savannah environmental

BACKGROUND INFORMATION DOCUMENT (BID)

MARCH
2022

ENVIRONMENTAL IMPACT ASSESSMENT AND PUBLIC PARTICIPATION PROCESS

DEVELOPMENT OF FOUR SOLAR PV FACILITIES AND ASSOCIATED GRID CONNECTION INFRASTRUCTURE FOR THE PIXLEY PARK RENEWABLE ENERGY PROJECT NEAR DE AAR,

NORTHERN CAPE PROVINCE

A cluster of renewable energy facilities known as Pixley Park, which includes three Solar PV Facilities of up to 100MW and one solar PV facility up to 200 MW (up to 500MW combined) and associated grid connection infrastructure, is proposed by various Special Purpose Vehicles (SPVs) on the following farms:

» Portion 3 of Farm Carolus Poort No. 3;
» Portion 4 of Farm Riet Fountain No. 6;
» Portion 1 of Farm Riet Fountain No. 6;
» Remaining Extent of the Farm Wagt en Bittje No. 5.

The project site is located approximately 10km east of De Aar within the Emthanjeni Local Municipality and in the greater Pixley ka Seme District Municipality, Northern Cape Province. The projects will be known as Carolus Solar PV1, Fountain Solar PV1, Riet Fountain Solar PV1 and Wagt Solar PV1 respectively. The projects will all connect to the new Vetlaagte Main Transmission Substation (MTS) or the new Wag 'n Bietjie MTS.

The projects are proposed in response to the identified objectives of the national and provincial government and local and district municipalities to develop renewable energy facilities for power generation purposes. It is the developers' intention to bid the proposed projects under the Department of Mineral Resources and Energy's (DMRE's) Renewable Energy Independent Power Producer Procurement (REIPPP) Programme (or similar programme), or to make the projects available to private off-takers (e.g. mines) with the aim of evacuating the generated power into the national grid. This will aid in the diversification and stabilisation of the country's electricity supply, in line with the objectives of the Integrated Resource Plan (IRP), with Pixley Park set to inject up to 500MW into the national grid.

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 solar PV facilities which form part of the Pixley Park cluster, and their associated grid connection solutions.
» An overview of the Scoping and Environmental Impact Assessment (EIA) processes, Basic Assessment (BA) processes, and specialist studies being undertaken to assess the solar PV facilities and their associated grid connection solutions.
» Details of how you can become involved in the S&EIA and BA processes, receive information, or raise comments that may concern and/or interest you.

OVERVIEW OF THE PROPOSED PROJECTS

» Solar PV array comprising PV modules (potentially bifacial) and mounting structures, using single axis tracking technology
» Inverters and transformers
» Cabling between the panels
» Battery Energy Storage System (BESS)
» Laydown areas, construction camps, site offices
» 12m wide Access Road and entrance gate to the project site and switching station
» 6m wide internal distribution roads
» Operations and Maintenance Building, Site Offices, Ablutions with conservancy tanks, Storage Warehouse, workshop, Guard House
» Onsite 132kV IPP Collector Substation including the HV Step up transformer, MV Interconnection building.

The grid connection infrastructure for each project (which will be handed over to Eskom) will include:

» Onsite Switching Station (SwS), adjacent to each of the IPP collector substations (SS).
» A 132kV Overhead Power Line (OHPL) from each of the SwS connecting back to a Main Transmission Substation (MTS)
  o There is an MTS proposed on either the farm Vetlaagte (i.e. Vetlaagte MTS) or the farm Wag 'n Bietjie (i.e. Wag 'n Bietjie MTS)
  o Note: Two separate EA processes are currently underway to authorise the two MTS's and it is uncertain at this stage as to which MTS will be authorised and used to connect these projects.
» These projects may require an extension of the 132kV Busbar at the above mentioned MTS.
» These projects may require an extension of the 400kV Busbar at the above mentioned MTS
» These projects may require an additional 400/132kV Transformer to be added at the above mention MTS
» These projects may each require a new 132kV Feeder Bay at the above mentioned MTS

The Pixley Park cluster of solar PV facilities, including the project names, infrastructure details, properties affected by the proposed facilities, grid connection infrastructure and associated infrastructure are provided in the Table below:

Project name	Carolus Solar PV1 Facility	Fountain Solar PV1 Facility	Riet Fountain Solar PV1 Facility	Wagt Solar PV1 Facility
Affected properties (i.e., project site)	Portion 3 of the Farm Carolus Poort No. 3 (3/3)	Portion 1 of the Farm Riet Fountain No.6 (1/6)	Portion 4 of the Farm Riet Fountain No. 6 (4/6)	Remaining Extent of the FarmWagt en Bittje No. 5
Contracted capacity	100MW	100MW	100MW	200MW
Technology	Solar Photovoltaic	Solar Photovoltaic	Solar Photovoltaic	Solar Photovoltaic
On-site substation size and capacity	Approximately 100 m x 100m, 33/132kV on-site substation	Approximately 100 m x 100m, 33/132kV on-site substation	Approximately 100 m x 100m, 33/132kV on-site substation	Approximately 100 m x 100m, /132kV on-site substation
Battery Energy Storage System	**Footprint:** Approximately 6ha, to be located within the footprint of the on-site substation **Capacity:** 2500MWH	**Footprint**: Approximately 6ha, to be located adjacent to the on-site substation **Capacity:** 2500MWH	**Footprint:** Approximately 6ha, to be located adjacent to the on-site substation **Capacity:** 2500MWH	**Footprint**: Approximately 6ha, to be located adjacent to the on-site substation **Capacity:** 2500MWH
Access roads (main and internal)	The construction of a 12m wide access road and entrance gate to the project site and switching station as well as 6m wide internal distribution roads will be required	The construction of a 12m wide access road and entrance gate to the project site and switching station as well as 6m wide internal distribution roads will be required	The construction of a 12m wide access road and entrance gate to the project site and switching station as well as 6m wide internal distribution roads will be required	The construction of a 12m wide access road and entrance gate to the project site and switching station as well as 6m wide internal distribution roads will be required
Other associated infrastructure associated with each facility	» Inverters and transformers » Cabling between the panels » Battery Energy Storage System (BESS) » Laydown areas, construction camps, site offices, » Operations and Maintenance Building, Site Offices, Ablutions with conservancy tanks, Storage Warehouse, workshop, Guard House Each project will include all necessary electrical and auxiliary equipment required at the collector substation that serves that solar facility. This would include transformer, switchyard/bay, control building, fences etc.			

GRID CONNECTION INFRASTRUCTURE

Details of the proposed grid connection infrastructure and alternatives are provided in the Table below. Various connection options exist to ultimately connect each of the facilities to the Eskom Grid.

Corridor width (for assessment purposes)	Four (4) individual grid connection corridors (one corridor per PV facility) have been identified for the assessment and placement of the grid connection infrastructure. The entirety of the corridors is being assessed to ensure that any environmental sensitivities are avoided. Grid connection infrastructure proposed within these corridors includes: » Onsite Switching Station (SwS), adjacent to each of the IPP collector substations (SS). » A 132kV Overhead Power Line (OHPL) from each of the SwS connecting back to a Main Transmission Substation (MTS) o There is a MTS proposed on either the farm Vetlaagte (i.e. Vetlaagte MTS) or the farm Wag 'n Bietjie (i.e. Wag 'n Bietjie MTS) o Note: Two separate EA processes are currently underway to authorise the two MTS's and it is uncertain at this stage as to which MTS will be authorised and used to connect these projects. » These projects may require an extension of the 132kV Busbar at the above mentioned MTS. » These projects may require an extension of the 400kV Busbar at the above mentioned MTS » These projects may require an additional 400/132kV Transformer to be added at the above mention MTS » These projects may each require a new 132kV Feeder Bay at the above mentioned MTS
Power line capacity	132kV (single- or double-circuit)
Tower height	Up to 32m
Power line servitude width	Up to 40m
Development footprint of each Collector Substation	100m x 100m
Capacity of the Collector Substation	132kV
Affected properties	• Portion 3 of Farm Carolus Poort No.3, • Portion 1 of Farm Riet Fountain No.6, • Portion 4 of Farm Riet Fountain No.6, • Remaining Extent of the Farm Wagt en Bittje No 5, • Remaining Extent of the Farm Wag 'n Bietjie Annex C No.137, and • Remaining Extent of the Farm Vetlaagte No. 4.

OVERVIEW OF 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:

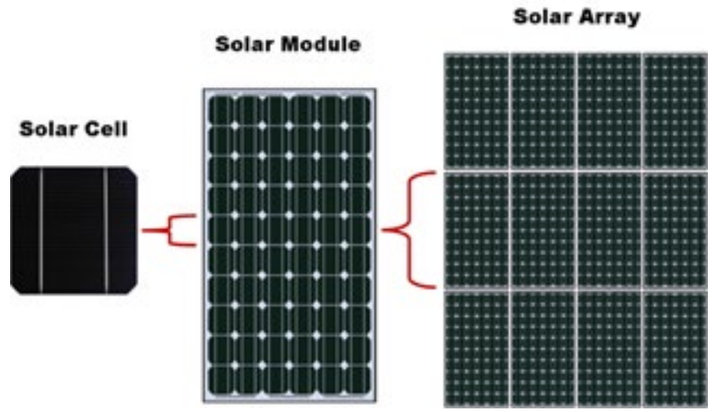


Figure 2: Overview of a PV cell, module, and array/panel (Source: pveducation.com)

A solar PV module is made up of individual solar PV cells connected, 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. The PV panels may be "bifacial" meaning they can utilise light from below, and the ground under the structures may be enhanced to maximise this reflection.

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.

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

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) 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 to receive the maximum amount of solar irradiation.

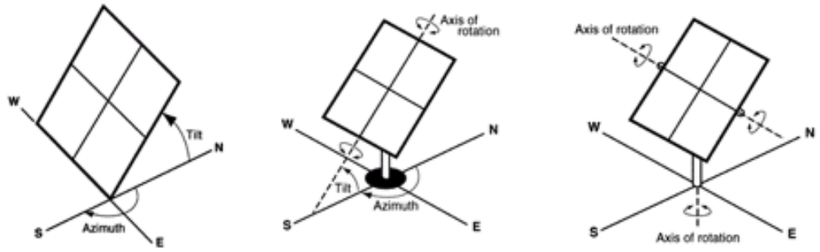


Figure 3: Overview of different PV tracking systems (from left to right: fixed-tilt, single-axis tracking, and double-axis tracking (Source: pveducation.com)

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

Battery Energy Storage System (BESS)

The need for a BESS stem from the fact that electricity is only produced by the Renewable Energy Facility while the sun is shining, while the peak demand may not necessarily occur during the daytime. Therefore, the storage of electricity and supply thereof during peak-demand will mean that the facility is more efficient, reliable and electricity supply more constant.

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 BESS area: 6ha.
» Proposed capacity of battery storage: 2500MWh.
» Proposed technology to be used: Lithium-ion batteries (LFP/NMC or others) (Li-Ion), Lithium capacitors/Electro-chemical capacitors (LiC), Redox-flow batteries (RFB) and/or Sodium Sulphur batteries (NaS).
» 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 applicant requires Environmental Authorisation (EA) from the National Department of Forestry, Fisheries and the Environment (DFFE), in consultation with the Department of Agriculture, Environmental Affairs, Land Reform and Rural Development, Northern Cape Province, 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). A combined eight (8) applications for Environmental Authorisation (EA) are currently being pursued as follows:

» Environmental Impact Assessments for four (4) solar PV facilities; and
» Basic Assessments for four (4) Electrical Grid Infrastructures.

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). As the projects are located close to one another in the same area, a consolidated public consultation process will be undertaken considering all projects detailed above.

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:

- Biodiversity Impact Assessment – includes ecology, fauna and flora and assesses the potential impact and the associated disturbance of vegetation on the biodiversity of the area (including critical biodiversity areas and broad-scale processes).
- Wetland and freshwater Impact Assessment – includes an assessment of impacts and associated disturbance to drainage lines, rivers, and wetlands at a broad and fine scale.
- Avifauna Impact Assessment – includes pre-construction monitoring in terms of the relevant guidelines and assesses the impact on avifaunal habitats and sensitive species.
- Soils and Agricultural Potential Assessment – includes land types and assesses the significance of loss of agricultural land and soil degradation and/or erosion.
- Heritage Impact Assessment (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 Impact Assessment – 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 Impact Assessment – which assesses the positive and negative social impacts associated with the construction and operation of the PV facilities and associated grid connection solution.
- Traffic Impact Assessment – assesses the impact of the developments on traffic and road networks in the area, specifically during the construction phase.

Site-specific studies will be undertaken to assess the potential impact of the proposed development, to delineate areas of sensitivity within the affected farm portions, assess impacts associated with the projects and make recommendations regarding avoidance, management, and mitigation of impacts. Studies will be informed by available information and detailed field investigations undertaken in accordance with the relevant guidelines and protocols. Once the constraining environmental factors have been determined, the layouts for the proposed facilities can be determined and presented in the EIA reporting.

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 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, Report

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

- Identifying I&APs, including affected and adjacent landowners and occupiers of land, and relevant Organs of State, and recording details within a database.
- Notifying I&APs of the commencement of the EIA processes in the local printed media and distributing this Background Information Document (BID) to registered I&APs.
- 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 and in the study area.
- Placing an advertisement in a local newspaper and using a local radio station (where available).
- Notifying I&APs of the release of the Reports for review and comment, meetings to be held and the closing dates by which comments must be received.
- Providing an opportunity to engage with the project team via appropriate virtual platform (to reduce the risks associated with COVID-19) or telephone.

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:

- To participate in the EIA processes, you must register yourself on the I&AP database by completing the Registration and Comment Form included in the BID.
- 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.
- You must ensure that any comments regarding the proposed projects are submitted within the stipulated timeframes.

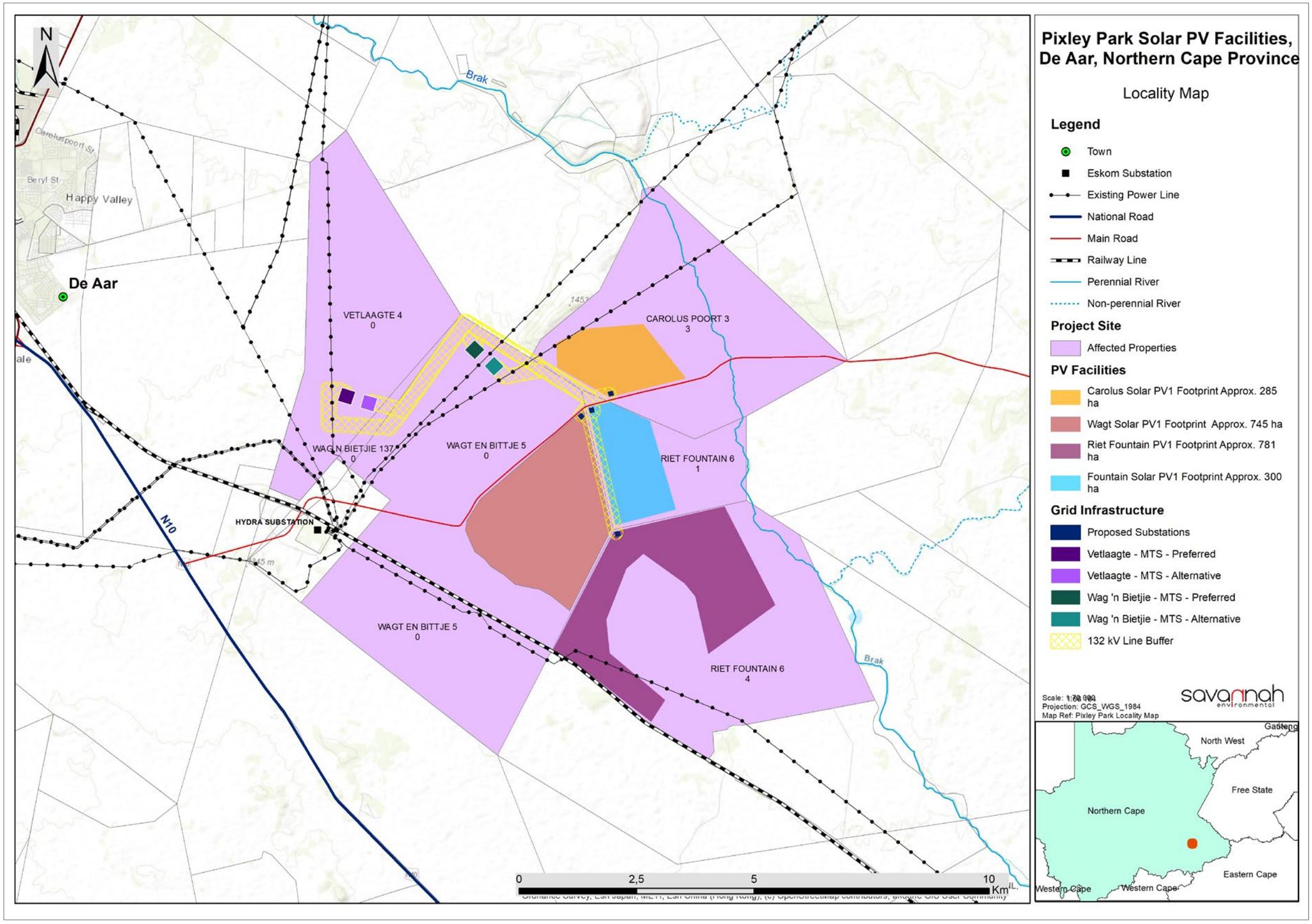
HOW TO BECOME INVOLVED

- By responding by phone, fax, or e-mail to the invitation for your involvement.
- By returning the reply form to the relevant contact person.
- By engaging with the project team during the EIA processes.
- By contacting the environmental consultant with queries or comments.
- By reviewing and commenting on the reports within the stipulated review and comment periods.

If you consider yourself and 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. Please note that all comments received will be included in the project documentation. This may include personal information.

Figure 1: Locality map of the Pixley Park Renewable Energy Project



COMMENTS AND QUERIES

Direct all comments, queries or responses to:

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

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

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ENVIRONMENTAL IMPACT ASSESSMENTS AND PUBLIC PARTICIPATION PROCESS

DEVELOPMENT OF FOUR SOLAR PV FACILITIES AND ASSOCIATED GRID CONNECTION INFRASTRUCTURE FOR THE PIXLEY PARK RENEWABLE ENERGY PROJECT NEAR DE AAR, NORTHERN CAPE PROVINCE
(DFFE Ref. Nos.: To be Issued)

Registration & Comment Form

March 2022

Return completed registration and comment form to: ***Nicolene Venter*** *of* ***Savannah Environmental***
Phone: *011 656 3237* **/** ***Mobile (incl. 'please call me'):*** *060 978 8396* **/** ***Fax:*** *086 684 0547*
E-mail: *publicprocess@savannahsa.com* ***Postal Address:*** *PO Box 148, Sunninghill, 2157*

Your registration as an interested and/or affected party will be applicable for this project only and your contact details provided are protected by the POPI Act of 2013

Please provide your complete contact details:

Name & Surname:			
Organisation:			
Designation:			
Postal Address:			
Telephone:		Fax:	
Mobile:			
E-mail:			

I would you like to register as an interested and affected party (I&AP) on the following projects' database (please tick the relevant box)

Carolus Solar PV1		Fountain Solar PV1		Wagt Solar PV1		Rietfontein Solar PV1	

In terms of EIA Regulations, 2014, as amended, Regulation 43(1), you are required to register as an I&AP to receive further correspondence regarding the BA process for the projects and to disclose any direct business, financial, personal or other interest which you may have in the approval or refusal of the application (add additional pages if necessary)**:**

Please list your comments regarding your project selection above (add additional pages if necessary)**:**

Please provide contact details of any other persons who you regard as a potential interested or affected party:

Name & Surname:	
Postal Address:	
Telephone:	
Mobile:	
E-mail:	

savannah environmental

AGTERGRONDINLIGTINGS DOKUMENT

MAART
2022

OMGEWINGSIMPAKEVALUERING EN OPENBARE DEELNAMEPROSES

ONTWIKKELING VAN VIER FV-SONKRAGAANLEGTE EN VERWANTE ROOSTERKONNEKSIE-INFRASTRUKTUUR VIR DIE PIXLEY-PARK HERNUBARE KRAGPROJEK NABY DE AAR,

NOORD-KAAPPROVINSIE

'n Groepering hernubare kragaanlegte, naamlik Pixley-park, met die insluiting van drie FV-sonkragaanlegte van hoogstens 100 MW en een FV-sonkragaanleg van hoogstens 200 MW (altesaam hoogstens 500 MW) en verwante roosterkonneksie-infrastruktuur, word aan die hand van verskeie Spesialedoelvoertuie (SPV's) op die volgende plase beoog:

» Gedeelte 3 van die plaas Carolus Poort No. 3;
» Gedeelte 4 van die plaas Riet Fountain No. 6;
» Gedeelte 1 van die plaas Riet Fountain No. 6; en
» Restant van die plaas Wagt en Bittje No. 5.

Die projekterrein is sowat 10 km oos van De Aar in die Emthanjeni Plaaslike Munisipaliteit en in die Pixley ka Seme Distriksmunisipaliteit en omstreke, Noord-Kaapprovinsie. Die projekte sal onderskeidelik die Carolus FV1-, Fountain FV1-, Riet Fountain FV1- en Wagt FV1-sonkragaanleg genoem word. Die projekte sal almal aansluit by die nuwe Vetlaagte Hooftransmissiesubstasie (HTS) of by die nuwe Wag 'n Bietjie HTS.

Die projekte word beoog in antwoord op die nasionale en provinsiale regering en plaaslike en distriksmunisipaliteite se geïdentifiseerde doelwitte om hernubare kragaanlegte vir kragopwekkingsdoeleindes te ontwikkel. Die ontwikkelaars is van voorneme om die beoogde projekte aan te bied ingevolge die Departement van Minerale Hulpbronne en Energie (DMHE) se Verkrygingsprogram vir Onafhanklike Hernubare Kragprodusente (REIPPP, of eenderse program), of om die projekte beskikbaar te stel vir privaatafsetters (bv. myne) met die doel om die krag wat opgewek word, by die nasionale kragnet in te voer. Dit sal bydra tot die diversifisering en stabilisering van die land se kragvoorsiening, in ooreenstemming met die doelwitte van die Geïntegreerde Hulpbronplan (GHP), met Pixley-park wat hoogstens 500 MW by die nasionale netwerk sal kan invoer.

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 FV-sonkragaanlegte wat deel vorm van die Pixley-park-groepering en sy verwante roosterkonneksie-oplossings;
» 'n oorsig van die Bestekopname- en Omgewingsimpakevalueringsprosesse (OIE-prosesse), Basiese Evalueringsprosesse (BE-prosesse) en spesialisstudies wat onderneem word om die FV-sonkragaanlegte en hul verwante roosterkonneksie-oplossings te evalueer; en
» besonderhede van hoe u by die B&OIE- en BE-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 BEOOGDE PROJEKTE

'n Ontwikkelingsvoetspoor van sowat 2 100 ha is in die breër projekterrein (sowat 8 200 ha in omvang) geïdentifiseer vir die ontwikkeling van die Pixley-park-aanlegte. Infrastruktuur wat met elk van die FV-sonkragaanlegte verband hou, sal die volgende insluit:

» FV-sonkragreeks bestaande uit FV-modules (moontlik tweevlak) en monteerstrukture wat enkelas-naspoortegnologie gebruik
» Wisselrigters en transformators
» Kabels tussen die panele
» Batterykragbergingstelsel (BESS)
» Stapelwerfgebiede, konstruksiekampe, terreinkantore
» Toegangspad met 'n breedte van 12 m en ingangshek na die projekterrein en skakelstasie toe
» Interne verspreidingspaaie met 'n breedte van 6 m
» Bedryfs- en instandhoudingsgebou, terreinkantore, ablusiegeriewe met opgaartenks, stoorpakhuis, werkswinkel, waghuis
» Interne 132 kV IPP-kollektorsubstasie, met insluiting van die HS-verhogingstransformator, MS-interkonneksiegebou.

Die roosterkonneksie-infrastruktuur vir elke projek (wat aan Eskom oorhandig sal word) sal die volgende insluit:

» Interne Skakelstasie (SwS) langs elk van die IPP-kollektorsubstasies (SS)
» 'n 132 kV Oorhoofse Kraglyn (OHKL) vanaf elk van die SwS'e af, wat terugverbind aan 'n Hooftransmissiesubstasie (HTS)
  o 'n HTS word beoog op hetsy die plaas Vetlaagte (d.i. Vetlaagte HTS) of op die plaas Wag 'n Bietjie (d.i. Wag 'n Bietjie HTS)
  o Let wel: Twee aparte OM-prosesse is tans aan die gang om die twee HTS'e te magtig en dit is tans onseker watter HTS gemagtig en gebruik gaan word om hierdie projekte te verbind
» Hierdie projekte kan 'n vergroting van die 132 kV Geleistam by die bogenoemde HTS vereis
» Hierdie projekte kan 'n vergroting van die 400 kV Geleistam by die bogenoemde HTS vereis
» Hierdie projekte kan die toevoeging van 'n bykomende 400/132 kV Transformator by die bogenoemde HTS vereis
» Hierdie projekte kan elkeen 'n nuwe 132 kV Voerdervak by die bogenoemde HTS vereis.

Die Pixley-park-groepering van FV-sonkragaanlegte, met insluiting van die projekname, infrastruktuur-besonderhede, eiendomme wat deur die beoogde aanlegte geraak word, roosterkonneksie-infrastruktuur en verwante infrastruktuur word verskaf in die tabel hieronder:

FV-SONKRAGAANLEGTE:

Projeknaam	Carolus FV1-sonkragaanleg	Fountain FV1-sonkragaanleg	Riet Fountain FV1-sonkragaanleg	Wagt FV1-sonkragaanleg
Geaffekteerde eiendomme (d.i. projekterrein)	Gedeelte 3 van die plaas Carolus Poort No. 3	Gedeelte 1 van die plaas Riet Fountain No. 6	Gedeelte 4 van die plaas Riet Fountain No. 6	Restant van die plaas Wagt en Bittje No. 5
Gekontrakteerde vermoë	Hoogstens 100 MW	Hoogstens 100 MW	Hoogstens 100 MW	Hoogstens 200 MW
Tegnologie	Fotovoltaïese sonkrag	Fotovoltaïese sonkrag	Fotovoltaïese sonkrag	Fotovoltaïese sonkrag
Grootte en vermoë van interne substasie	Sowat 100 m x 100 m, 33/132 kV interne substasie	Sowat 100 m x 100 m, 33/132 kV interne substasie	Sowat 100 m x 100 m, 33/132 kV interne substasie	Sowat 100 m x 100 m, 33/132 kV interne substasie
Batterykrag-bergingstelsel	**Voetspoor:** **Sowat 6 ha wat langs die interne substasie geleë sal wees** **Vermoë: 2 500 MWH**	**Voetspoor:** **Sowat 6 ha wat langs die interne substasie geleë sal wees** **Vermoë: 2 500 MWH**	**Voetspoor:** **Sowat 6 ha wat langs die interne substasie geleë sal wees** **Vermoë: 2 500 MWH**	**Voetspoor:** **Sowat 6 ha wat langs die interne substasie geleë sal wees** **Vermoë: Up to 200MW**
Toegangspaaie (hoof- en interne paaie)	Die bou van 'n toegangspad met 'n breedte van 12 m en 'n toegangshek na die projekterrein en skakelstasie toe, sowel as interne verspreiding-spaaie met 'n breedte van 6 m, sal benodig word	Die bou van 'n toegangspad met 'n breedte van 12 m en 'n toegangshek na die projekterrein en skakelstasie toe, sowel as interne verspreiding-spaaie met 'n breedte van 6 m, sal benodig word	Die bou van 'n toegangspad met 'n breedte van 12 m en 'n toegangshek na die projekterrein en skakelstasie toe, sowel as interne verspreiding-spaaie met 'n breedte van 6 m, sal benodig word	Die bou van 'n toegangspad met 'n breedte van 12 m en 'n toegangshek na die projekterrein en skakelstasie toe, sowel as interne verspreiding-spaaie met 'n breedte van 6 m, sal benodig word
Ander verwante infrastruktuur wat met elke aanleg verband hou	» Wisselrigters en transformators » Kabels tussen die panele » Batterykragbergingstelsel (BESS) » Stapelwerfgebiede, konstruksiekampe, terreinkantore » Bedryfs- en instandhoudingsgebou, terreinkantore, ablusiegeriewe met opgaartenks, stoorpakhuis, werkswinkel, waghuis Elk van die projekte sal alle nodige elektriese en hulptoerusting insluit wat by die kollektorsubstasie benodig word wat daardie sonkragaanleg bedien. Dit sal 'n transformator, skakelwerf/-vak, beheergebou, heinings, ens., insluit.			

ROOSTERKONNEKSIE-INFRASTRUKTUUR

Besonderhede van die beoogde roosterkonneksie-infrastruktuur en alternatiewe word verskaf in die tabel hieronder. Daar is verskeie konneksie-opsies wat elk van die aanlegte uiteindelik met Eskom se Kragnet sal verbind.

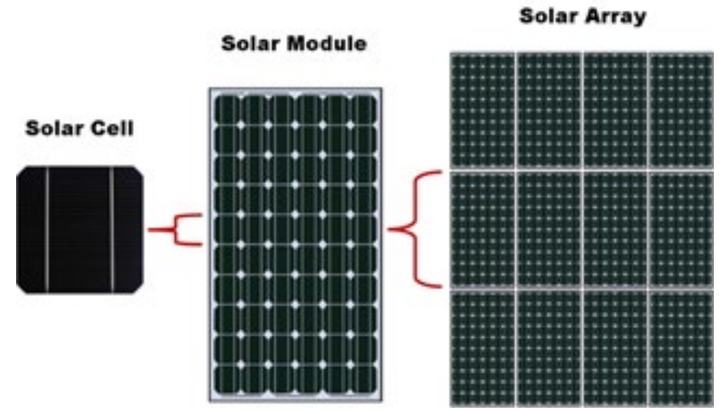
Korridorbreedte (vir evalueringsdoeleindes)	Vier (4) individuele roosterkonneksiekorridors (een korridor per FV-aanleg) is vir die evaluering en plasing van die roosterkonneksie-infrastruktuur geïdentifiseer. Al die korridors word geëvalueer om te verseker dat enige omgewingsensitiewe gebiede vermy word. Roosterkonneksie-infrastruktuur wat in hierdie korridors beoog word, sluit die volgende in: » Interne Skakelstasie (SwS) langs elk van die IPP-kollektorsubstasies (SS) » 'n132 kV Oorhoofse Kraglyn (OHKL) vanaf elk van die SwS'e, wat terugverbind aan 'n Hooftransmissiesubstasie (HTS) o 'n HTS word beoog op hetsy die plaas Vetlaagte (d.i. Veltaagte HTS) of op die plaas Wag 'n Bietjie (d.i. Wag 'n Biejtie HTS) o Let wel: Twee aparte OM-prosesse is tans aan die gang om die twee HTS'e te magtig en dit is tans onseker watter HTS gemagtig en gebruik gaan word om hierdie projekte te verbind » Hierdie projekte kan 'n vergroting van die 132 kV Geleistam by die bogenoemde HTS vereis » Hierdie projekte kan 'n vergroting van die 400 kV Geleistam by die bogenoemde HTS vereis » Hierdie projekte kan die toevoeging van 'n bykomende 400/132 kV Transformator by die bogenoemde HTS vereis » Hierdie projekte kan elkeen 'n nuwe 132 kV Voerdervak by die bogenoemde HTS vereis.
Kraglyn se vermoë	132 kV
Mashoogte	Hoogstens 32 m
Kraglynserwituut se breedte	Hoogstens 40 m
Elke Kollektorsubstasie se ontwikkelingsvoetspoor	100 m x 100 m
Kollektorsubstasie se vermoë	132 kV
Geaffekteerde eiendomme	» Gedeelte 3 van die plaas Carolus Poort No. No.3; » Gedeelte 1 van die plaas Riet Fountain No. No.6; » Gedeelte 4 van die plaas Riet Fountain No. No.6; » Restant van die plaas Wagt en Bittje No. 5; » Restant van die plaas Wag 'n Bietjie Anneks C No. 137; en » Restant van die plaas Vetlaagte No. 4.

OORSIG VAN FV-SONKRAGTEGNOLOGIE

Sonkragaanlegte 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 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-sonkragmodule 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. Die FV-panele kan dalk "tweevlakkig" wees, wat beteken dat hulle lig van onder af kan benut en die grond onder die strukture kan aangepas word om hierdie weerkaatsing te maksimaliseer.

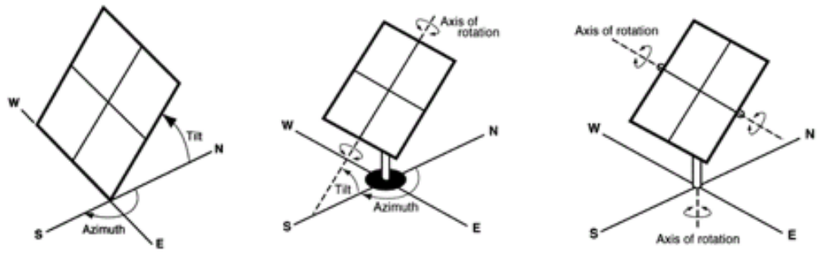
Wisselrigters

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) om 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 3: Oorsig van verskillende FV-naspoorstelsels (van links na regs: vastehoek, enkel- en dubbelasnasporing (Bron: pveducation.com)

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

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 nasionale kragnet in te voer, wat bekom sal word ingevolge hetsy die Verkrygingsprogram vir Hernubare Krag van Onafhanklike Kragprodusente (REIPPPP), ander staatsbeheerde verkrygingsprogramme of vir verkoop aan privaat entiteite, indien nodig.
- BESS se beoogde voetspoor: 6 ha.
- Batterybergingstelsel se beoogde vermoë: 2 500 MWh.
- Beoogde tegnologie wat gebruik gaan word: Litium-ioonbatterye (LFP/NMC of ander) (Li-Ion), litiumkapasitors/elektrochemiese kapasitors (LiC), Redoks-vloeibatterye (RFB) en/of Natriumswawelbatterye (NaS).
- Soorte batterye wat oorweging sal geniet: Vastestaat- en Redoks-vloeibatterye.

OMGEWINGSIMPAKEVALUERINGSPROSES

In ooreenstemming met die OIE-regulasies, 2014 (soos gewysig), wat ooreenkomstig Artikel 24(5) van die Nasionale Wet op Omgewingsbestuur (Wet 107 van 1998) (NEMA) gepubliseer is, benodig die applikant Omgewingsmagtiging (OM) van die Nasionale Departement van Bosbou, Visserye en die Omgewing, (DBVO), in oorleg met die Noord-Kaapprovinsie se Departement van Landbou, Omgewingsake, Grondhervorming en Landelike Ontwikkeling vir die ontwikkeling van die beoogde projekte.

Ooreenkomstig Artikel 24(5) van NEMA, die OIE-regulasies, 2014 (soos gewysig) en Lyskennisgewing (Staatskennisgewing R327, R325 en R324) is altesaam agt (8) aansoeke om Omgewingsmagtiging (OM) tans in die aansoekproses, naamlik:

- Omgewingsimpakevaluerings vir vier (4) FV-sonkragaanlegte; en
- Basiese Evaluerings vir vier (4) Elektriese Kragnetinfrastrukture.

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 uit '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 die 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. Aangesien die projekte naby mekaar in dieselfde gebied geleë is, sal 'n gekonsolideerde openbare konsultasieproses, met inagneming van al die projekte wat hierbo uiteengesit is, onderneem 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.

- Biodiversiteit-impakevaluering – sluit ekologie, fauna en flora in en evalueer die potensiële impak en verwante versteuring van plantegroei op die gebied se biodiversiteit (insluitende kritiese biodiversiteitsgebiede en breëskaalprosesse).
- Vleiland en varswater-impakevaluering – sluit 'n evaluering van impakte en gepaardgaande versteuring van dreineringslyne, riviere en vleilande op 'n breë- en fynskaal in.
- Avifauna-impakevaluering – wat insluit monitering voor oprigting ooreenkomstig die tersaaklike riglyne en die impak op avifauna se gewoontes en sensitiewe spesies evalueer.
- Potensiële evaluering van grondsoorte en landboupotensiaal – sluit grondsoorte in en evalueer die wesenlikheid van verlies aan landbougrond en gronddegradasie en/of erosie.
- Erfenis-imkapevaluering (argeologie en paleontologie) – wat argeologie en paleontologie insluit en die potensiële versteuring of vernietiging van erfenisterreine en fossiele tydens die konstruksiefase weens opgrawingsbedrywighede evalueer.
- Visuele impakevaluering – wat die visuele gehalte van die gebied insluit en die impak van die FV-sonkragaanlegte en die roosterkonneksie-oplossing op die estetika in die gebied evalueer.
- Maatskaplike impakevaluering – wat die positiewe en negatiewe maatskaplike impakte evalueer wat verband hou met die konstruksie en bedryf van die FV-aanlegte en verwante roosterkonneksie-oplossing .
- Verkeersimpakevaluering – evalueer die impak van die ontwikkelings op verkeer en padnetwerke in die gebied, spesifiek tydens die konstruksiefase.

Terreinspesifieke studies sal onderneem word om die potensiële impak van die beoogde ontwikkeling te evalueer, om gebiede van sensitiwiteit in die geaffekteerde plaasgedeeltes te delinieer, om impakte te evalueer wat verband hou met die projekte en om aanbevelings met betrekking tot vermyding, bestuur en versagting van impakte te maak. Studies sal toegelig word deur beskikbare inligting en gedetailleerde veldondersoeke wat ooreenkomstig die tersaaklike riglyne en protokolle onderneem word. Sodra die beperkende omgewingsfaktore bepaal is, kan die uitleg vir die beoogde aanlegte bepaal word en in die OIE se verslagdoening voorgehou word.

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 potensiële impakte regdeur die OIE-prosesse oorweging geniet.

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 kommentaar 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 BE-verslag.

Om doeltreffende deelname te verseker, sluit die openbare deelnameprosesse in:

» die identifisering van B&GP's, insluitende geaffekteerde en naburige grondeienaars en -bewoners en tersaaklike staatsinstansies en die boekstawing van besonderhede in 'n databasis;
» die verwittiging van B&GP's van die aanvang van die OIE-prosesse in die plaaslike drukkersmedia en die verspreiding van hierdie Agtergrondinligtingsdokument (AID) aan geregistreerde B&GP's;
» die voorsiening van toegang aan geregistreerde partye tot 'n aanlyn skakelingsplatform vir belanghebbers, wat projekinligting 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 en in die studiegebied;
» die plasing van 'n advertensie in 'n plaaslike koerant en deur 'n plaaslike radiostasie te gebruik (waar beskikbaar);
» om B&GP's in kennis te stel van die vrystelling van die verslae vir oorsig en kommentaar, vergaderings wat gehou moet word en die sluitingsdatums waarteen kommentaar ontvang moet word; en
» om 'n geleentheid te bied om via 'n gepaste virtuele platform (om die risiko's wat met COVID-19 verband hou, te verminder) of telefonies met die projekspan te skakel.

U VERANTWOORDELIKHEDE AS 'N B&GP

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

» Om aan die OIE-prosesse deel te neem, moet u uself op die B&GP-databasis registreer deur die Registrasie- en Kommentaarvorm wat by die AID ingesluit is, is te vul.
» 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.
» U moet toesien dat enige kommentaar met betrekking tot die beoogde projekte binne die gestipuleerde tydsraamwerke ingedien word.

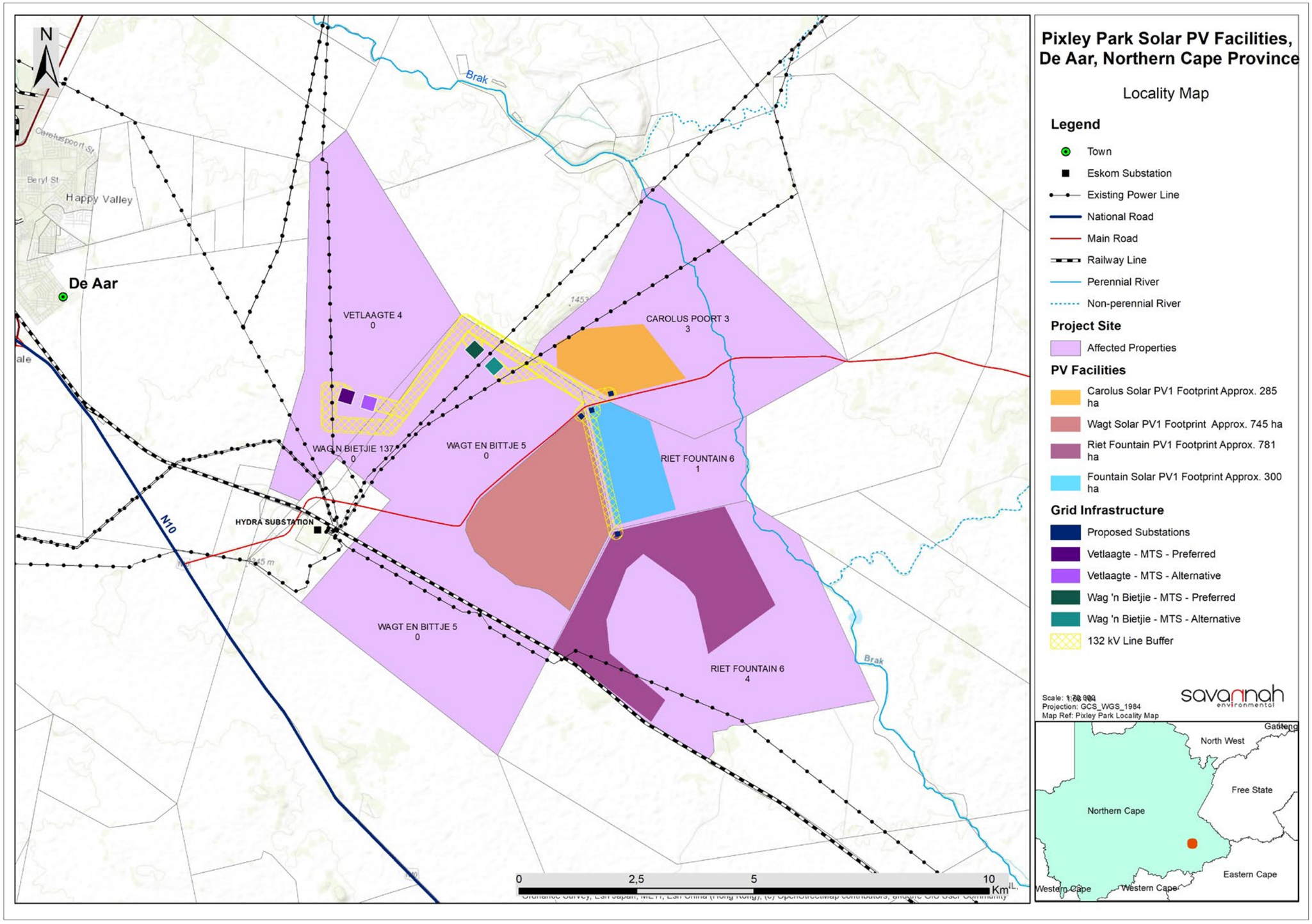
HOE OM BETROKKE TE RAAK

» Deur telefonies, per faks of per e-pos te reageer op die uitnodiging vir u betrokkenheid.
» Deur die Antwoordvorm aan die tersaaklike kontakpersoon terug te besorg.
» Deur tydens die OIE-prosesse met die projekspan te skakel.
» Deur die omgewingskonsultant met navrae of kommentaar te kontak.
» Deur oorsig oor en kommentaar op die verslae te bied, en wel binne die gestipuleerde oorsig- en kommentaartydperk.

As u uself as 'n B&GP vir die beoogde projekte ag, moedig ons u aan om gebruik te maak van die geleenthede wat deur die openbare deelnameproses geskep word om kommentaar te lewer op of kwessies en knelpunte te opper wat u raak en/of vir u van belang is of waaroor u meer inligting versoek. U insette 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. Let asseblief daarop dat alle kommentaar wat ontvang word, in die projek se dokumentasie vervat sal word. Dit kan persoonlike inligting insluit.

Figuur 4: Liggingskaart van die Pixley-Park Hernubare Kragprojek



KOMMENTAAR EN NAVRAE

Rig alle kommentaar, navrae of antwoorde aan:

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Besoek www.savannahSA.com om die aanlyn skakelingsplatform vir belanghebbers te besoek en om die projek se dokumentasie te besigtig.