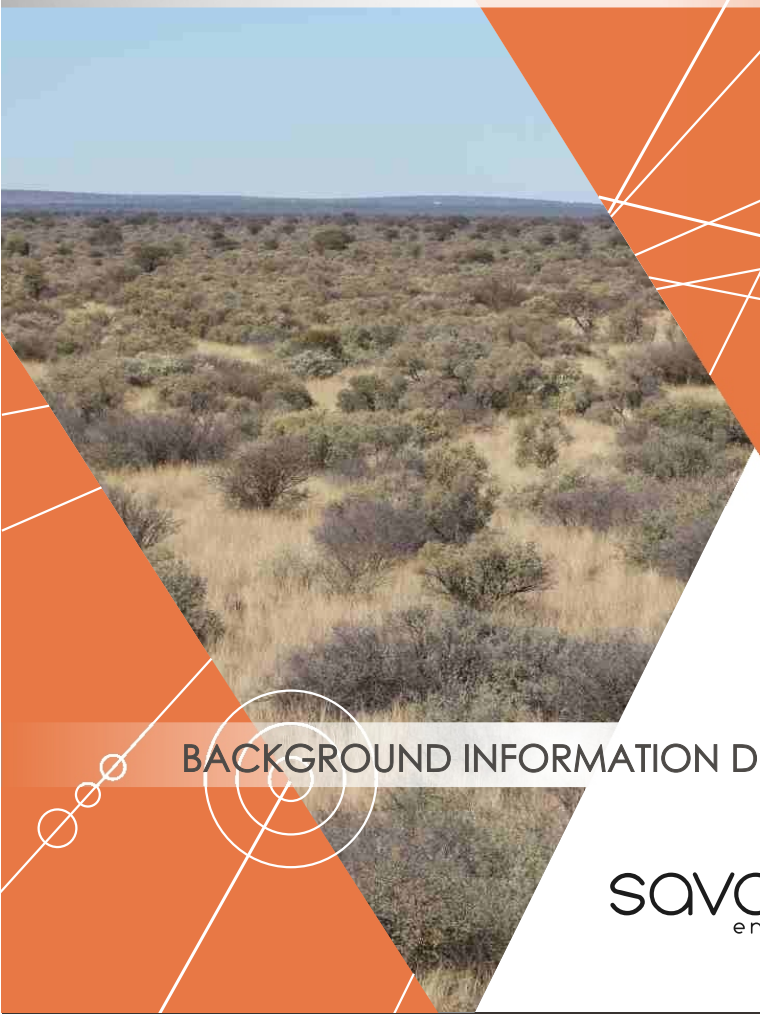
SEPTEMBER 2018

ENVIRONMENTAL IMPACT ASSESSMENT PROCESS

HYPERION SOLAR PV DEVELOPMENTS AND ASSOCIATED INFRASTRUCTURE, NORTHERN CAPE PROVINCE



BACKGROUND INFORMATION DOCUMENT

savannah environmental

The development of four (4) separate photovoltaic (PV) solar energy facilities (SEFs) as well as associated infrastructure are being proposed on the Remaining Extent of the Farm Lyndoch 432 situated ~16km north of Kathu in the Northern Cape Province. The proposed solar energy facilities fall within the jurisdiction of the Gamagara Local Municipality and within the greater John Taolo Gaetsewe District Municipality. These facilities will be called:

» Hyperion Solar Development 1
» Hyperion Solar Development 2
» Hyperion Solar Development 3
» Hyperion Solar Development 4

Each of the four (4) SEFs will be constructed as separate stand-alone projects, with a separate project development company (or Special Purpose Vehicle (SPV)) as the applicant for each project. The projects are detailed below:

Applicant:	***Project Name:***	***Contracted Capacity:***
Hyperion Solar Development 1 (Pty) Ltd	Hyperion Solar Development 1	75MW
Cyraguard (Pty) Ltd	Hyperion Solar Development 2	75MW
Nomispark (Pty) Ltd	Hyperion Solar Development 3	75MW
Nomispan (Pty) Ltd	Hyperion Solar Development 4	75MW

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

AIM OF THIS BACKGROUND INFORMATION DOCUMENT

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

» an overview of the proposed solar energy facilities and associated infrastructure.
» an overview of the Environmental Impact Assessment (EIA) process and specialist studies being undertaken to assess the Hyperion Solar PV Developments.
» details of how you can become involved in the EIA process, receive information, or raise issues, which may concern and/or interest you.

OVERVIEW OF THE PROPOSED HYPERION SOLAR PV DEVELOPMENTS

In response to the growing electricity demand within South Africa, the need to promote renewable energy and sustainability within the Northern Cape Province, as well as the country's targets for renewable energy, the development of four (4) 75MW PV SEFs and associated infrastructure is planned on the Remaining Extent of the Farm Lyndoch 432 in the Northern Cape Province.

Each facility is proposed to include multiple arrays (static and tracking) of PV solar panels with a contracted capacity of up to 75MW. The development footprint for each facility is anticipated to be approximately 180ha in extent.

Infrastructure associated with each solar energy facility will include:

» Arrays of PV panels (static and tracking PV system) with a contracted capacity of up to 75MW.
» Mounting structures to support the PV panels.
» Cabling between the project components, to be laid underground where practical.
» On-site inverters to convert the power from a direct current to an alternating current.
» An on-site substation to facilitate the connection between the solar energy facility and the Eskom electricity grid.
» A new 132kV overhead power line (OPHL) between the on-site substation and the existing Ferrum Substation[1].
» Battery storage mechanism with a storage capacity of up to 300MWh.
» Water purification plant.
» Site Offices and Maintenance Buildings, including workshop areas for maintenance and storage.
» Batching plant.
» Temporary laydown areas.
» Internal access roads and fencing around the development area.

The applicant is also proposing the following:

» Alternative 1 - Upgrade approximately 3,6km of the T26 gravel road between the project site and the N14; or
» Alternative 2 - The construction of a new access road and the formalisation of an informal access road between the project site and the T25 gravel road, approximately 5km in length.

Site-specific social and environmental specialist assessments will be undertaken in order to delineate areas of potential sensitivity within the Remaining Extent of the Farm Lyndoch 432. The specialist studies will identify the position of and assess the localised impact of each proposed solar energy facility. Once constraining factors have been determined, the layout for each solar energy facility can be planned to minimise any potential social and environmental impacts.

[1] The construction of the 132kV overhead power line will be assessed as part of a separate Basic Assessment process which will consider feasible alternatives for the power line route.

USE OF SOLAR PV TECHNOLOGY AS THE RENEWABLE ENERGY TECHNOLOGY FOR THE HYPERION SOLAR PV DEVELOPMENTS

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

Figure 1: Solar PV facility (Courtesy of Building Energy South Africa (Pty) Ltd)

The Photovoltaic Cell

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

The Inverter

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

The Support Structure

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

The Battery Storage mechanism

The battery storage mechanism is used for grid-storage and assisting to stabilise the electrical grid by levelling out peak loads.

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

ENVIRONMENTAL IMPACT ASSESSMENT PROCESS

As per the EIA Regulations published in terms of Section 24(5) of the National Environmental Management Act (NEMA, Act No 107 of 1998), the SPVs for each solar energy facility will require Environmental Authorisation (EA) from the National Department of Environmental Affairs (DEA) (in consultation with Northern Cape Department of Environment and Nature Conservation (NC DENC)) for the undertaking of the Hyperion Solar PV Developments. In terms of sections 24 and 24D of the National Environmental Management Act (No 107 of 1998), as read with the EIA Regulations, 2014, as amended (GNR 324 - 327), a Scoping and EIA process is required for the development of each solar energy facility. In order to obtain environmental authorisation, comprehensive and independent social and environmental studies must be undertaken in accordance with the EIA Regulations, 2014, as amended.

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

Savannah Environmental has been appointed as the independent environmental assessment practitioner (EAP) to undertake the required Scoping and EIA process, in order to identify and assess all potential environmental impacts associated with the Hyperion Solar PV Developments, and recommend appropriate mitigation measures in an Environmental Management Programme (EMPr). As part of these environmental studies, I&APs will be actively involved through the public participation process being undertaken by **Savannah Environmental.**

WHAT ARE THE POTENTIAL ENVIRONMENTAL IMPACTS ASSOCIATED WITH THE HYPERION SOLAR PV DEVELOPMENTS?

A number of potential environmental impacts associated with each solar energy facility have been identified, and will be assessed through specialist studies, including:

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

The independent specialist studies will be undertaken in two phases:

1. A Scoping phase study, wherein potential issues associated with each solar energy facility are identified and evaluated, and those issues requiring further investigation through the EIA phase are highlighted.
2. A detailed EIA phase assessment and ground-truthing of the potentially significant impacts identified in the Scoping Phase. Practical and achievable mitigation measures will be recommended in order to minimise the significance of the potential impacts identified. These recommendations will be included within an Environmental Management Programme (EMPr).

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

PUBLIC PARTICIPATION PROCESS

The sharing of information forms the basis of the public participation 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 all potential impacts are considered within the ambit of the study.

The public involvement process aims to ensure that:

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

YOUR RESPONSIBILITIES AS AN I&AP

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

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

HOW TO BECOME INVOLVED

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

If you consider yourself an I&AP for the Hyperion Solar PV Developments, we urge you to make use of the opportunities created by the public participation 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.

COMMENTS AND QUERIES

Direct all comments, queries or responses to:

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Fax: 086 684 0547
E-mail: **publicprocess@savannahsa.com**

To view project documentation, visit
www.savannahSA.com

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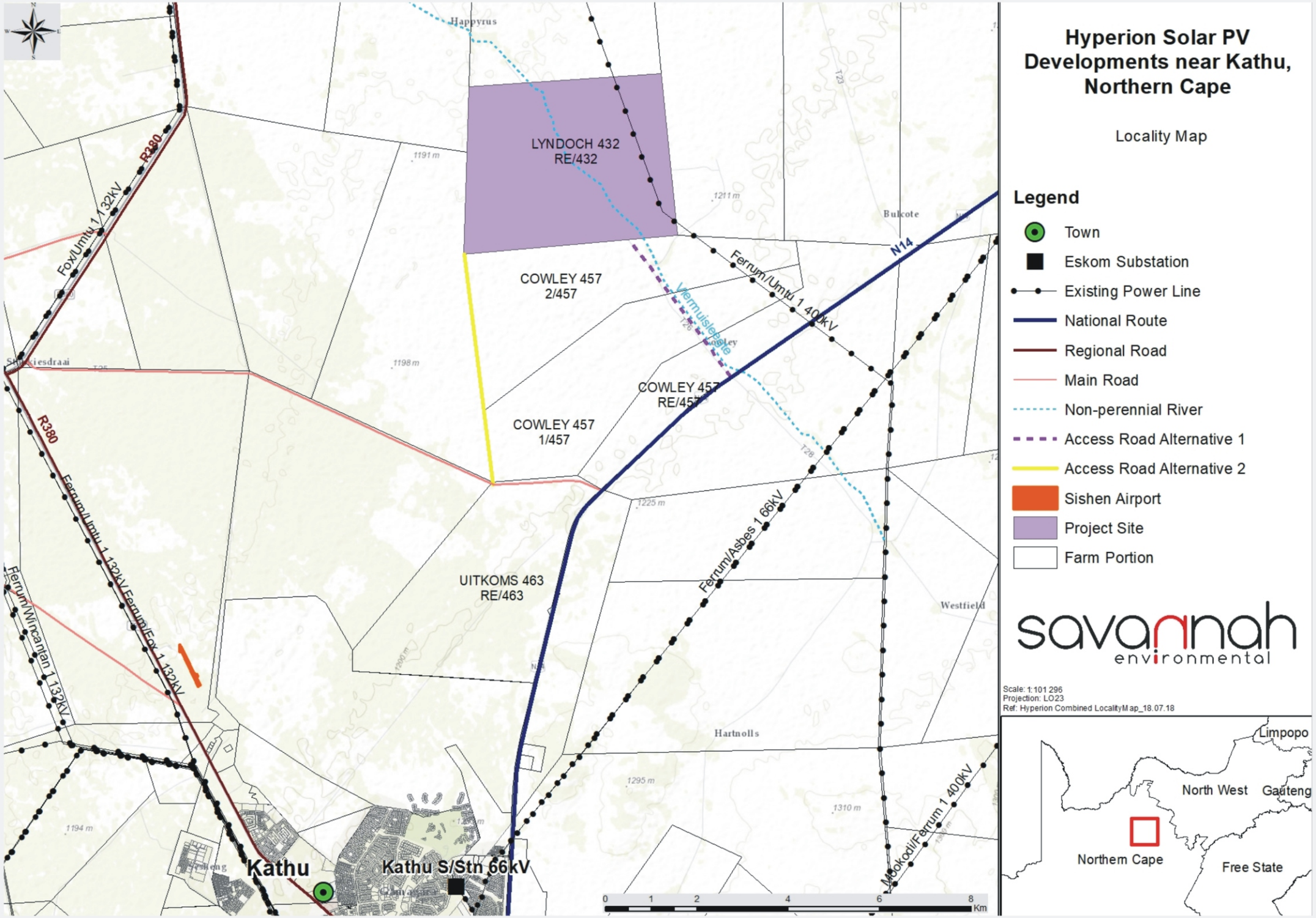
Hyperion Solar PV Developments near Kathu, Northern Cape
Locality Map
Legend
Town
Eskom Substation
Existing Power Line
National Route
Regional Road
Main Road
Non-perennial River
Access Road Alternative 1
Access Road Alternative 2
Sishen Airport
Project Site
Farm Portion
LYNDOCH 432 RE/432
COWLEY 457 2/457
COWLEY 457 RE/457
COWLEY 457 1/457
UITKOMS 463 RE/463
Kathu
Kathu S/Stn 66kV
Fox/Umtu 1 132kV
Ferrum/Umtu 1 400kV
Ferrum/Asbes 1 66kV
Ferrum/Wincanton 1 132kV
Ferrum/Umtu 1 132kV/Ferrum/Fox 1 132kV
Mokodi/Ferrum 1 400kV
R380
N14
Vermuisleegte
Happyrus
Bulcote
Westfield
Hartnolls
Scale: 1:101 296
Projection: LO23
Ref: Hyperion Combined LocalityMap_18.07.18
Limpopo
North West
Gauteng
Northern Cape
Free State
0 1 2 4 6 8 Km