – includes an assessment of impacts on avifaunal habitats and sensitive features.
- Soils and Agricultural Potential – includes land types and assesses the significance of loss of agricultural land and soil degradation and/or erosion.
- Heritage (Archaeology and Palaeontology) – which includes archaeology and palaeontology and assesses the potential of disturbance to or destruction of heritage sites and fossils during the construction phase through excavation activities.
- Visual – which includes the visual quality of the area and assesses the impact of the solar PV facilities and the grid connection solution on the aesthetics within the area.
- Social – which assesses the positive and negative social impacts.

Specialist studies will be informed by existing information, previous experience in the area, 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 participation process

The sharing of information forms the basis of the public participation process and offers I&APs the opportunity to become actively involved in the EIA processes. Comments and inputs from I&APs are encouraged in order to ensure that potential impacts are considered throughout the EIA processes. The public participation process aims to ensure that:

- Information containing all relevant facts in respect of the applications are made available to I&APs for review.
- I&AP participation is facilitated in such a manner that they are provided with reasonable opportunity to comment on the proposed projects.
- Adequate review periods are provided for I&APs to comment on the findings of the Scoping/EIA and/or Basic Assessment Reports.

In order to ensure effective participation, the public participation processes include the following:

- Identifying I&APs, including affected and adjacent land owners and occupiers of land, and relevant Organs of State, and recording details within a database.
- Notifying registered I&APs of the commencement of the EIA processes and distributing the Background Information Document (BID).
- Providing access to registered parties to an online stakeholder engagement platform, which centralises project information and stakeholder input in a single digital platform.
- Providing an opportunity for I&APs to engage with the project team.
- Placing site notices at the affected properties.
- Placing an advertisement in a local newspaper.
- Notifying I&APs of the release of the Reports for a 30-day review and comment period.

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Your responsibilities as an i&ap

In terms of the EIA Regulations, 2014 (as amended) and the Public Participation Guidelines, 2014 your attention is drawn to your responsibilities as an I&AP:

- In order to participate in the EIA processes, you must register yourself on the I&AP database.
- You must ensure that any comments regarding the proposed projects are submitted within the stipulated time frames.
- You are required to disclose any direct business, financial, personal, or other interest that you may have in the approval or refusal of the applications.

How to become involved

1. By responding by phone, fax, or e-mail, to the invitation for your involvement.

2. By returning the reply form to the relevant contact person.

3. By engaging with the project team on the online stakeholder engagement platform during the EIA processes.

4. By contacting the environmental consultant with queries or comments.

5. By reviewing and commenting on the Reports within the stipulated 30-day review and comment periods. Registered I&APs will automatically be notified of the release of the Scoping/EIA Reports and/or Basic Assessment Reports for comment, and the closing dates by which comments must be received.

If you consider yourself an I&AP for the proposed projects, we urge you to make use of the opportunities created by the public participation process to provide comment, raise issues and concerns which affect and / or interest you, or request further information. Your input forms a key element of the EIA processes.

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

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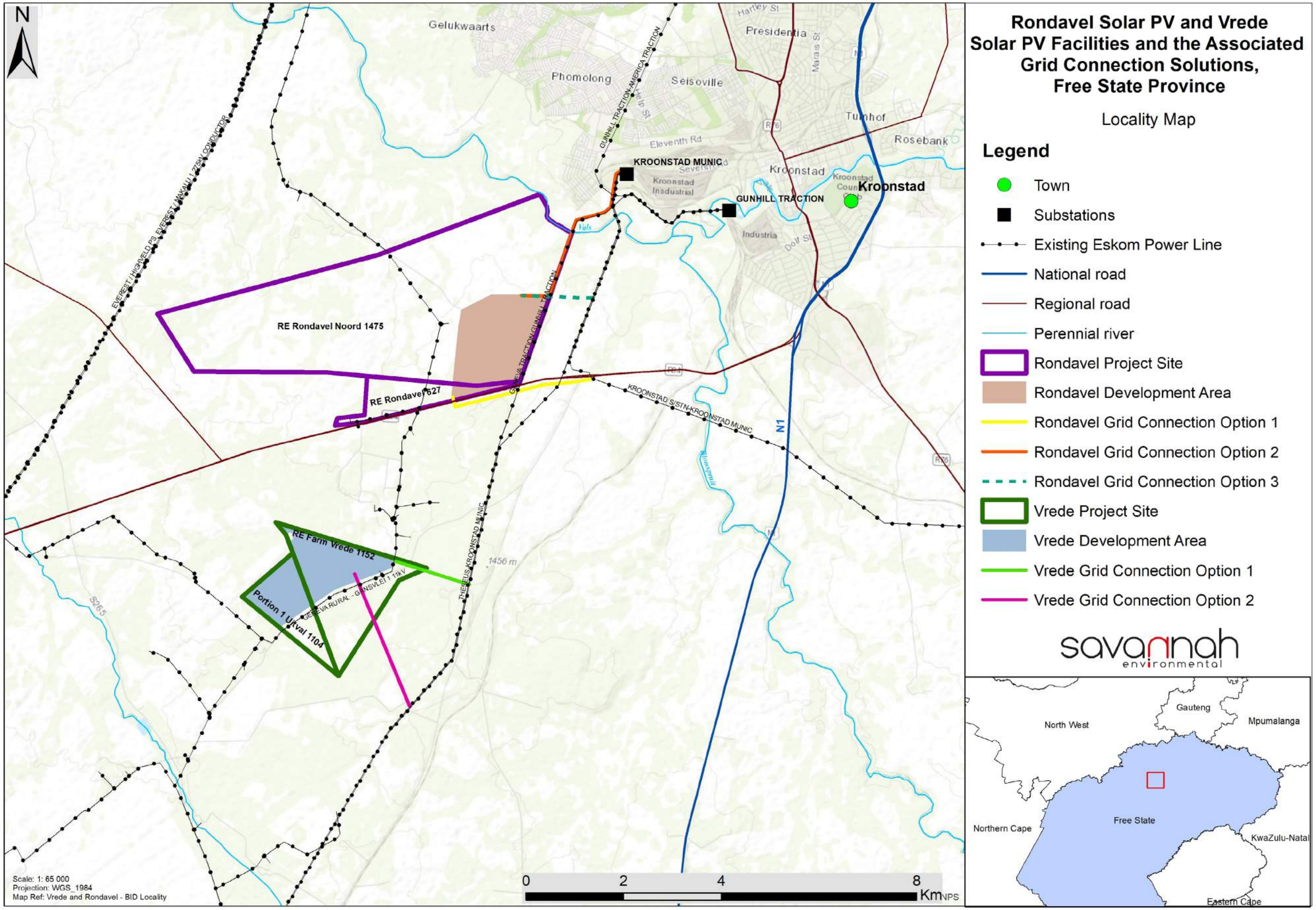
Figure 1: Locality Map and Layout



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COMMENTS AND QUERIES

Direct all comments, queries or responses to:

Savannah Environmental
Nicolene Venter
P.O. Box 148, Sunninghill, 2157
Tel: 011 656 3237
Mobile: 060 978 8396
Fax: 086 684 0547
E-mail: publicprocess@savannahsa.com

To visit the online stakeholder engagement platform and view project documentation, visit
www.savannahSA.com

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AGTERGRONDINLIGTINGSDOKUMENT

NOVEMBER 2020

OMGEWINGSIMPAKEVALUERINGSPROSES

100 MW VREDE FV-SONKRAGAANLEG EN BATTERYKRAGBERGINGSTELSEL, 100 MW RONDAVEL FV-SONKRAGAANLEG EN BATTERYKRAGBERGINGSTELSEL EN VERWANTE ROOSTERKONNEKSIE-OPLOSSINGS,

VRYSTAAT

South Africa Mainstream Renewable Power Developments (Edms.) Bpk. beoog die ontwikkeling van twee aparte fotovoltaïese (FV) sonkragaanlegte, met insluiting van alle verwante infrastruktuur, ~13 km suidwes van Kroonstad in die Vrystaatprovinsie. Die twee FV-sonkragaanlegte sal die Vrede FV-sonkragaanleg en die Rondavel FV-sonkragaanleg heet. Die FV-sonkragaanlegte sal met die kragnet verbind word aan die hand van toegewyde roosterkonneksie-oplossings, wat die Vrede Roosterkonneksie en Rondavel Roosterkonneksie sal heet.

Die aard en omvang van die FV-sonkragaanlegte en verwante infrastruktuur, asook die onderskeie roosterkonneksie-aansoeke, word van naderby in hierdie Agtergrondinligtingsdokument (AID) ondersoek. Elke FV-sonkragaanleg sal as 'n aparte alleenstaande projek opgerig en word deur 'n OIE-proses geëvalueer. Eweneens sal elke roosterkonneksie-oplossing onderwerp word aan 'n aparte Basiese Evalueringsproses, wat oorweging aan bedryfbare alternatiewe vir die kraglynroetes sal skenk. Weens die nabyheid van die FV-sonkragaanlegte en die roosterkonneksie-oplossings aan mekaar, sal die openbare deelnameprosesse vir die OIE-prosesse gelyklopend onderneem word, wat die publiek 'n geleentheid sal bied om elkeen van die projekte te verstaan en daarop kommentaar te lewer. Die besonderhede vir die onderskeie projekte is soos volg:

Projeknaam	Geaffekteerde eiendomme	Vermoë	OIE-proses
Vrede FV-sonkragaanleg	• Restant van die plaas Vrede No. 1152 • Gedeelte 1 van die plaas Uitval No. 1104	100 MW FV-sonkrag	Bestekopname/ OIE
Vrede roosterkonneksie	Beide Alternatief 1 en Alternatief 2: • Restant van die plaas Vrede No. 1152 • Restant van die plaas Gesukkel No. 1153 • Restant van die plaas Geduld No. 1156	132 kV substasie en kragnetlyn	BEV
Rondavel FV-sonkragaanleg	• Restant van die plaas Rondavel Noord No. 1475 • Restant van die plaas Rondavel No. 627	100 MW FV-sonkrag	Bestekopname/ OIE
Rondavel roosterkonneksie	Alternatief 1: • Restant van die plaa Rondavel No. 627 • Gedeelte 1 van die plaas Rondavel No. 627 • Gedeelte 0 van die plaas Rondavel No. 627 • Restant van die plaas Boschplaat No. 330 • Restant van die plaas Salie No. 1837	132 kV substasie en kragnetlyn	BEV

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Rondavel roosterkonneksie	Alternatief 2: • Restant van die plaas Rondavel-Noord No. 1475 • Gedeelte 1 van die plaas Naseby Thorns No. 288 Gedeelte 0 van die plaas Leeuwkrantz No. 1384 • Restant van die plaas Dorp Gronden Van Kroonstadt No. 460 • Gedeelte 225 van die plaas Dorp Gronden Van Kroonstadt No. 460 • Gedeelte 226 van die plaas Dorp Gronden Van Kroonstadt No. 460 Alternatief 3: • Restant van die plaas Rondavel-Noord No. 1475 • Restant van die plaas Waterloo No. 1383		

Die ontwikkelaar is van voorneme om elke FV-sonkragaanleg aan te bied ingevolge die Verkrygingsprogram vir Onafhanklike Hernubare Kragprodusente (REIPPP). Die krag wat by elke FV-sonkragaanleg opgewek sal word, sal aan Eskom verkoop en deur die beoogde roosterkonneksie-oplossings by die nasionale kragnet ingevoer word. Die ontwikkeling van die aanlegte en roosterkonneksie-infrastruktuur sal ook bydra om die kragmengsel, soos uiteengesit in die Geïntegreerde Hulpbronneplan (IRP), te verwesenlik.

DOEL VAN HIERDIE AGTERGRONDINLIGTINGSDOKUMENT

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

» 'n oorsig van die beoogde FV-sonkragaanlegte, roosterkonneksie-oplossing en verwante infrastruktuur;
» 'n oorsig van die Omgewingsimpakevalueringsprosesse (OIE-prosesse) en spesialisstudies wat onderneem word om die FV-sonkragaanlegte en verwante roosterkonneksie-oplossings te evalueer;
» besonderhede van hoe u by die OIE-prosesse betrokke kan raak, inligting kan ontvang of kommentaar kan opper wat u dalk kan raak en/of vir u van belang kan wees.

OORSIG VAN DIE PROJEKTE

In antwoord op die vraag na en voorsiening van elektrisiteit in Suid-Afrika, die behoefte om hernubare krag en volhoubaarheid in die Vrystaatprovinsie te bevorder, asook die land se teikens vir hernubare krag, word die ontwikkeling van twee FV-sonkragaanlegte aan die hand gedoen. Die ontwikkeling van die FV- sonkaragaanlegte sal nuwe vermoë en transmissie-infrastruktuur by die nasionale kragnetwerk voeg. Die beskikbare ontwikkelingsgebied vir elke FV-sonkragaanleg is groter as 1 000 ha in omvang. Die kleiner ontwikkelingsvoetspoor vir elke aanleg sal in die toegewese ontwikkelingsgebied geleë wees en die uitleg vir elke aanleg sal ontwerp wees om sensitiewe omgewingsgebiede en landmerke te vermy.

Infrastruktuur wat met elk van die FV-sonkragaanlegte verband hou, sal insluit:

» FV-sonkragreeks bestaande uit FV-modules en monteerstrukture;
» wisselrigters en transformators;
» kabels tussen die projekkomponente;
» 'n interne aanlegsubstasie om die konneksie tussen die FV-sonkragaanleg en Eskom se kragnet te bewerkstellig;
» 'n batterykragbergingstelsel (BESS);
» terreinkantore en instandhoudingsgeboue, wat werkswinkelgebiede vir instandhouding en berging insluit;
» stapelwerwe; en
» toegangspaaie, interne verspreidingspaaie en 'n heining om die ontwikkelingsgebied.

Terreinspesifieke studies en evaluerings sal gebiede van potensiële sensitiwiteit in die geïdentifiseerde ontwikkelingsgebiede vir beide die Vrede FV-sonkragaanleg en die Rondavel FV-sonkragaanleg afbaken. Sodra beperkende faktore bevestig is, kan die uitleg van die FV-sonkragaanlegte beplan word om maatskaplike en omgewingsimpakte tot die minimum te beperk.

Die Vrede Roosterkonneksie- en Rondavel Roosterkonneksie-oplossings sal elk 'n kollektorsubstasie en 'n oorhoofse kraglyn met 'n vermoë van hoogstens 132 kV insluit.

Die Vrede Roosterkonneksie-oplossing sal in die bestaande Eskom 132 kV Kroonstad Munisipaliteit – Theseus 1 132 kV kraglyn inlus.

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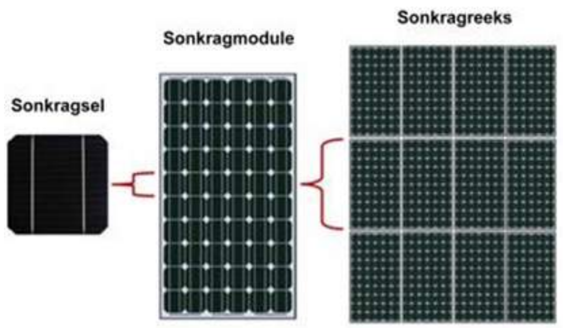
Die Rondavel Roosterkonneksie sal hetsy in die Kroonstad Munic – Kroonstad SW STN 1 132 kV kraglyn, of direk met die Kroonstad Munisipaliteit 132/66 kV substasie inlus, afhangend van watter alternatief opgerig word. Die evaluering van die roosterkonneksie-infrastruktuur sal oorweging skenk aan 'n korridor met 'n breedte van hoogstens 260 m. Twee alternatiewe roetes word vir die Vrede Roosterkonneksie oorweeg, en drie vir die Rondavel Roosterkonneksie-oplossings:

Projek	Alternatief en beraamde afstand	Breedte van evalueringskorridor
Vrede roosterkonneksie	Alternatief 1: 1 579 m Alternatief 2: 2 905 m	In 'n 260 m evalueringskorridor
Rondavel roosterkonneksie	Alternatief 1: 3 054 m Alternatief 2: 3 902 m Alternatief 3: 1 474 m	In 'n 260 m evalueringskorridor

MEER OOR FV-SONKRAGTEGNOLOGIE

Sonkragaanlegte gebruik die son se energie om elektrisiteit op te wek deur 'n proses wat as die Fotovoltaïese Effek bekendstaan. 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 FV-aanlegte se sonkragvelde sal uit die volgende komponente bestaan:

Fotovoltaïese Selle:
'n Fotovoltaïese (FV) sel word van silikon gemaak wat as halfgeleier optree en gebruik word om die fotovoltaïese effek voort te bring. FV-selle word in veelvoude/reekse gerangskik en agter 'n beskermende glaspaneel geplaas om 'n FV-paneel te vorm. Elke FV-sel se een kant is positief en die teenoorgestelde kant negatief gelaai, met elektriese geleiers wat aan beide kante aangebring is om 'n stroombaan te vorm. Hierdie stroombaan vang die vrygestelde elektrone vas in die vorm van 'n elektriese stroom (d.i. gelykstroom (GS)).



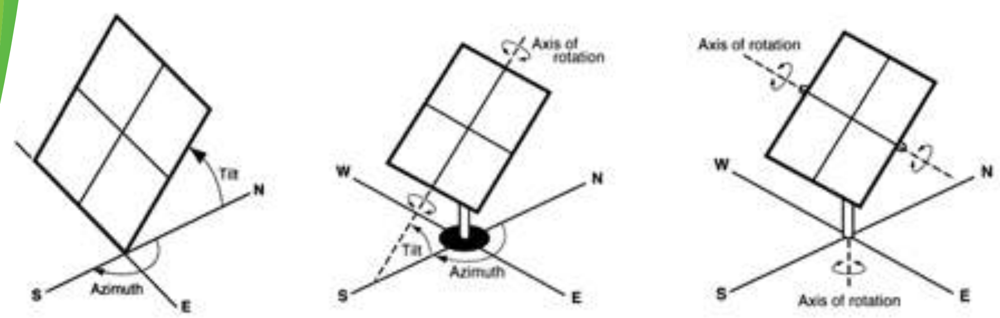
Figuur 2: Oorsig van 'n FV-sel, -module en -reeks/paneel (Bron: pveducation.com)

'n FV-sonpaneelmodule bestaan uit individuele FV-selle wat met mekaar verbind is, terwyl 'n FV-sonkragreeks 'n stelsel is wat bestaan uit 'n groep individuele FV-sonkragmodules wat elektries bedraad is om 'n veel groter FV-installasie te vorm. Die FV-panele sal op steunstrukture aangebring word om blootstelling aan die son te maksimaliseer.

Wisselrigters:
Wisselrigters word gebruik om elektrisiteit wat deur die FV-selle opgewek word van gelykstroom (GS) na wisselstroom (WS) om te sit sodat die aanleg met die nasionale kragnet verbind kan word. Verskeie wisselrigters sal in verskeie reekse gerangskik word om krag wat deur die aanlegte opgewek word, te versamel en om te sit.

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

Steunstrukture:
FV-panele sal op steunstrukture aangebring word. FV-panele kan hetsy vaste/stilstaande steunstrukture gebruik, of andersins kan hulle enkel- of dubbelas naspoorsteunstrukture gebruik. FV-panele wat vaste/stilstaande steunstrukture gebruik, word teen 'n hoek gestel (vaste-kanteling FV-stelsel) ten einde die hoeveelheid sonbestraling wat ontvang word, ten volle te benut. Met vaste/stilstaande steunstrukture, hang die hoek van die FV-paneel af van die breedteligging van die beoogde ontwikkeling en kan verstel word om die kenmerke van somer- en wintersonbestraling ten volle te benut. FV-panele wat naspoorsteunstrukture gebruik, volg die son se beweging deur die dag ten einde die maksimum hoeveelheid sonbestraling te ontvang.



Figuur 2: Oorsig van 'n FV-sel, -module en -reeks/paneel (Bron: pveducation.com)

'n FV-sonpaneelmodule bestaan uit individuele FV-selle wat met mekaar verbind is, terwyl 'n FV-sonkragreeks 'n stelsel is wat bestaan uit 'n groep individuele FV-sonkragmodules wat elektries bedraad is om 'n veel groter FV-installasie te vorm. Die FV-panele sal op steunstrukture aangebring word om blootstelling aan die son te maksimaliseer.

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Batterykragbergingstelsel (BESS):
Die behoefte vir 'n BESS spruit voort uit die feit dat elektrisiteit slegs deur die Hernubare Kragaanleg opgewek word terwyl die son skyn, terwyl die piekvraag nie noodwendig gedurende die dag plaasvind nie. Gevolglik sal die berging van elektrisiteit en die voorsiening daarvan tydens piekvraag beteken dat die aanleg meer doeltreffend en meer betroubaar sal wees en dat die elektrisiteitsvoorsiening meer bestendig sal wees.

Die BESS sal:
- meer hernubare krag van die FV-sonkragaanlegte stoor en by die kragnet integreer.
- Dit sal help met die doelwit om elektrisiteit by wyse van hernubare kragtegnologie op te wek, om by die nasio nale kragnet in te voer, wat bekom sal word ingevolge hetsy die Verkrygingsprogram vir Hernubare Krag van On afhanklike Kragprodusente (REIPPPP), ander staatsbeheerde verkrygingsprogramme of vir verkoop aan privaat entiteite, indien nodig.
- Beoogde voetspoor van batterybergingsgebied: Hoogstens 2 ha
- Beoogde vermoë van batteryberging: 200 MWh
- Beoogde tegnologie wat gebruik gaan word: Litium-ioon
- Soorte batterye wat oorweeg sal word: Vastestaatbatterye en Redoks-vloeibatterye.

Omgewingsimpakevalueringsproses

Ooreenkomstig die OIE-regulasies, 2014 (soos gewysig), wat kragtens Artikel 24(5) van die Nasionale Wet op Omgewingsbestuur (Wet 107 van 1998) (NEMA) gepubliseer is, benodig die applikante Omgewingsmagtiging (OM) van die Nasionale Departement van Omgewing, Bosbou en Visserye (DEFF), in oorleg met die Vrystaatse Departement van Ekonomiese Ontwikkeling, Toerisme en Omgewingsake vir die ontwikkeling van die beoogde projekte. Ingevolge Artikel 24(5) van NEMA, die OIE-regulasies 2014 (soos gewysig) en Lyskennisgewings (Staatskennisgewing R327, R325 en R324), is die twee aansoeke om OM vir die FV-sonkragaanlegte onderhewig aan die voltooiing van Bestekopname-/OIE-prosesse. Daarbenewens is die twee aansoeke om OM vir die Vrede Roosterkonneksie en Rondavel Roosterkonneksie elk onderhewig aan die voltooiing van 'n Basiese Evalueringsproses (BE). Elke aansoek moet gerugsteun word deur omvattende, onafhanklike omgewingstudies wat ingevolge die OIE-regulasies, 2014 (soos gewysig) onderneem word.

'n OIE is 'n doeltreffende beplannings- en besluitnemingswerktuig. Dit bring mee dat potensiële omgewingsverwante gevolge wat voortspruit 'n beoogde aktiwiteit, geïdentifiseer en na behore tydens die oprigtings-, bedryfs- en uitbedryfstellingsfase van ontwikkeling bestuur word. Dit bied ook 'n geleentheid vir die projekaansoeker om vooraf gewaarsku te wees van potensiële omgewingskwessies en maak voorsiening vir die oplossing van kwessies wat geïdentifiseer en as deel van die OIE-proses oor verslag gedoen is, en bied ook die geleentheid vir dialoog tussen sleutelbelanghebbers en belangstellende en geaffekteerde partye (B&GP's).

Savannah Environmental is aangestel as onafhanklike omgewingskonsultant wat verantwoordelik is vir die bestuur van die aparte aansoeke om OM en om die stawende OIE-proses te onderneem wat vereis word om alle potensiële omgewingsimpakte wat verband hou met die projekte wat hierbo uiteengesit is, te identifiseer en te evalueer, en om gepaste versagtings- en bestuursmaatreëls aan die hand te doen wat in die Omgewingsbestuursprogramme (OBPr'e) vervat moet word.

Wat is die potensiële omgewingsimpakte wat verband hou met die beoogde projekte?

Die ontwikkelingsgebied en die roosterkonneksiekorridors sal deur onafhanklike omgewingspesialiste geëvalueer word om die potensiaal vir omgewingsimpakte te identifiseer. Spesialisstudies wat as deel van die OIE-prosesse beoog word, sluit die onderstaande in.

Hierdie studies het die volgende aspekte van die projekte geëvalueer:

- Biodiversiteit – sluit ekologie, fauna en flora in en evalueer die potensiële impak en verwante versteuring van plant egroei op die biodiversiteit (insluitende kritiese biodiversiteitsgebiede en breëskaalprosesse.
- Vleiland en varswaterkenmerke – sluit 'n evaluering van impak en gepaardgaande versteuring van dreineringslyne, riviere en vleilande op 'n breë- en fynskaal in.
- Avifauna – sluit 'n evaluering van impakte op avifauna habitats en sensitiewe kenmerke in.
- Grond en landboupotensiaal – sluit grondsoorte in en evalueer die wesenlikheid van verlies aan landbou grond en gronddegradasie en/of erosie.
- Erfenis (argeologie en paleontologie) – sluit argeologie en paleontologie in en evalueer die potensiële versteuring of vernietiging van erfenister reine en fossiele tydens die konstruksiefase weens opgrawingsbedrywighede.
- Visueel – sluit die visuele gehalte van die gebied in en evalueer die impak van FV-sonkragaanlegte en die rooster konneksie-oplossing op die estetika in die gebied.
- Maatskaplik – evalueer die positiewe en negatiewe maatskaplike impakte.

Spesialisstudies sal toegelig word deur bestaande inligting, vorige ervaring in die gebied, 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 Deelnameproses

Die deel van inligting vorm die grondslag van die openbare deelnameproses en bied B&GP's die geleentheid om aktief by die OIE-prosesse betrokke te raak. Kommentaar en insette van B&GP's word aangemoedig ten einde te verseker dat oorweging aan potensiële impakte regdeur die OIE-prosesse geskenk word. Die openbare deelnameproses poog om te verseker dat:
- inligting wat al die tersaaklike feite met betrekking tot die aansoeke bevat, aan B&GP's beskikbaar gestel word vir insae;
- deelname deur B&GP's op so 'n wyse gefasiliteer word dat hulle 'n redelike geleentheid gegun word om kom mentaar te lewer oor die beoogde projekte; en
- voldoende insaetydperke aan B&GP's gebied word om kommentaar te lewer oor die bevindinge van die Bestekopname/OIE- en/of Basiese Evalueringsverslae.

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Ten einde doeltreffende deelname te verseker, sluit die openbare deelnameprosesse in:

- die identifisering van B&GP's, insluitend geaffekteerde en naburige grondeienaars en -bewoners en tersaaklike staatsinstansies en die boekstawing van besonderhede in 'n databasis;
- die verwittiging van geregistreerde B&GP's van die aanvang van die OIE-prosesse en die verspreiding van die Agtergrondinligtingsdokument (AID);
- voorsiening van toegang aan geregistreerde partye tot 'n aanlyn skakelingsplatform vir belanghebbers, wat pro jekinligting en insette van belanghebbers in 'n enkele digitale platform sentraliseer;
- om B&GP's 'n geleentheid te bied om met die projekspan te skakel;
- die plasing van terreinkennisgewings by die geaffekteerde eiendomme;
- die plasing van 'n advertensie in 'n plaaslike koerant;
- die verwittiging van B&GP's van die vrystelling van die Verslae vir 'n 30-dae openbare insae- en kommentaartyd perk.

U verantwoordelikhede as 'n b&gp

Kragtens die OIE-regulasies, 2014 (soos gewysig) en die Openbare Deelnameriglyne, 2014, word u aandag gevestig op u verantwoordelikhede as 'n B&GP:

- Ten einde aan die OIE-prosesse deel te neem, moet u uself op die B&GP-databasis registreer.
- U moet toesien dat enige kommentaar met betrekking tot die beoogde projekte binne die gestipuleerde tydsraamwerke ingedien word.
- U moet enige regstreekse sake-, finansiële-, persoonlike- of ander belang wat u dalk in die goedkeuring of weiering van die aansoeke kan hê, bekend maak.

Hoe om betrokke te raak

1. Deur telefonies, per faks of per e-pos te reageer op die uitnodiging vir u betrokkenheid.

2. Deur die antwoordvorm aan die tersaaklike kontakpersoon terug te besorg.

3. Deur skakeling met die projekspan op die aanlyn skakelingsplatform vir belanghebbers tydens die OIE-prosesse.

4. Deur die omgewingskonsultant met navrae of kommentaar te kontak.

5. Deur oorsig oor en kommentaar op die Verslae te bied, en wel binne die gestipuleerde 30 dae insae- en kommentaar tydperke. Geregistreerde B&GP's sal outomaties in kennis gestel word van die vrystelling van die Bestekopname-/ OIE-verslae en/of Basiese Evalueringsverslae vir kommentaar, asook van die sluitingsdatums waarteen kommentaar ontvang moet word.

As u uself as 'n B&GP vir die beoogde projekte ag, moedig ons u aan om gebruik te maak van die geleenthede wat geskep word deur die openbare deelnameproses om kommentaar te lewer of daardie kwessies en knelpunte te opper wat u raak en/of vir u van belang is of waaroor u meer inligting versoek. U inset vorm 'n belangrike deel van die OIE-prosesse.

Deur die meegaande Antwoordvorm in te vul en aan ons terug te besorg, registreer u uself outomaties as 'n B&GP vir die beoogde projekte en verseker u dat kennis geneem sal word van die kommentaar, knelpunte of navrae wat u met betrekking tot die projekte opper.

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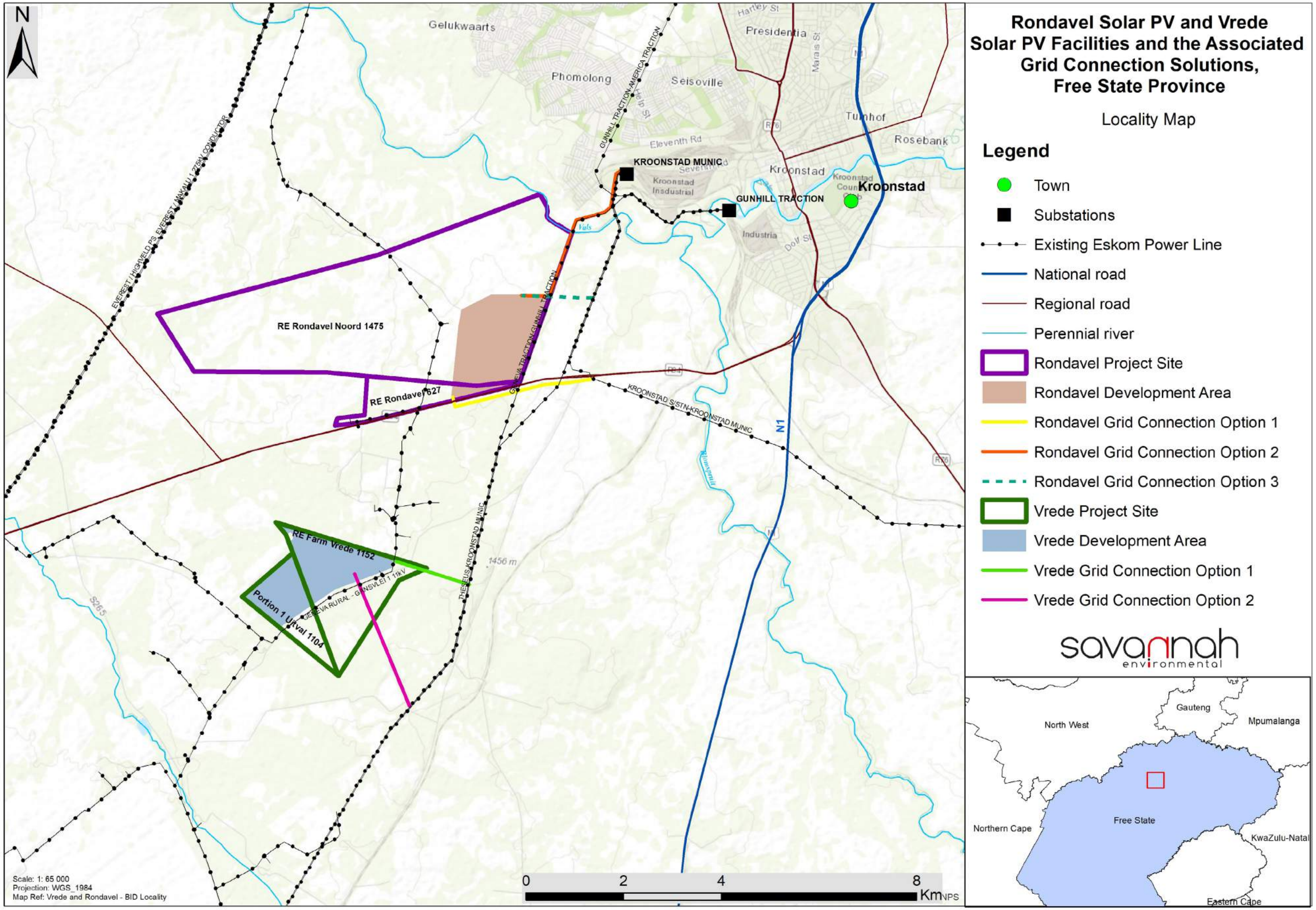
Figuur 1: Locality Map and Layout



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KOMMENTAAR EN NAVRAE

Rig alle kommentaar, navrae of antwoorde aan:

Savannah Environmental
Nicolene Venter
Posbus 148, Sunninghill, 2157
Selfoon: 060 978 8396 Tel: 011 656 3237
Faks: 086 684 0547
E-pos: publicprocess@savannahsa.com

Besoek
www.savannahSA.com
om projekdokumentasie te besigtig.