

JUNIE 2012

OMGEWINGSIMPAKEVALUERINGSPROSES

VOORGESTELDE

HERNUBARE WIND- EN SONKRAGAANLEG OP 'N TERREIN SUID-WES VAN POFADDER

NOORD-KAAPROVINSIE

AGTERGRONDINLIGTINGSDOKUMENT



South Africa Mainstream Renewable Power Development (Edms.) Bpk. (Mainstream) stel die oprigting voor van 'n kommersiële hernubare kragaanleg wat uit beide 'n windkragkomponent en 'n fotovoltaiese sonkragkomponent bestaan, asook gepaardgaande infrastruktuur op 'n terrein sowat 22 km suidwes van Pofadder in die Noord-Kaapprovinsie. Op grond van 'n voorafbedryfbaarheidsontleding en 'n proses van terreinidentifikasie wat deur Mainstream onderneem is, is 'n gunstige gebied vir oorweging en evaluering deur 'n Omgewingsimpakevaluering (OIE) geïdentifiseer.

Die projek word op die volgende fasie voorgestel: Gedeelte 1 en die Restant van Plaas 209 (Poortje) en Gedeelte 1 en 2 van Plaas 212 (Namies Suid). Die terrein wat vir die aanleg voorgestel word, is in die Khai-Ma Plaaslike Munisipaliteit geleë. 'n Breër gebied van sowat 175 km² word oorweeg waarin die aanleg opgerig sal word. Die aard en omvang van hierdie aanleg word van naderby in hierdie Agtergrondinligtingsdokument (AID) ondersoek.

DOEL VAN HIERRDIE AGTERGRONDINLIGTINGSDOKUMENT

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

- » 'n oorsig van die voorgestelde wind- en sonkragaanleg;
- » 'n oorsig van die Omgewingsimpakevaluatingsproses en studies wat onderneem word om die potensiële impakte van die voorgestelde projek, beide positief en negatief, te evalueer; en
- » besonderhede van hoe u by die proses betrokke kan raak, inligting kan ontvang of vraagstukke kan opper wat u dalk kan raak en/of vir u van belang kan wees.

OORSIG VAN DIE VOORGESTELDE PROJEK

'n Ideale terrein is deur 'n tegniese uitvoerbaarheidstudie geïdentifiseer vir die oprigting van die voorgestelde hernubare kragaanleg met inagneming van gunstige klimaatstoestande (hernubare wind- en sonkragaanlegte is direk afhanglik van die gemiddelde windsnelheid en sonbestralingswaardes vir 'n spesifieke gebied), toegang tot die kragnet, toeganklikheid van die studiterrein, sowel as die topografie van die plaaslike terrein.

Die voorgestelde aanleg sal uit 'n kombinasie van die volgende tegnologieë bestaan:

- » Tot 500 windturbines (elke turbine tussen 1.5 MW en 4 MW in vermoë); en
- » 'n reeks van hetsy fotovoltaiese (FV) panele of konsentrerende fotovoltaiese (KFV) panele met 'n opwekkingsvermoë van tot 250 MW.

Ander infrastruktuur wat met die aanleg gepaard gaan, sluit in:

- » fondasies om die turbinetorings sowel as die FV panele te dra;
- » kabels tussen die projekkomponente, ondergronds gelê waar prakties moontlik;
- » 'n 400 kV substasie en 4 (vier) 132 kV satellietsubstasies om die roosterkonneksie deur 'n inlus-uitlusverbinding met Eskom se bestaande Aggenys-Aries 400 kV kraglyn wat oor die terrein loop moontlik te maak;
- » interne toegangspaaie; en
- » 'n werkswinkelgebied vir instandhouding en berging.

Die uiteindelike doel agter die ontwerp en uitleg van die aanleg is om die opwekking van elektrisiteit te maksimaliseer deur blootstelling aan die windhulpbron en sonbestraling, terwyl infrastruktuur-, bedryfs- en instandhoudingskostes, asook maatskaplike en omgewingsimpakte, tot 'n minimum beperk word. Die aanwending van wind- en sonkrag vir die opwekking van elektrisiteit kan as 'n nie-verbruikende benutting van natuurlike hulpbronne geag word, wat geen kweekhuisgasse vrystel nie. Die opwekking van hernubare krag dra by tot Suid-Afrika se elektrisiteitsopwekkingsmark wat deur steenkoolkragopwekking oorheers was.

HERNUBARE KRAGTEGOLOGIEË WAT VIR DI E PROJEK VOORGESTEL IS

Daar is verskeie hernubare kragtegoalogieë wat vir kragopwekking gebruik kan word. Hernubare kragtegoalogieë, wat windturbines en sonpanele insluit, bied 'n alternatief tot fossielbrandstowwe en verminder sodoende die hoeveelheid CO₂-emissies in die atmosfeer. Daar word aan die hand gedoen dat hierdie hernubare kragaanleg van beide windturbines en fotovoltaiese panele gebruik maak om elektrisiteit op te wek, want dan in die nasionale kragnet ingevoer sal word.

1. Windkragaanleg

'n Windkragaanleg bestaan uit verskeie windturbines wat aangewend word om die wind se kinetiese energie vas te vang. Die megaliese krag wat deur die rotasie van die lemme opgewek word, word aan die generator binne-in die nacelle oorgedra via 'n ratkas en dryfwerk. Die wind draai die lemme wat op hul beurt 'n as draai wat aan 'n generator gekoppel is en elektrisiteit opwek.

Windturbines bestaan normaalweg uit die volgende vier primêre komponente:

Die Fondasie

Elke turbine sal oor 'n betonfondasie beskik, waarop die basis van die windturbine ganker sal wees. Hierdie fondasies is tot sowat 2.5 m diep.

Die Toring

Die hoogte van die toring varieer tussen 80–120 m, afhangend van die soort turbine. Die toring is 'n hol struktuur wat toegang tot die nacelle (turbinehuis) bied ten einde instandhoudingsaktiwiteite uit te voer.

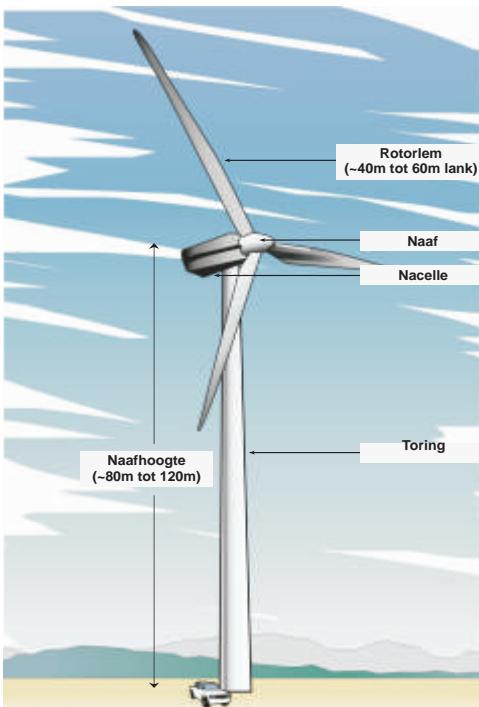
Die Nacelle (turbinehuis)

Die nacelle verwys na die beskermende omhulsel waarin die ratkas, generator en windsensor wat die windrigting identifiseer, aangetref word. Die nacelle het die vermoe om te draai ten einde te verseker dat die rotorlemme altyd na die wind gedraai is om die hoeveelheid elektrisiteit wat opgewek word, te maksimaliseer.

Die Rotor

Die rotor bestaan uit drie lemme en die naaf. Die rotorlemme is normaalweg tot 60 m lank.

Die hoeveelheid energie wat 'n turbine kan inspan, hang af van beide die windsnelheid en die lengte van die rotorlemme. Windturbines begin krag opwek teen windsnelhede van tussen 10–15 km/uur, met snelhede van tussen 45–60 km/uur wat benodig word vir volle kragbediening. Wanneer windsnelhede vlakke bereik wat die generator kan beskadig, skakel die turbine automaties af. 'n Turbine is ontwerp om met min instandhouding vir meer as 20 jaar ononderbroke te funksioneer.



Illustrasie van die komponente van 'n tipiese windturbine

2. Sonkragaanleg

Sonkragaanlegte, soos dié wat van FV panele gebruik maak, benut 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, om die elektrone sodoende in 'n hoër staat van energie te plaas om elektrisiteit op te wek. Die fotovoltaïese sonkragaanleg-komponent van die ontwikkeling sal na verwagting tot 250 MW opwekkingsvermoë kan akkommodeer. Hetsy FV of KFV en gepaardgaande nasporingsinfrastruktuur word vir hierdie terrein oorweeg.

FV sonkragaanlegte bestaan uit die volgende komponente:

Die Fotovoltaïese Sel

'n Fotovoltaïese (FV) sel bestaan uit silikon wat as halfgeleiер optree wat gebruik word om die fotovoltaïese effek voort te bring. Individuele FV selle word aanmekaar geskakel en agter 'n beskermende glaspaneel geplaas om 'n fotovoltaïese paneel te vorm.

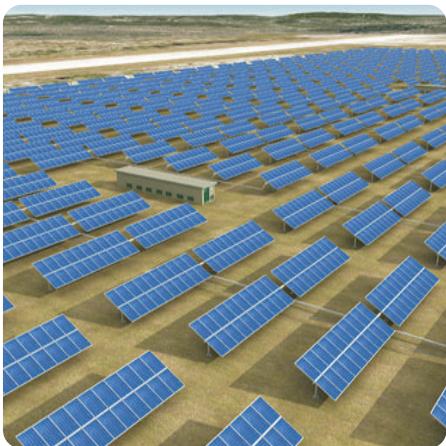
Die Wisselrigter

Die fotovoltaïese effek wek elektrisiteit in gelykstroom op, met die gevolg dat 'n wisselrigter gebruik moet word om dit in 'n wisselstroom om te sit.

Die Steunstruktur

Die FV panele sal op 'n vaste steunstruktur gemonteer word, wat teen 'n hoek gestel is om die maksimum sonbestraling te ontvang. Die hoek van die paneel hang af van die breedtegraad van die voorgestelde aanleg, en die hoeke kan verstel word om die kenmerkende somer- en winterbestralings ten volle te benut.

Die FV panele is ontwerp om vir langer as 20 jaar ononderbroke, onbeman en met min instandhouding bedryf te word.



Illustrasie van 'n fotovoltaïese (FV) sonkragaanleg



Illustrasie van 'n KFV sonkragaanleg
(Met komplimente van AmonixTM)

OMGEWINGSIMPAKEVALUERINGSROSES

Ingevolge Artikel 24 en 24D van die Nasionale Wet op Omgewingsbestuur (Wet 107 van 1998), saamgelees met die OIE-regulasies van Staatskennisgewing R543 – R546, word 'n Bestekopname-en 'n OIE-proses vir die voorgestelde projek vereis. Die projek is by die Nasionale Departement Omgewingsake geregistreer onder Aansoekverwysingsnommer 14/12/16/3/3/2/348 (wind).

en 14/12/16/3/3/2/347 (sonkrag).

Die projek vereis magtiging van die Nasionale Departement Omgewingsake (DEA) (in oorleg met die Noord-Kaapse Departement Omgewingsake en Natuurbewaring (DENC)) vir die oprigting en bedryf van die voorgestelde hernubare kragaanleg. Ten einde magtiging te verkry, moet omvattende, onafhanklike omgewingstudies ingevolge die OIE-regulasies onderneem word.

'n OIE is 'n doeltreffende beplannings- en besluitnemingswerktuig. Dit bring mee dat die potensiële omgewingsverwante gevolge wat voortspruit uit die oprigting en bedryf van 'n tegniese aanleg, geïdentifiseer en na behore bestuur word. Dit bied die applikant die geleentheid om vooraf gewaarsku te wees teen potensiële omgewingsvraagstukke en bied die geleentheid om die vraagstuk(ke) waaroor verslag gedoen is in die OIE-verslag asook uit dialoog met geaffekteerde partye, op te los.

Mainstream het Savannah Environmental aangestel as die onafhanklike omgewingskonsultante om die nodige bestekopnamefase en omgewingsimpakevaluering te onderneem ten einde al die potensiële omgewingsimpakte wat met die voorgestelde projek gepaard gaan, te identifiseer en te evalueer, en om gepaste versagtings- en bestuursmaatreëls in 'n Omgewingsbestuursprogram (OBPr) voor te stel. As deel van hierdie omgewingstudies, sal B&GP's aktief betrokke raak deur die openbare deelnameproses wat deur Sustainable Futures ZA onderneem word.

WAT IS DIE POTENSIËLE OMGEWINGSIMPAKTE WAT MET DIE VOORGESTELDE PROJEK GEPAARD GAAN?

'n Aantal potensiële omgewingsimpakte, beide positief en negatief, wat met die voorgestelde hernubare kragaanleg gepaard gaan, is geïdentifiseer. Dit sluit die volgende in:

Biofisiës

Impakte op avifauna en vlermuise:
Voëls en vlermuise kan geraak word deurdat hulle in die turbinelemme en kraglyne vasvlieg.

Impakte op ekologie, fauna en flora:
Die oprigting van die hernubare kragaanleg en die gevolglike versteuring van plantegroei kan 'n impak op die ekologie hé.

Impakte op grondsoorte:
Die sluit impakte soos gronderosie tydens konstruksie in.

Impakte op landboupotensiaal:
Impakte op landbougebiede en grondvermoe.

Maatskaplik

Visuele gehalte en estetika:
Weens hul hoogte en die grootte van die strukture kan die windturbines en sonpaneel 'n negatiewe visuele impak hé.

Impakte op erfenisterreine en fossiele:
Die versteuring of vernietiging van erfenisterreine en fossiele kan tydens die oprigting van die aanleg opduik.

Geraasimpakte:
Die draai van die rotorlemmes lei tot laefrekvensieraas. Daarbenewens kan geraasimpakte weens die oprigting ook voorkom.

Maatskaplike impakte:
Die projek kan positiewe en negatiewe impakte op die terrein en die omgewing hé.

Spesialisstudies sal onderneem word om hierdie potensiële impakte te identifiseer en te evalueer. Dit sal soos volg in twee fases plaasvind:

1. Die Bestekopnamefase/-studie, wat bestaan uit 'n kantoor (desktop) studie waartydens potensiële vraagstukke wat met voorgestelde projek gepaard gaan, geïdentifiseer en geëvalueer sal word, en daardie vraagstukke uitlig wat verdere ondersoek tydens die OIE-fase verg.
2. Die OIE-fase, wat die gedetailleerde evaluering van potensieel wesenlike impakte behels wat tydens die Bestekopnamefase geïdentifiseer is. Praktiese en uitvoerbare versagtings- en bestuursmaatreëls sal in die Konsep Omgewingsbestuursprogram (OBPr) aanbeveel word.

Die potensiële omgewingsimpakte wat met die nie-onderneming van die voorgestelde projek gepaard gaan, sal ook deur die OIE-proses ondersoek 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 hierdie 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 u die geleentheid om uit die staanspoor aktief by die OIE betrokke te raak. Kommentaar en insette van B&GP's tydens die OIE-proses word aangemoedig ten einde te verseker dat oorweging geskenk word aan potensiële impakte binne die omvang van die studie.

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 oorsig;
- » deelname deur B&GP's op so 'n wyse gefasiliteer word dat hulle 'n redelike geleentheid gegun word om kommentaar te lewer oor die voorgestelde projek; en
- » toereikende besigtigingstydperke aan B&GP's gebied word om kommentaar te lewer oor die bevindinge van die konsep Bestekopname- en OIE-verslag.

Die fases van 'n OIE is soos volg:



UVERANTWOORDELIKHEDE AS 'N B&GP

Ingevolge die OIE-regulasies, word u aandag gevëstig op u verantwoordelikhede as 'n B&GP:

- » Ten einde aan hierdie OIE-proses deel te neem, moet u self op die projek se databasis registreer.
- » U moet toesien dat enige kommentaar rakende die voorgestelde projek binne die gestipuleerde tydsraamwerke ingedien word.
- » Daar word van u verlang om enige regstreekse sake-, finansiële-, persoonlike- of ander belang wat u dalk mag hê in die goedkeuring of afkeuring van die aansoek vir die voorgestelde aanleg, bekend te maak.

HOE OM BETROKKE TE RAAK

1. Deur te reageer (telefonies, per faks of per e-pos) op ons uitnodiging vir u betrokkenheid wat in koerante geadverteer is.
2. Deur die aangehegte Antwoordvorm aan die tersaaklike kontakpersoon terug te besorg.
3. Deur die vergaderings by te woon wat gedurende die verloop van die projek gehou sal word. As 'n geregistreerde B&GP sal u automaties uitgenooi word om hierdie vergaderings by te woon.

Datums vir openbare vergaderings sal ook in koorante geadverteer word.

4. Deur die konsultante te kontak met navrae of kommentaar.
5. Deur oorsig en kommentaar te bied oor die konsep Bestekopname- en OIE-verslag, en wel binne die gestipuleerde 30-dae besigtigingstydperke.

Indien u uself as 'n B&GP vir hierdie voorgestelde projek 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 vraagstukke en knelpunte te opper wat u raak en/of waarin u belangstel en waарoor u meer inligting verlang. U insette in hierdie proses vorm 'n belangrike deel van die OIE-proses.

Deur die meegaande Antwoordvorm in te vul en aan ons terug te besorg, regstreer u uself outomatis as 'n B&GP vir hierdie projek en verseker u dat kennis geneem word van u kommentaar, knelpunte of navrae betreffende die projek.

KOMMENTAAR EN NAVRAE

Rig alle kommentaar, navrae of antwoorde aan:

Shawn Johnston van Sustainable Futures ZA

Posbus 749, Rondebosch, KAAPSTAD, 7701

Telefoon: 083 325 9965

Faks: 086 510 2537

E-pos: swjohnston@mweb.co.za

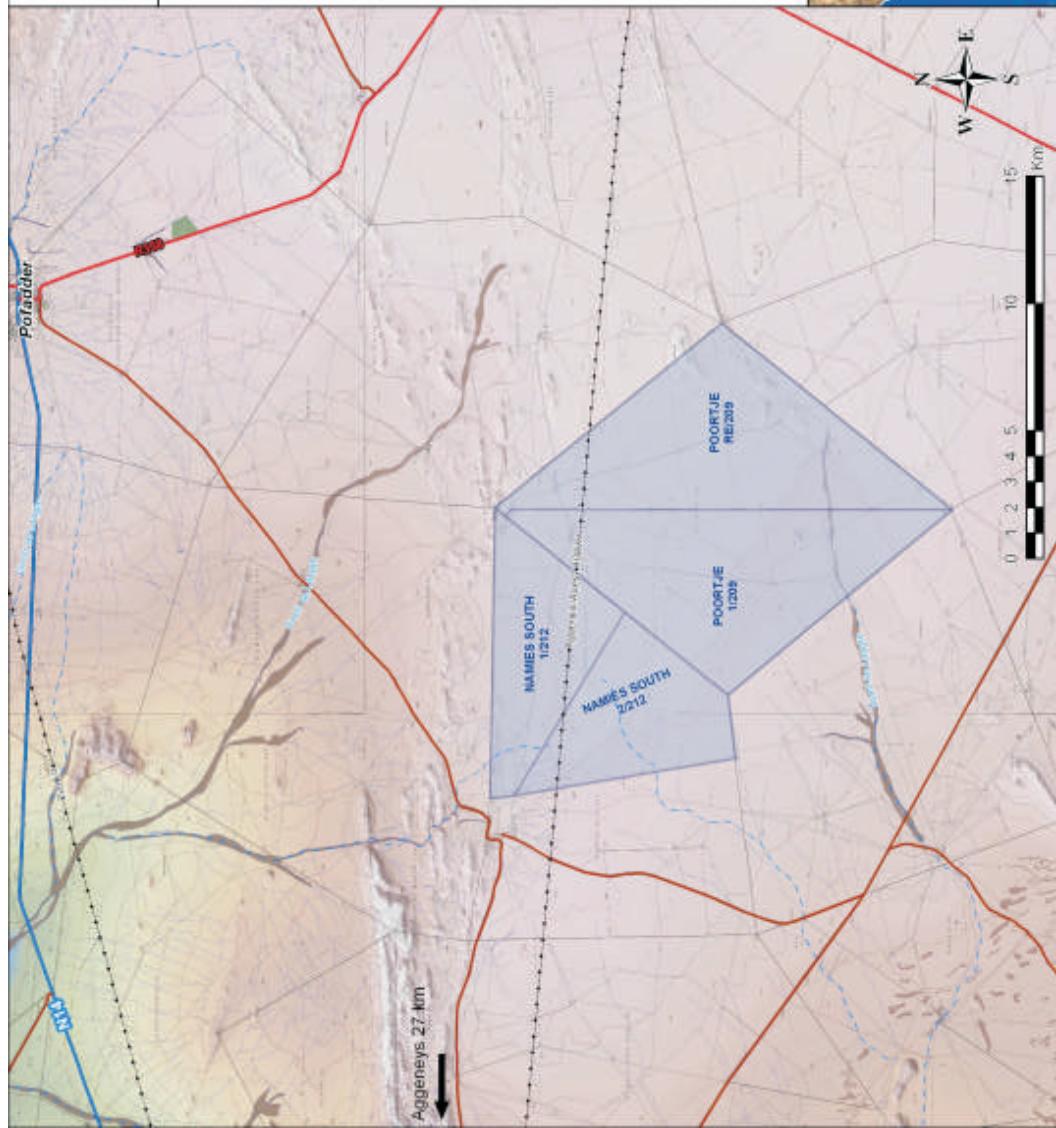
Vir dokumentasie wat met die projek gepaardgaan, besoek

www.savannahSA.com

Proposed Renewable Energy Facility on a site southwest of Pofadder, Northern Cape Locality Map

Legend

- National Road
- Regional Road
- Secondary Road
- Railway Line
- Perennial River
- Non-perennial River
- Power Line
- Distribution Substation
- Transmission Substation
- Farm portions



JUNE 2012

ENVIRONMENTAL IMPACT ASSESSMENT PROCESS

PROPOSED

**WIND AND SOLAR RENEWABLE ENERGY FACILITY
ON A SITE SOUTH WEST OF POFADDER**

NORTHERN CAPE PROVINCE

BACKGROUND INFORMATION DOCUMENT



South Africa Mainstream Renewable Power Development (Pty) Ltd (Mainstream) is proposing to establish a commercial renewable energy facility consisting of both a wind energy facility component and a photovoltaic solar facility component, as well as associated infrastructure on a site located approximately 22 km south-west of Pofadder in the Northern Cape Province. Based on a pre-feasibility analysis and site identification processes undertaken by Mainstream, a favourable area has been identified for consideration and evaluation through an Environmental Impact Assessment (EIA).

The project is proposed on the following farms: Portions 1 and Remaining Extent of Farm 209 (Poortje) and Portions 1 and 2 of Farm 212 (Namies South). The site proposed for the facility falls within the Khai-Ma Local Municipality. A broader area of approximately 175 km² is being considered within which the facility is to be constructed. The nature and extent of this facility is explored in more detail in this Background Information Document (BID).

AIM OF THIS BACKGROUND INFORMATION DOCUMENT

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

- » An overview of the proposed Wind and Solar Energy Facility.
- » An overview of the Environmental Impact Assessment process and studies being undertaken to assess the potential impacts, both positive and negative, associated with the proposed project.
- » Details of how you can become involved in the process, receive information, or raise issues, which may concern and/or interest you.

OVERVIEW OF THE PROPOSED PROJECT

By undertaking a technical feasibility study which considered favourable climatic conditions (wind and solar renewable energy facilities are directly reliant on average wind speeds and solar radiation values for a particular area), access to the electricity grid, accessibility of the study site, and local site topography, an ideal site has been identified for the establishment of the proposed renewable energy facility.

The proposed facility would comprise of a combination of the following technologies:

- » Up to 500 wind turbines (each turbine between 1.5 MW – 4MW in capacity).
- » An array of either photovoltaic panels (PV) or concentrated photovoltaic panels (CPV) with a generating capacity of up to 250MW.

Other infrastructure associated with the facility will include:

- » Foundations to support both the turbine towers as well as the PV panels;
- » Cabling between the project components, to be lain underground where practical;
- » A 400 kV substation and 4 (four) satellite 132 kV substations to facilitate grid connection via a loop-in loop-out connection to the existing Eskom Aggenys-Aries 400kV power line which traverses the site;
- » Internal access roads; and
- » Workshop area for maintenance and storage.

The overall aim of the design and layout of the facility is to maximise electricity production through exposure to the wind resource and solar radiation, while minimising infrastructure, operation and maintenance costs, and social and environmental impacts. The use of wind- and solar energy for power generation can be described as a non-consumptive use of natural resources which emits zero greenhouse gas emissions. The generation of renewable energy contributes to South Africa's electricity generating market which has been dominated by coal-based power generation.

RENEWABLE ENERGY TECHNOLOGIES PROPOSED FOR THE PROJECT

Various renewable energy technologies are available for electricity generation. Renewable energy technologies including wind turbines and solar panels offer an alternative to fossil fuels, thereby reducing the amount of CO₂ emissions into the atmosphere. It is proposed that this renewable energy facility employ both wind turbines and photovoltaic panels in order to generate electricity, which will be fed into the National power grid.

1. Wind Energy Facility

A wind energy facility consists of multiple wind turbines which are used to capture the kinetic energy of the wind. The mechanical power generated by the rotation of the blades is transmitted to the generator within the nacelle via a gearbox and a drive train. The wind turns the blades, which in turn spin a shaft which connects to a generator and generates electrical power.

Wind turbines typically consist of four primary components:

The Foundation

Each turbine will have a concrete foundation upon which the base of the wind turbine will be anchored. These foundations reach depths of approximately 2.5m.

The Tower

The tower varies between 80-120m in height, depending on the type of turbine. The tower is a hollow structure which allows access to the nacelle in order to perform maintenance activities.

The Nacelle

The nacelle refers to the protective housing which comprises the gearbox, generator as well as the wind sensor to identify the wind direction.

The nacelle has the ability to rotate in order to ensure that the rotor blades are always facing into the wind therefore maximising the amount of electricity being generated.

The Rotor

The rotor consists of three blades and the hub. The rotor blades are typically up to 60m in length.

The amount of energy a turbine can harness is dependent on the wind velocity and the length of the rotor blades. Wind turbines start generating power at wind speeds of between 10-15 km/hour, with speeds between 45-60 km/hour required for full power operation. Where wind speeds reach levels which could damage the generator, the turbine automatically shuts down. A turbine is designed to operate continuously, with low maintenance for more than 20 years.

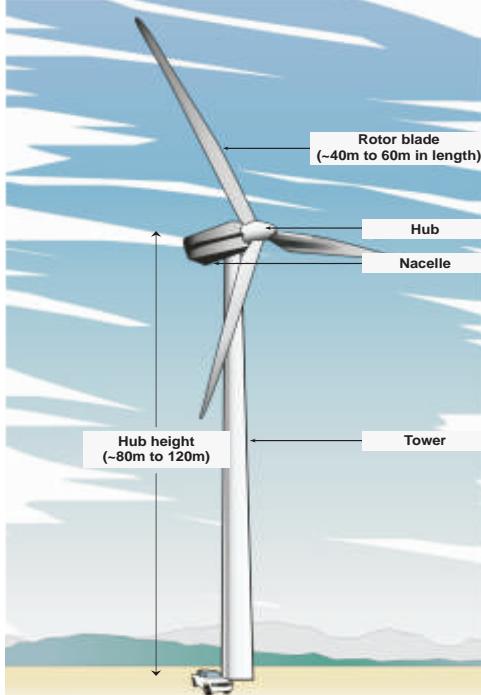


Illustration of the components of a typical wind turbine

2. Solar Energy Facility

Solar energy facilities, such as those using PV panels use the 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 photovoltaic solar facility component of the development is anticipated to accommodate up to 250 MW of generating capacity. Either PV or CPV and associated tracking infrastructure is being considered for this site.

Solar PV facilities comprise of the following components:

The Photovoltaic Cell

A photovoltaic (PV) cell is made of silicone which acts as a semiconductor used to produce the photovoltaic effect. 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. Therefore an inverter must be used to change it to alternating current.

The Support Structure

The PV panels will be fixed to a support structure set at an angle so to receive the maximum amount of solar radiation. The angle of the panel is dependent on the latitude of the proposed facility and the angles may be adjusted to optimise for summer or winter solar radiation characteristics.

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

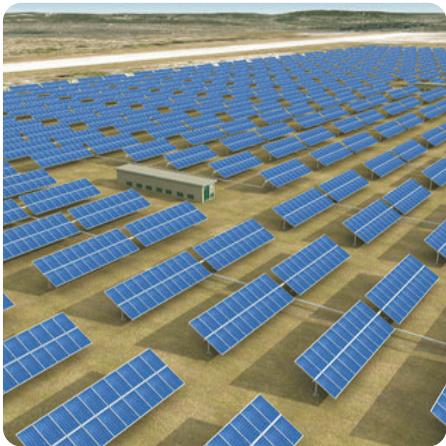


Illustration of a photovoltaic solar energy facility



Illustration of a CPV solar energy facility
(Courtesy of AmonixTM)

ENVIRONMENTAL IMPACT ASSESSMENT PROCESS

In terms of sections 24 and 24D of the National Environmental Management Act (No 107 of 1998), as read with the EIA Regulations of GN R543 - R546, a Scoping and EIA process is required to be undertaken for the proposed project. The project has been registered with the National Department of Environmental Affairs under Application Reference Numbers

14/12/16/3/3/2/348 (wind) and 14/12/16/3/3/2/347 (solar).

The project requires authorisation from the National Department of Environmental Affairs (DEA) (in consultation with the Northern Cape Department of Environment and Nature Conservation (DENC)) for the construction and operation of the proposed renewable energy facility. In order to obtain authorisation, comprehensive, independent environmental studies must be undertaken in accordance with the EIA Regulations.

An EIA is an effective planning and decision-making tool. It allows the potential environmental consequences resulting from a technical facility during its establishment and its operation to be identified and appropriately managed. It provides the opportunity for the applicant to be forewarned of potential environmental issues, and allows for resolution of the issue(s) reported on in the EIA report as well as dialogue with I&APs.

Mainstream has appointed Savannah Environmental, as the independent environmental consultants, to undertake the required Scoping Phase and Environmental Impact Assessment to identify and assess all the potential environmental impacts associated with the proposed project, and proposes appropriate mitigation and management measures in an Environmental Management Programme (EMP). As part of these environmental studies, I&APs will be actively involved through the public involvement process being undertaken by Sustainable Futures ZA.

WHAT ARE THE POTENTIAL ENVIRONMENTAL IMPACTS ASSOCIATED WITH THE PROPOSED PROJECT?

A number of potential environmental impacts, both positive and negative, associated with the proposed Renewable Energy Facility have been identified. These include the following:

Biophysical

Impacts on avifauna and bats:
Birds and bats may be impacted through collision with the wind turbine blades and power lines.
Impacts on ecology, fauna en flora:
The construction of the renewable energy facility and the occasional disturbance of vegetation may result in impacts on ecology.
Impacts on soils:
Impacts such as soil erosion could occur.
Impacts on agricultural potential:
Impacts on agricultural areas and land capability.

Social

Visual quality and aesthetics:
The wind turbines and solar panels can have a negative visual impact due to the height and size of the structures.
Impacts on heritage sites and fossils:
Disturbance to or destruction of heritage sites and fossils may result during construction of the facility.
Noise impacts:
The rotation of the rotor blades causes low frequency noise. In addition, noise impacts from construction could occur.
Social impacts:
The project could have positive and negative impacts on the site and surrounds.

Specialist studies will be undertaken to identify and assess these potential impacts and will be undertaken in two phases:

1. The Scoping Phase/Study consists of a desktop study wherein potential issues associated with the proposed project are identified and evaluated, and those issues requiring further investigation through the EIA phase are highlighted.
2. The EIA phase involves the detailed assessment of potentially significant impacts identified in the Scoping Phase. Practical and achievable mitigation and management measures will be recommended within the draft Environmental Management Programme (EMP).

The potential environmental impacts associated with not undertaking the proposed project will also be explored through the EIA process. Specialist studies will be guided by existing information, field observations and input from the public participation process. As an I&AP, your input is considered an important part of this process, and we urge you to become involved.

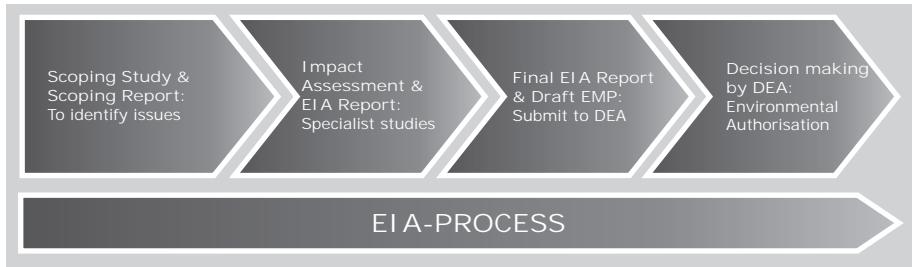
PUBLIC INVOLVEMENT PROCESS

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

The public involvement process aims to ensure that:

- » Information that contains all the relevant facts in respect of the application is made available to I&APs for review.
- » I&AP participation is facilitated in such a manner that they are provided with a reasonable opportunity to comment on the proposed project.
- » Adequate review periods are provided for I&APs to comment on the findings of the draft Scoping and EIA Reports.

The phases of an EIA are:



YOUR RESPONSIBILITIES AS AN I&AP

In terms of the EIA Regulations, your attention is drawn to your responsibilities as an I&AP:

- » In order to participate in this EIA process, you must register yourself on the project database.
- » You must ensure that any comments regarding the proposed project are submitted within the stipulated timeframes.
- » You are required to disclose any direct business, financial, personal or other interest which that you may have in the approval or refusal of the application for the proposed facility.

HOW TO BECOME INVOLVED

1. By responding (by phone, fax or e-mail) to our invitation for your involvement which has been advertised in 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 project. As a registered I&AP you will automatically be invited to attend these meetings. Dates for public meetings will also be advertised in newspapers.
4. By contacting the consultants with queries or comments.
5. By reviewing and commenting on the draft Scoping and EIA Reports within the stipulated 30-

day review periods.

If you consider yourself an I&AP for this proposed project, 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 EIA process.

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

COMMENTS AND QUERIES

Direct all comments, queries or responses to:

Shawn Johnston of Sustainable Futures ZA
PO Box 749, Rondebosch, CAPE TOWN, 7701

Phone: 083 325 9965

Fax: 086 510 2537

E-mail: swjohnston@mweb.co.za

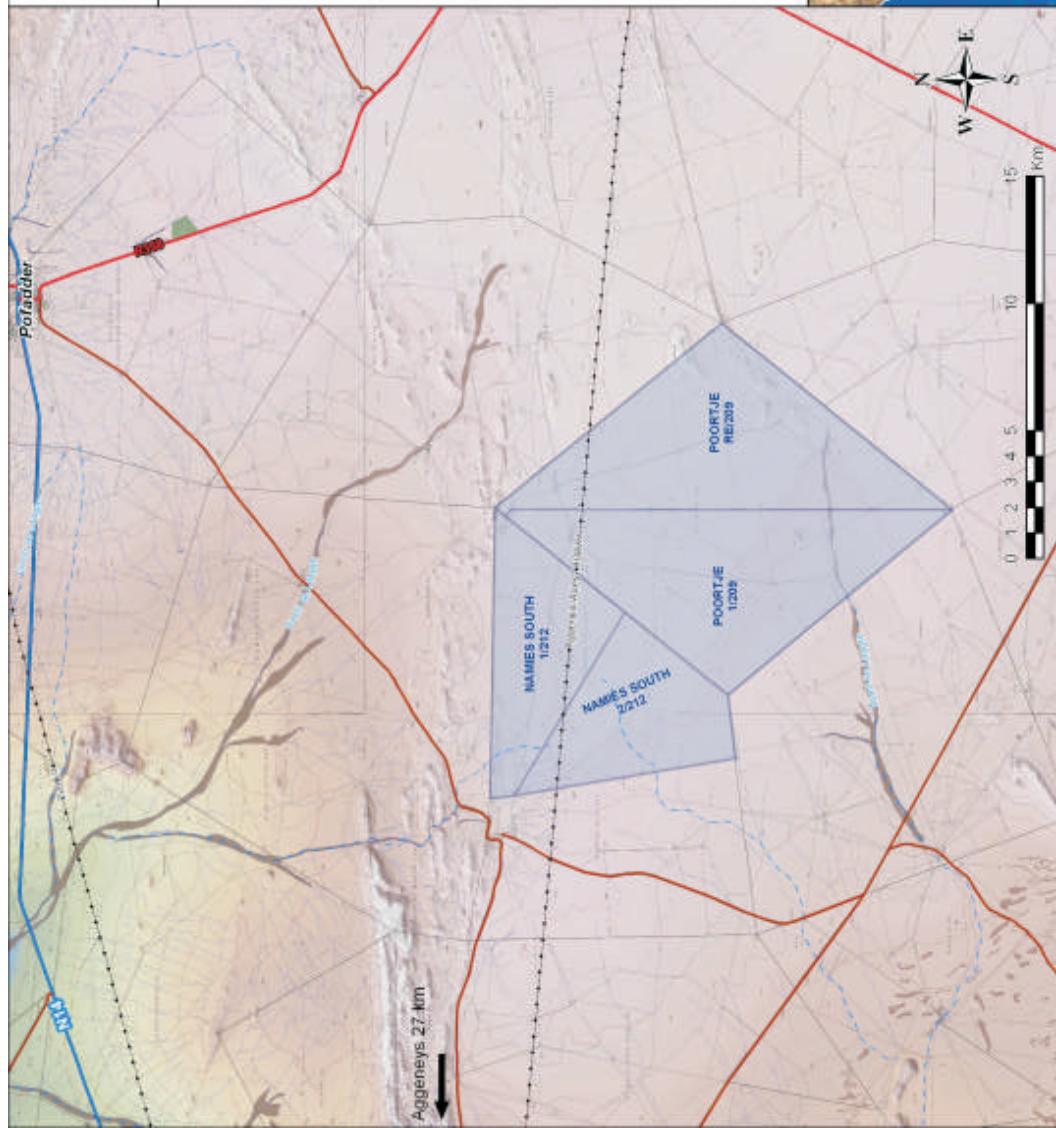
To view project documentation, visit

www.savannahSA.com

Proposed Renewable Energy Facility on a site southwest of Pofadder, Northern Cape Locality Map

Legend

- National Road
- Regional Road
- Secondary Road
- Railway Line
- Perennial River
- Non-perennial River
- Power Line
- Distribution Substation
- Transmission Substation
- Farm portions



PROPOSED RENEWABLE ENERGY FACILITY ON A SITE SOUTHWEST OF POFADDER, NORTHERN
CAPE

DEA Ref No. 14/12/16/3/3/2/348 (Wind) and 14/12/16/3/3/2/347 (Solar)
PUBLIC INVOLVEMENT PROCESS REPLY FORM

Return completed reply form to: **Gabriele Wood of Savannah Environmental (Pty) Ltd**

Fax: 086 699 5796

Phone: 011 234 6621

E-mail: gabriele@savannahsa.com

Postal Address: P O Box 148 Sunninghill 2157

Please provide your complete contact details:

Name & Surname:

--	--	--

Organisation & Designation:

Postal Address:

Telephone:

	Cellphone:	
--	------------	--

Fax:

E-mail:

--

Would you like to register as an interested and affected party (I&AP)? YES

(please tick the relevant box)

YES	
NO	

Note: Please register as an I&AP to receive further correspondence regarding the EIA process for the project. Once registered on the project database, your contact details MAY be included in public documentation.

Please state your interest in the project (add additional pages if necessary):

--

Please list your questions, views or concerns regarding the project (add additional pages if necessary):

--

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

Name & Surname:

--	--	--

Organisation & Designation:

Postal Address:

Telephone:

	Cellphone:	
--	------------	--

Fax:

E-mail:

--

What is your preferred language of correspondence? (please tick the relevant box)

English

--

Afrikaans



(Sien keersy vir Afrikaans)

VOORGESTELDE HERNUBARE WIND- EN SONKRAGAANLEG OP 'N TERREIN SUIDWES VAN
POFADDER, NOORD-KAAPROVINSIE

DEA Verwysingsnummers: 14/12/16/3/3/2/348 (Wind) en 14/12/16/3/3/2/347 (Sonkrag).
OPENBARE DEELNAMEPROSES REGISTRASIE/KOMMENTAAR VORM

Stuur voltooide registrasie/kommentaar vorm aan: **Gabriele Wood** van **Savannah Environmental (Edms.) Bpk**

Faks: 086 699 5796 Telefoon: 011 234 6621

E-pos: gabriele@savannahsa.com

Posadres: **Posbus 148 Sunninghill 2157**

Verskaf asseblief u persoonlike kontak besonderhede:

Naam & Van:

Naam & Van:			
Organisasie & Rol:			
Posadres:			
Telefoon:		Selfoon:	
Faks:		Vonkpos:	

Organisasie & Rol:

Posadres:

Telefoon:

Faks:

Selfoon:

Vonkpos:

Stel u belang om te regstreer as 'n belangstellende en/of geaffekteerde party JA NEE (Merk met X)

Nota: Dit word van u vereis om te regstreer as 'n B&GP om alle toekomstige inligting in verband met die Omgewingsimpakevalueringsproses te ontvang.

Verduidelik u belangstelling in hierdie projek (gebruik addisionele bladsye indien nodig):

Verduidelik u belangstelling in hierdie projek (gebruik addisionele bladsye indien nodig):
--

Lys u vrae, opinies of besorghede in verband met hierdie projek (gebruik addisionele bladsye indien nodig):

Lys u vrae, opinies of besorghede in verband met hierdie projek (gebruik addisionele bladsye indien nodig):

Verskaf bykommende kontak besonderhede van addisionele persoon/e wie u beskou as potensiële belangstellende en/of geaffekteerde partye:

Naam & Van:

Naam & Van:			
Organisasie & Rol:			
Posadres:			
Telefoon:		Selfoon:	
Faks:		E-pos:	

Organisasie & Rol:

Posadres:

Telefoon:

Faks:

Selfoon:

E-pos:

Dui u taal van keuse en korrespondensie aan (Merk met X)

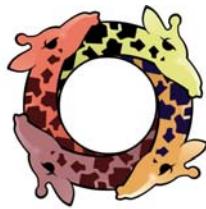
Engels

Engels	<input type="checkbox"/>
Afrikaans	<input type="checkbox"/>

Afrikaans



Sien omkeer bladsy vir Engels)



**SUSTAINABLE
FUTURES ZA**

July 2012

Dear Stakeholder

**PROPOSED MAINSTREAM WIND AND SOLAR RENEWABLE ENERGY
FACILITY ON A SITE SOUTHWEST OF POFADDER, NORTHERN CAPE
PROVINCE**

**DEA Ref No. 14/12/16/3/3/2/348 (Wind)
14/12/16/3/3/2/347 (Solar)**

NOTICE OF ENVIRONMENTAL IMPACT ASSESSMENT PROCESS

South Africa Mainstream Renewable Power Development (Pty) Ltd (Mainstream) is proposing to establish a commercial renewable energy facility consisting of both a wind energy facility component and a photovoltaic solar facility component, as well as associated infrastructure on a site located approximately 22 km southwest of Pofadder in the Northern Cape Province. Based on a pre-feasibility analysis and site identification processes undertaken by Mainstream, a favourable area has been identified for consideration and evaluation through an Environmental Impact Assessment (EIA).

The project is proposed on the following farms: Portions 1 and Remaining Extent of Farm 209 (Poortje) and Portions 1 and 2 of Farm 212 (Namies South). The site proposed for the facility falls within the Khai-Ma Local Municipality. A broader area of approximately 175 km² is being considered within which the facility is to be constructed.

The proposed facility would comprise of a combination of the following technologies:

- » Up to **500 wind turbines (each turbine between 1.5 MW – 4MW in capacity).**
- » An array of either **photovoltaic panels (PV)** or **concentrated photovoltaic panels (CPV)** with a generating capacity of up to 250MW.

Other **infrastructure** associated with the facility will include:

- » Foundations to support both the turbine towers as well as the PV panels;
- » Cabling between the project components, to be lain underground where practical;
- » A 400 kV substation and 4 (four) satellite 132 kV substations to facilitate grid connection via a loop-in loop-out connection to the existing Eskom Aggenys-Aries 400kV power line which traverses the site;
- » Internal access roads; and
- » Workshop area for maintenance and storage.

ENVIRONMENTAL IMPACT ASSESSMENT PROCESS

In terms of sections 24 and 24D of the National Environmental Management Act (No 107 of 1998), as read with the EIA Regulations of GN R543 - R546, a Scoping and EIA process is required to be undertaken for the proposed project. The project has been registered with the National Department of Environmental Affairs under Application Reference Numbers **14/12/16/3/3/2/348 (wind)** and **14/12/16/3/3/2/347 (solar)**.

The project requires authorisation from the National Department of Environmental Affairs (DEA) (in consultation with the Northern Cape Department of Environment and Nature Conservation (DENC)) for the construction and operation of the proposed renewable energy facility. In order to obtain authorisation, comprehensive, independent environmental studies must be undertaken in accordance with the EIA Regulations.

AVIABILITY OF A DRAFT SCOPING REPORT FOR PUBLIC REVIEW

In accordance with the EIA Regulations, a Draft Scoping Report will be available for public review and comment by Interested and Affected Parties (I&APs) and stakeholders. You will be informed on the 30-day public review period which will occur in August 2012. Comments can be made as written submission via fax, post or e-mail.

Please submit your comments to
Shawn Johnston of Sustainable Futures ZA
PO Box 749, Rondebosch, Cape Town, 7701
Fax: 086 510 2537
E-mail: swjohnston@mweb.co.za

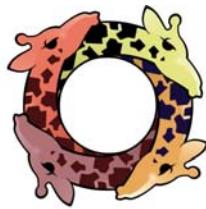
PUBLIC MEETING

In order to facilitate comments on the draft Scoping Report, a public meeting will be held during the public review period. All interested and affected parties will be informed on the public meeting details in August 2012. The aim of the public meeting is to provide you with more information regarding the proposed project (including technical details, project process and timeframes etc.), to provide a summary of the findings of the Draft Scoping Report undertaken, to invite comment on the proposed project, and to further discuss possible issues of specific concern to you which may need to be addressed.

Please do not hesitate to contact us should you require additional information and/or clarification regarding the proposed project. Our team welcomes your participation and looks forward to your involvement throughout this process.

Yours sincerely,

Shawn Johnston
Process Facilitator



**SUSTAINABLE
FUTURES ZA**

August 2012

Dear Stakeholder

**PROPOSED MAINSTREAM WIND AND SOLAR RENEWABLE ENERGY
FACILITY ON A SITE SOUTHWEST OF POFADDER, NORTHERN CAPE
PROVINCE**

**DEA Ref No. 14/12/16/3/3/2/348 (Wind)
14/12/16/3/3/2/347 (Solar)**

NOTICE OF ENVIRONMENTAL IMPACT ASSESSMENT PROCESS

South Africa Mainstream Renewable Power Development (Pty) Ltd (Mainstream) is proposing to establish a commercial renewable energy facility consisting of both a wind energy facility component and a photovoltaic solar facility component, as well as associated infrastructure on a site located approximately 22 km southwest of Pofadder in the Northern Cape Province. Based on a pre-feasibility analysis and site identification processes undertaken by Mainstream, a favourable area has been identified for consideration and evaluation through an Environmental Impact Assessment (EIA).

The project is proposed on the following farms: Portions 1 and Remaining Extent of Farm 209 (Poortje) and Portions 1 and 2 of Farm 212 (Namies South). The site proposed for the facility falls within the Khai-Ma Local Municipality. A broader area of approximately 175 km² is being considered within which the facility is to be constructed.

The proposed facility would comprise of a combination of the following technologies:

- » Up to **500 wind turbines (each turbine between 1.5 MW – 4MW in capacity).**
- » An array of either **photovoltaic panels (PV)** or **concentrated photovoltaic panels (CPV)** with a generating capacity of up to 250MW.

Other **infrastructure** associated with the facility will include:

- » Foundations to support both the turbine towers as well as the PV panels;
- » Cabling between the project components, to be lain underground where practical;
- » A 400 kV substation and 4 (four) satellite 132 kV substations to facilitate grid connection via a loop-in loop-out connection to the existing Eskom Aggenys-Aries 400kV power line which traverses the site;
- » Internal access roads; and
- » Workshop area for maintenance and storage.

ENVIRONMENTAL IMPACT ASSESSMENT PROCESS

In terms of sections 24 and 24D of the National Environmental Management Act (No 107 of 1998), as read with the EIA Regulations of GN R543 - R546, a Scoping and EIA process is required to be undertaken for the proposed project. The project has been registered with the National Department of Environmental Affairs under Application Reference Numbers **14/12/16/3/3/2/348 (wind)** and **14/12/16/3/3/2/347 (solar)**.

The project requires authorisation from the National Department of Environmental Affairs (DEA) (in consultation with the Northern Cape Department of Environment and Nature Conservation (DENC)) for the construction and operation of the proposed renewable energy facility. In order to obtain authorisation, comprehensive, independent environmental studies must be undertaken in accordance with the EIA Regulations.

AVIABILITY OF A DRAFT SCOPING REPORT FOR PUBLIC REVIEW

In accordance with the EIA Regulations, a Draft Scoping Report will be available for public review and comment by Interested and Affected Parties (I&APs). A Draft Scoping Report has been prepared by Savannah Environmental and will be available for public review at the Pofadder Public Library. The report is also available electronically on the website: www.savannahSA.com. The period for review is 20 August 2012 – 18 September 2012. Please submit written comment by 18 September 2012

Comments can be made as written submission via fax, post or e-mail.

Please submit your comments to

Shawn Johnston of Sustainable Futures ZA

PO Box 749, Rondebosch, Cape Town, 7701

Fax: 086 510 2537

E-mail: swjohnston@mweb.co.za

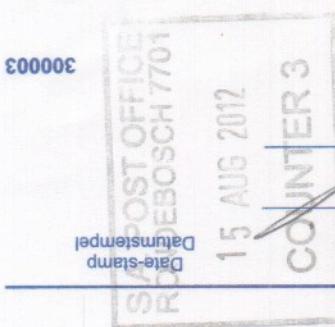
PUBLIC MEETING

In order to facilitate comments on the draft Scoping Report, a public meeting will be held during the public review period. All interested and affected parties are invited to attend a public feedback meeting to be held on **Thursday, 23 August 2012** at the **Blyvooruitsig Community Hall in Pofadder at 16:00**. The aim of the public meeting is to provide you with more information regarding the proposed project (including technical details, project process and timeframes etc.), to provide a summary of the findings of the Draft Scoping Report undertaken, to invite comment on the proposed project, and to further discuss possible issues of specific concern to you which may need to be addressed.

Please do not hesitate to contact us should you require additional information and/or clarification regarding the proposed project. Our team welcomes your participation and looks forward to your involvement throughout this process.

Yours sincerely,

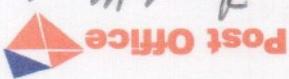
Shawn Johnston
Process Facilitator



Green vergoedeling word dorweeg nie leensy navraag l.v.m. Hierdie poststuk binne een jaar na die posdaatum gesoden word. Geen vergoedeling sal dus nie van toepassing is nie.

No compensation will be considered unless regularly this postal article is made within one year after the date of posting.

Sender's reference no.	Addresser's name and address	Trade-name or firm name	Code/insurancenumber	Charge/value of ordinary/insured parcels	Handling fees/KBA/-verskereerde pakketwaarde van handelsbedrag	R/c	R/c	Pakket no.	Parcels posted:
1.	Albie's Jan Nieuwoudt								
2.	Telklo. Witklo po	MWU Luthuli House, 100 Luthuli Street	RD 645 141 469 ZA	A BOOK COPY					
3.	Homy Fourie	354 hoek Lang Street	RD 645 141 455 ZA	A BOOK COPY					
4.	Stuvey Lisseker	D.O. Box 231	RD 645 141 512 ZA	A BOOK COPY					
5.	Wimpi Lisseker	D.O. Box 231	RD 645 141 512 ZA	A BOOK COPY					
6.	Dolfie Lisseker	D.O. Box 231	RD 645 141 512 ZA	A BOOK COPY					
7.	Suzie Weiss	Dolfie Lisseker	RD 645 141 490 ZA	A BOOK COPY					
8.	Jacobs Laurier	D.O. Box 294	RD 645 141 509 ZA	A BOOK COPY					
	Die adder	8890							





agriculture, forestry & fisheries

Department:
Agriculture, Forestry and Fisheries
REPUBLIC OF SOUTH AFRICA

DIRECTORATE: FORESTRY MANAGEMENT (OTHER REGIONS)
P.O. Box 2782, UPINGTON, 8800, Tel 054 338 5909, Fax 054 334 0030

Enquiries: J Mans
E-mail: JacolineMa@daff.gov.za
Date: 17 August 2012
Ref: F13/11/2/178

Savannah Environmental (Pty) Ltd
P.O. Box 148
SUNNINGHILL
2157

ATTENTION: Gabriele Wood (gabriele@savannahsa.com)

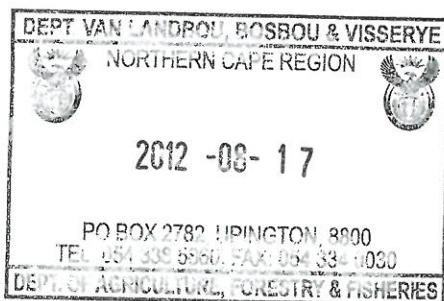
RE: COMMENTS ON BACKGROUND INFORMATION DOCUMENT (BID) FOR THE PROPOSED CONSTRUCTION OF PROPOSED RENEWABLE ENERGY FACILITY ON A SITE SOUTHWEST OF POFADDER, NORTHERN CAPE (DEA REF: 14/12/16/3/3/2/348 (WIND) AND 14/12/15/3/3/2/347 (SOLAR))

The Directorate: Forestry Management (Other Regions) in the Department of Agriculture, **Forestry** and Fisheries (DAFF) would hereby like to make the following comments:

1. The DAFF is mainly concerned about the potential impact on protected tree species. See the National Forest Act, Act 84 of 1998 (NFA) as amended, section 12(1)(d) read with s15(1) and s62(2)(c). The list of protected tree species was published in GN 734 of 16 September 2011.
2. No protected tree (NFA) may be removed or disturbed without a Forest Act License. Please ensure that the potential impact on protected trees and plants are properly assessed and minimized by careful placement of the planned infrastructure.
3. Please take note of the Northern Cape Nature Conservation Act, Act 9 of 2009 (NCNA) which became effective early 2012. The NCNA contains schedules of specially protected and protected fauna and flora which may not be disturbed without a permit from the Department of Environment and Nature Conservation (DENC).
4. Kindly provide this office with all further documentation in this regard, in hardcopy or electronic format. Please note we cannot download documents from the internet.

Yours truly,

Jacoline Mans
Chief Forester: NFA Regulation



Enquiries: Kathryn Smuts
Tel: 021 462 4502
Email: ksmuts@sahra.org.za
CaseID: 387

Date: Friday August 17, 2012

Page No: 1



Letter

In terms of section 38(8) of the National Heritage Resources Act (Act 25 of 1999)

Attention: Shawn Johnston

Sustainable Futures ZA
PO Box 749
Rondebosch
Cape Town
7701

PROPOSED MAINSTREAM WIND AND SOLAR RENEWABLE ENERGY FACILITY ON A SITE SOUTHWEST OF POFADDER, NORTHERN CAPE PROVINCE DEA Ref No. 14/12/16/3/3/2/348 (Wind) 14/12/16/3/3/2/347 (Solar)

Thank you for your indication that development is to take place in this area.

In terms of the National Heritage Resources Act, no 25 of 1999, heritage resources, including archaeological or palaeontological sites over 100 years old, graves older than 60 years, structures older than 60 years are protected. They may not be disturbed without a permit from the relevant heritage resources authority. This means that before such sites are disturbed by development it is incumbent on the developer (or mine) to ensure that a **Heritage Impact Assessment** is done. This must include the archaeological component (Phase 1) and any other applicable heritage components. Appropriate (Phase 2) mitigation, which involves recording, sampling and dating sites that are to be destroyed, must be done as required.

Decision:

In your application received by SAHRA there was no indication of such an assessment of the palaeontological/archaeological resources. The quickest way forward is to contact suitably qualified specialists to provide a Phase 1 Palaeontological/Archaeological Impact Assessment Report.

The Phase 1 Impact Assessment Report will identify the archaeological sites and assess their significance. It should also make recommendations (as indicated in section 38) about the process to be followed. For example, there may need to be a mitigation phase (Phase 2) where the specialist will collect or excavate material and date the site. At the end of the process the heritage authority may give permission for destruction of the sites.

Where bedrock is to be affected, or where there are coastal sediments, or marine or river terraces and in potentially fossiliferous superficial deposits, a Palaeontological study must be undertaken to assess whether or not the development will impact upon palaeontological resources - or at least a letter of exemption from a Palaeontologist is needed to indicate that this is unnecessary. If the area is deemed sensitive, a full Phase 1 Palaeontological Impact Assessment will be required and if necessary a Phase 2 rescue operation might be necessary. (See attached list of accredited Palaeontologists).



Enquiries: Kathryn Smuts
Tel: 021 462 4502
Email: ksmuts@sahra.org.za
CaseID: 387

Date: Friday August 17, 2012

Page No: 2



If the property is very small or disturbed and there is no significant site the specialist may choose to send a letter to the heritage authority to indicate that there is no necessity for any further assessment.

Any other heritage resources that may be impacted such as built structures over 60 years old, sites of cultural significance associated with oral histories, burial grounds and graves, graves of victims of conflict, and cultural landscapes or viewscapes must also be assessed.

Should you have any further queries, please contact the designated official using the case number quoted above in the case header.

Yours faithfully

Kathryn Smuts
Heritage Officer: Archaeology
South African Heritage Resources Agency

Colette Scheermeyer
SAHRA Head Archaeologist
South African Heritage Resources Agency

ADMIN:

(DEA, Ref: 14/12/16/3/3/2/347) (DEA, Ref: 14/12/16/3/3/2/348)

Terms & Conditions:

1. This approval does not exonerate the applicant from obtaining local authority approval or any other necessary approval for proposed work.
2. If any heritage resources, including graves or human remains, are encountered they must be reported to SAHRA immediately.
3. SAHRA reserves the right to request additional information as required.



The South African Heritage Resources Agency

Street Address: 111 Harrington Street, Cape Town 8000 * Postal Address: PO Box 4637, Cape Town 8000
* Tel: +27 21 462 4502 * Fax: +27 21 462 4509 * Web: <http://www.sahra.org.za>