**PROJECT NAME:**

# PROPOSED PLANETS ENERGY FACILITY (PHASE 1 GILIMBERG ENERGY CLUSTER) HYBRID SOLAR PV & BESS FACILITY AND ASSOCIATED INFRASTRUCTURE (up to 200MWac / 150MW-600MWh) IN CAPRICON DISTRICT (POLOKWANE LOCAL MUNICIPALITY) AND WATERBERG (MOGALAKWENA LOCAL MUNICIPALITY) LIMPOPO PROVINCE.

**DFFE REFERENCE NO: 14/12/16/3/3/2/2837**

**DWS REFERENCE NO: WU48940**

**REPORT TITLE: DRAFT ENVIRONMENTAL MANAGEMENT PROGRAMME**

**DATE: 13 NOVEMBER 2026**

**ENVIRONMENTAL ASSESSMENT PRACTITIONER:**

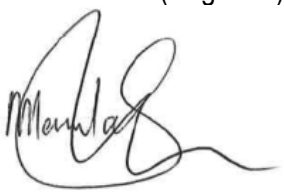
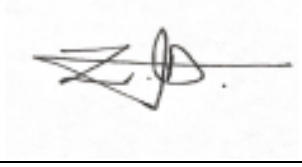
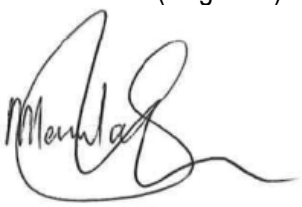
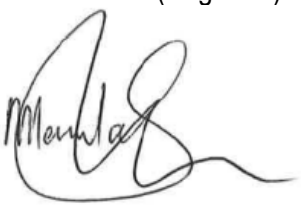
ABANTU ENVIRONMENTAL SERVICES

**APPLICANT:**

**PLANETS ENERGY FACILITY (PTY) LTD**


| OFFICE | ADDRESS | CONTACT DETAILS |
|---|---|---|
| **Gqeberha** | 41 Avon Place<br>Overbaakens<br>Gqeberha<br>6070 | **Contact Person:** Mr Sive Mlamla (Pr.Sci.Nat, Reg. EAP)<br>**Cell:** 078 207 8278<br>**Fax:** 086 685 9536<br>**Tel:** 041 582 2648<br>**Email:** info@abantuenvironmental.co.za<br>**Website:** www.abantuenvironmental.co.za |

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| **DATE** | October 2026 | November 2026 | November 2026 |

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# TERMS AND DEFINITIONS

| TERMS | DEFINITION |
|---|---|
| AUDIT | Regular inspection and verification of Construction activities for implementation of the approved EMP |
| CONSTRUCTION ACTIVITY | A Construction activity is any action taken by the contractor, his subcontractors, suppliers or personnel during the Construction process. |
| CONTRACTOR | Construction companies are appointed on behalf of the client to undertake the Construction activities, as well as their subcontractors and suppliers. |
| DWS | Department of Water and Sanitation. |
| EMERGENCY SITUATION | An incident, which potentially has the ability to significantly impact on the environment, and which, could cause irreparable damage to sensitive environmental features. Typical situations entail amongst others the:-<br>• Spill of petroleum products and lubricants into the aquatic system;<br>• Potential damage, erosion and slumping of unstable river embankments or drainage channels;<br>• Potential event of impeding the continuous flow of water to downstream water users dependent on the flow. |
| EMPR | Environnemental Management Programme Report. The EMPR for the project sets out general instructions that will be included in a contract document for the Construction phase of the project. The EMPR will ensure the Construction activities are conducted and managed in an environmentally sound and responsible manner. |
| ENVIRONMENT | The environment means the surroundings within which humans exist and that could be made up of water, air, soil, sand, plants and animals. |
| EAP | Environmental Assessment Practitioner. |
| ENVIRONMENTAL IMPACT | An impact or environmental impact is the change to the environment, whether desirable or undesirable, that will result from the effect of a Construction activity. An impact may be the direct or indirect consequence of a Construction activity. |
| ENVIRONMENTAL CONTROL OFFICER | A qualified person nominated by the appointed contractor and/or client who will ensure the day-to-day implementation of the EMP by contractors during Construction and operation of the project. |

| TERMS | DEFINITION |
|---|---|
| ENVIRONMENTAL MANAGEMENT PROGRAMME (EMPr) | A detailed plan of action prepared to ensure that recommendations for enhancing or ensuring positive environmental impacts and limiting or preventing negative environmental impacts are implemented during the life-cycle of the project. This EMPr focuses on the construction phase, operation (maintenance) phase and decommissioning phase of the proposed project. |
| GENERAL WASTE | Domestic waste, commercial waste, non-hazardous industrial waste and builders rubble e.g. paper, plastics, food, tins, wood, etc. |
| HAZARDOUS WASTE | It is any waste that contains organic or inorganic elements or compounds that may, owing to the inherent physical, chemical or toxicological characteristics of that waste, have a detrimental impact on health and the environment. |
| HERITAGE RESOURCES | This means any place or object of cultural significance, including all human-made phenomena and intangible products that are the result of the human mind. Natural, technological or industrial features may also be part of heritage resources, as places that have made an outstanding contribution to the cultures, traditions and lifestyles of the people or groups of people of South Africa |
| HERITAGE | That which is inherited and forms part of the National Estate (historical places, objects, fossils as defined by the National Heritage Resources Act, 1999 (Act No. 25 of 1999). |
| IEM | Integrated Environmental Management. |
| IMPACT | A description of the potential effect or consequence of an aspect of the development on a specified component of the biophysical, social or economic environment within a defined time and space. |
| NEMA | National Environmental Management Act. |
| REHABILITATION | Rehabilitation is defined as the return of a disturbed area, feature or structure to a state that approximates to the state (where possible) that it was prior disruption, or to an improved state. |
| PALAEONTOLOGY | Any fossilised remains or fossil trace of animals or plants which lived in the geological past, other than fossil fuels or fossiliferous rock intended for industrial use, and any site which contains such fossilised remains or trace. |
| POLLUTION | The National Environmental Management Act, 1998 (Act No. 107 of 1998) defined pollution to mean any change in the environment caused by – substances; radioactive or other waves; or noise, odours, dust or heat emitted from any activity, including the storage or treatment of waste or substances, construction and the provision of services, whether engaged in by any person or an organ of state, where that change has an adverse effect on human health or well-being or on the composition, resilience and productivity of natural or managed ecosystems, or on materials useful to people, or will have such an effect in the future. |

| TERMS | DEFINITION |
|---|---|
| PROJECT/SITE MANAGER | A person who represents the client and is responsible for enforcing the technical and contractual requirements of the project. |
| SAHRA | South African Heritage Resource Agency |
| SOLID WASTE | All solid waste, including Construction debris, chemical waste, excess cement/concrete, wrapping material, timber, tins and cans, drums, wire, nails, food and domestic waste (e.g. plastic packets and wrappers). |
| TOPSOIL | The layer of soil covering the earth which provides a sustainable environment for the germination of seeds, allows water penetration, and is a source of micro-organisms and plant nutrients. |
| WASTE | **:** Waste means any substance, whether or not that substance can be reduced, re-used, recycled and recovered<br>• that is surplus, unwanted, rejected, discarded, abandoned or disposed of;<br>• which the generator has no further use of for the purposes of production;<br>• that must be treated or disposed of; or<br>• that is identified as a waste by the relevant Minister by notice in the Gazette, and includes waste generated by the mining, medical or other sector, but—<br>• a by-product is not considered waste; and<br>• any portion of waste, once re-used, recycled and recovered, ceases to be waste. |
| WASTE DISPOSAL FACILITY | Waste disposal facility means any site or premise used for the accumulation of waste with the purpose of disposing of that waste at that site or on that premises. |
| WATER POLLUTION | The National Water Act, 1998 (Act No. 36 of 1998 defined water pollution to be the direct or indirect alteration of the physical, chemical or biological properties of a water resource so as to make it – less fit for any beneficial purpose for which it may reasonably be expected to be used; or harmful or potentially harmful to the welfare, health or safety of human beings; to any aquatic or non-aquatic organisms; to the resource quality; or to property. |
| WATERCOURSE | A natural channel or depression in which water flows regularly or intermittently in which water flows regularly or intermittently. Or a wetland, lake or dam into which, or from which, water flows; and any collection of water which the Minister may, by notice in the Gazette, declare to be a watercourse as defined in the National Water Act, 1998 (Act No. 36 of 1998). |
| WUL | Water Use License. |

# ENVIRONMENTAL ASSESSMENT PRACTITIONER

As per the requirements of the NEMA Regulations and in terms of Regulation 14 of Section 24H Registration Authority Regulations, 2016, as amended, the details and expertise levels of the EAP who prepared the report are provided in **Table *1*** below.

**Table 1:** Environmental Assessment Practitioner details

| **Contact Details** | |
|---|---|
| Consultant | Abantu Environmental Services (Pty) Ltd |
| EAP | Sive Mlamla |
| SACNASP Registration | 118495 – Environmental Sciences |
| EAPASA Registration | 2022/5204 |
| Cell | 078 207 8278 |
| Postal Address | 41 Avon Place<br>Overbaakens<br>Gqeberha, 6070 |
| Fax | 086 685 9536 |
| Email | info@abantuenvironmental.co.za |
| Website | Website: www.abantuenvironmental.co.za |

Expertise of the Lead EAP are entailed in **Table *2***.

**Table 2:** Lead EAP Profile

| | |
|---|---|
| **Environmental Assessment Practitioner:** | Mr Sive Mlamla |
| **Expertise:** | Sive Mlamla is an environmental scientist with 11 years of experience in scientific research, lecturing and environmental consulting. His key expertise includes environmental impact assessments, environmental compliance auditing, waste planning, proposal & business development, project management, strategic planning, research design & execution, remote sensing & GIS applications for land use/cover change mapping and fluvial geomorphology.<br><br>**Qualifications**<br>• M.Sc. Geography (Catchment Hydrology)<br>• B.Sc. Honours Environmental Geography<br>• B.Sc. Environmental Sciences (Botany and Geography)<br><br>**Professional registrations:**<br>• Registered Professional Natural Scientist (Pr.Sci.Nat) - Reg. No. 118495 – SACNASP<br>• Registered Environmental Assessment Practitioner (Reg. EAP (EAPASA)) - Reg. No. 2022/5204<br>**Training:** |

| | |
|---|---|
| | • Practical Implementation of Environmental Auditing and Monitoring (2025)<br>• WET-Health Tool & WET-EcoServices for Level 1B and Level 2 assessment (2025)<br>• WET-Health Tool for Level 1A assessment (2025)<br>• Environmental Impact Assessments (2025)<br>• Introduction to Synthetic Aperture Radar and Applications (2024)<br>• Earth Observation Data Analysis with Google Earth Engine (2023)<br>• People Management Skills (2017)<br>• Biodiversity spatial data management, acquisition, and analysis (2018)<br>• Water Use Licence Applications via e-WULAAS (2020)<br>• Remote Sensing (land use/cover classification) and SWAT hydrologic modelling (2017)<br><br>**Registrations and memberships:**<br>• Member of the South African Wetlands Society Reg. No. S9BPP477<br>• Member of the Southern African Association of Geomorphologists<br>• Institute of Waste Management of Southern Africa (IWMSA) Reg No. 40120001 |

As per the requirements of the NEMA Regulations and Regulation 14(6) in the S24H Registration Authority Regulations, 2016, as amended, details of the Candidate EAP who assisted in the compilation of the report under the supervision of the EAP are provided in **Table *3*** below.

**Table 3:** Candidate Environmental Assessment Practitioner details

| | |
|---|---|
| **Candidate Environmental Assessment Practitioner:** | Ms Zimkita Dalasile |
| **Expertise:** | Junior Environmental Scientist with 4 years' experience in environmental consulting and scientific research. My expertise includes environmental management, water resource management, water quality management, aquatic ecosystems, environmental impact assessments, scientific report writing, data analysis, environmental monitoring and environmental compliance audits.<br><br>**Qualifications**<br>• MSc. Environmental Management with Ecological Water Requirements<br>• Postgraduate Diploma Integrated Water Resource Management<br>• BSc. Environmental and Water Science<br><br>**Professional registration:**<br>• Candidate Environmental Assessment Practitioner (Cand. EAP (EAPASA)) - Reg. No. 2025/20366<br>• Candidate Natural Scientist (Cand.Sci.Nat.) - Reg. No. 132501 – SACNASP<br><br>**Training:**<br><br>• Introduction Environmental Impact Assessments (2024) |

# DECLARATION OF INDEPENDENCE

I, **Sive Mlamla**, in my capacity as an Environmental Assessment Practitioner, hereby declare that I –

- Act as an independent consultant
- Do not have any financial interest in the undertaking of the activity, other than remuneration for the work performed
- Have and will not have vested interest in the activity
- Have no, and will not engage in, conflicting interests in the undertaking of the activity
- Undertake to disclose any material information that has or may have the potential to influence the decision of the competent authority or the objectivity of any report, plan, or document
- Will provide the competent authority with access to all information at my disposal regarding the report, whether such information is favourable to the Client or not
- Based on information provided to me by the Client and in addition to information obtained during the course of this study, have presented the results and conclusion within the associated document to the best of my professional ability
- Reserve the right to modify aspects pertaining to the present investigation should additional information become available through on-going research and/or further work in this field
- Undertake to have my work peer reviewed on a regular basis by a competent specialist.



**Mr Sive Mlamla (Pr. Sci.Nat, Reg. EAP (EAPASA)**
**Environmental Assessment Practitioner**

# 1. INTRODUCTION

The Planets Energy Facility (Phase 1 – Gilimberg Energy Cluster) is a proposed hybrid renewable energy project consisting of a utility-scale Solar Photovoltaic (PV) plant integrated with a Battery Energy Storage System (BESS) over an area of approximately 305 ha (**Figure *1***). The facility is designed with a solar PV capacity of up to 200 MWac and a BESS of up to 150 MW / 600 MWh. The project aims to deliver dispatchable renewable energy, enhance grid reliability, and support South Africa's transition to a low-carbon energy mix. The project will be located approximately 46km West of Polokwane within the Capricorn District (Polokwane Local Municipality) and Waterberg District (Mogalakwena Local Municipality) in Limpopo Province, South Africa. The plant will connect to the Eskom Borutho substation via 132KV transmission line.

The project site is situated on communal land within two properties; Jupiter No. 717, LR, and Mars No. 718, LR under the administration of Mashashane Traditional Council.

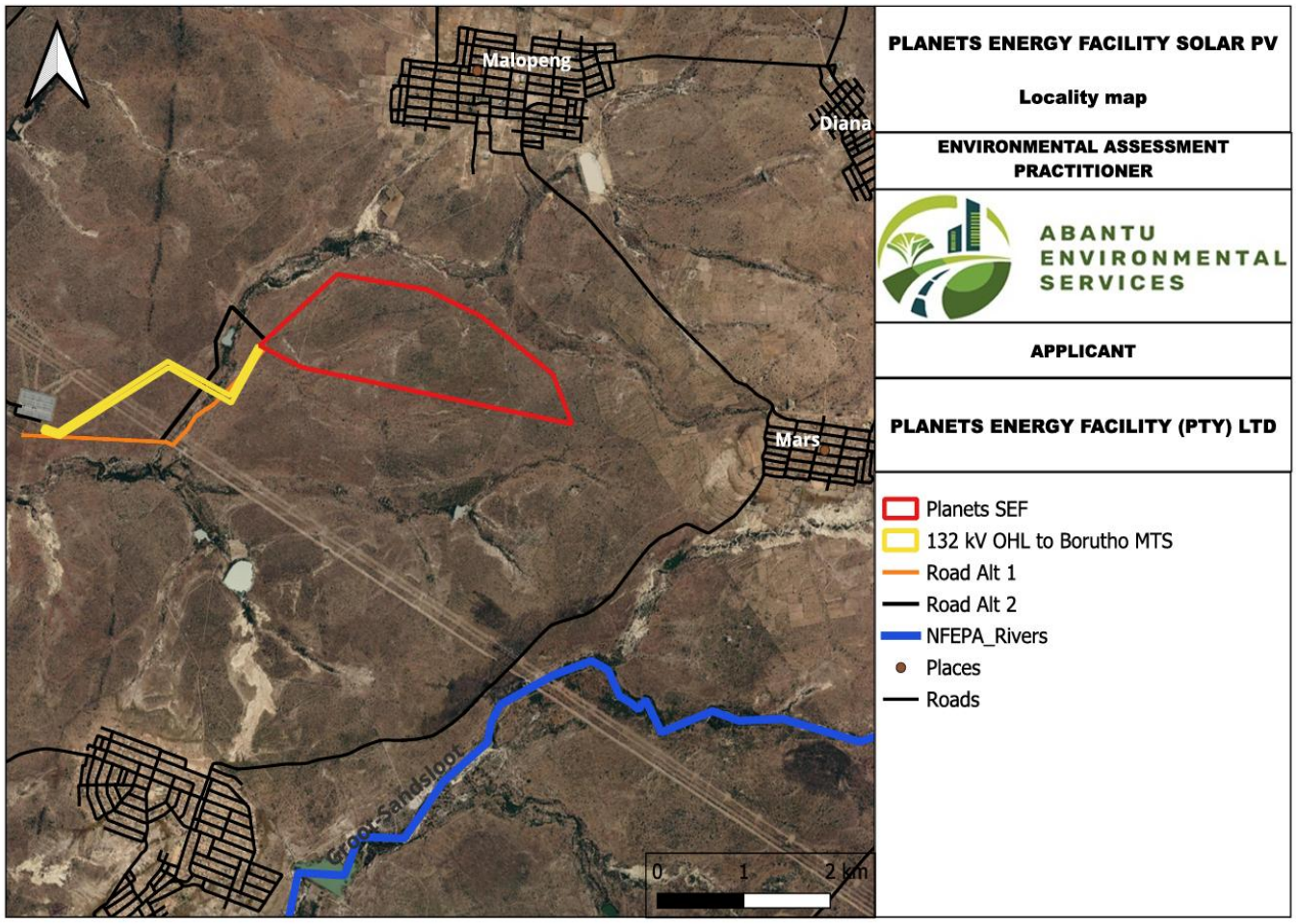



**Figure 1.** Locality map

The CEMPr has been compiled to ensure that the development is undertaken in compliance with the requirements set out in Section 28 of the National Environmental Management Act (Act No. 107 of 1998) [NEMA] and other relevant legislation under which the Duty of Care Principal is described.

## 1.1 LOCATION OF THE ACTIVITY

Property details of the site where the proposed development is located a contained in **Table 4**.

**Table 4**: Property Information

<table>
<tr><th>PROJECT ASPECT</th><th>DESCRIPTION</th></tr>
<tr><td>District</td><td>Waterberg and Capricorn District Municipality</td></tr>
<tr><td>Local Municipality</td><td>Mogalakwena and Polokwane Local Municipality</td></tr>
<tr><td>Wards</td><td>Ward 13 & 41</td></tr>
<tr><td>Development footprint size</td><td>305 ha</td></tr>
<tr><td>Coordinates</td><td>
<table>
<tr><th>Latitude (S)</th><th>Longitude (E)</th></tr>
<tr><td>SEF</td><td></td></tr>
<tr><td>23°53'45.98"S</td><td>29° 0'6.03"E</td></tr>
<tr><td>23°53'20.40"S</td><td>29° 0'38.23"E</td></tr>
<tr><td>23°53'25.61"S</td><td>29° 1'14.81"E</td></tr>
<tr><td>23°53'34.57"S</td><td>29° 1'36.68"E</td></tr>
<tr><td>23°53'56.39"S</td><td>29° 2'6.19"E</td></tr>
<tr><td>23°54'14.26"S</td><td>29° 2'14.71"E</td></tr>
<tr><td>23°53'52.86"S</td><td>29° 0'23.32"E</td></tr>
<tr><td>Transmission line</td><td></td></tr>
<tr><td>23°53'49.84"S</td><td>29° 0'8.11"E</td></tr>
<tr><td>23°54'5.52"S</td><td>28°59'54.97"E</td></tr>
<tr><td>23°53'52.73"S</td><td>28°59'29.17"E</td></tr>
<tr><td>23°54'17.52"S</td><td>28°58'44.56"E</td></tr>
<tr><td>23°54'15.93"S</td><td>28°58'38.36"E</td></tr>
</table>
</td></tr>
<tr><td>Farm Name(s) and Number (s)</td><td>
<table>
<tr><td>Farm name</td><td>Farm number</td><td>Portion</td></tr>
<tr><td>Jupiter</td><td>717</td><td>0</td></tr>
<tr><td>Mars</td><td>718</td><td>1</td></tr>
</table>
</td></tr>
<tr><td>Surveyor General 21 Digit Code</td><td>C0LS00000000071700000<br>C0LS00000000071800000</td></tr>
<tr><td>Nearest City</td><td>Polokwane</td></tr>
</table>

## 1.2 DEVELOPMENT DESCRIPTION

The proposed solar facility (~300 hectares) will comprise of the following key components (**Figure 2**):

- Ground-mounted mono or bifacial solar PV modules installed on single-axis tracking systems designed to generate clean electricity using photovoltaic (PV) technology
- Battery Energy Storage System (BESS)
- Inverters/Transformer Stations
- On-site Substation and Switching Substation

- Operations and maintenance (O&M) building
- Access roads
- Temporary laydown areas
- Grid connection infrastructure for a 132 kV transmission line to Eskom Borutho substation

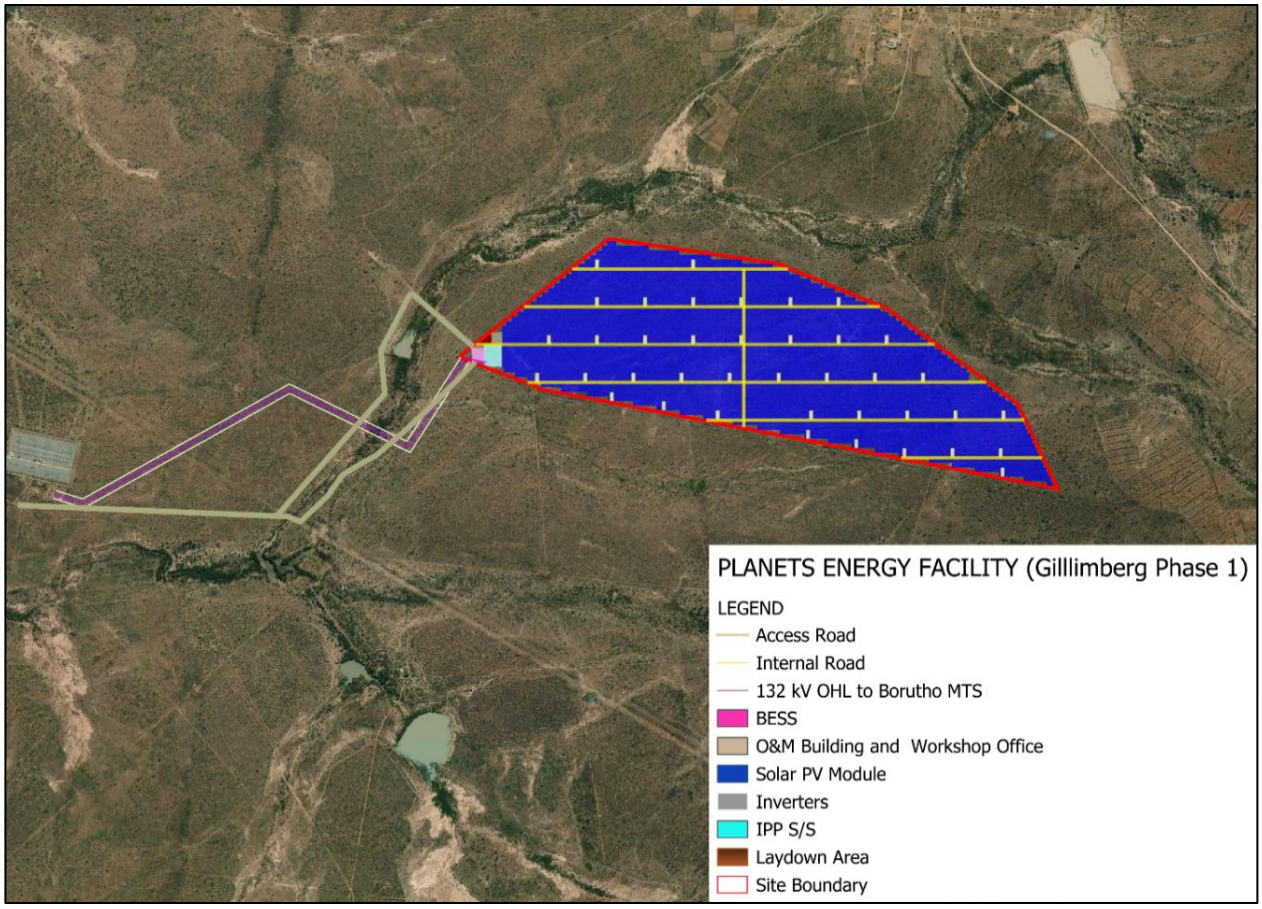



**Figure 2.** Planets Energy Facility Conceptual Design

The key components of the proposed project are summarised below:

**Table 5:** Technical details

| Component and associated infrastructure | Description/dimensions |
|---|---|
| Solar field | • Technology: Solar Photovoltaic (PV)<br>• Contracted Capacity: up to 200 Mwac<br>• Estimated Yearly Production: 454.88 9 GWh (P50) and 442.86 GWh (P90)<br>• Structure: Bifacial or Monofacial single axis tracking system<br>• Number of solar PV module: 294912 units<br>• Height: 3.5m<br>• Area of PV Array: 300 ha |

| Component and associated infrastructure | Description/dimensions |
|---|---|
| Battery Energy Storage System (BESS) | • Technology: Lithium-Ion<br>• Footprint: Up to 2 ha<br>• Height: Up to 10 m<br>• Capacity: Up to 150 MW/600 MWh<br>• The BESS is designed for a 4-hour duration, allowing effective shifting of solar energy from midday generation periods to evening peak demand periods (typically 17:00–21:00). |
| On-site Substation and Switching Substation | • Footprint: Approximately 2 ha<br>• Height of the on-site substation complex (including switching substation): Up to 10 m. However, the on-site substation will include switchgear portals up to 15 m and lightning masts up to 25 m in height.<br>• Capacity of the on-site substation complex: 132 kV<br>• Powerline height: 32 m<br>• Fence: Galvanized palisade fencing to be used at the substations<br>• Fence height: Up to 2.5 m |
| 132 kV Overhead Transmission Power Line (OHPL) | • Point of Connection: Borutho MTS<br>• Line capacity: 132 kV<br>• Approximate length: 4 km<br>• Pylon height: 32m<br>• Tower type: Self-supporting and Angle Strain towers<br>• Pylon type, span, working area and footprint:<br>  ○ Type: Monopole or steel lattice type pylons, or combination of both where required.<br>  ○ Span: The pylons will have a span of 200 m to 350 m for monopole pylons and up to approximately 500 m for lattice structures.<br>  ○ Footprint: The size of the final constructed pylon footprint depends on the type of structure used, which will typically range from approximately 0.5 $m^2$ to 8 $m^2$ for monopole pylons, and 36 $m^2$ to 64 $m^2$ for steel lattice pylons. |
| Inverter/Transformer Stations | • Number of Inverters: 64 units<br>• Height: Approximately 2 m |
| Access roads (including upgrading and widening of existing roads, where relevant) | • Existing roads will be used as far as practically achievable.<br>• Details: New Access roads will need to be established. These would either comprise farm roads (compacted dirt/gravel) or paved roads.<br>• Length: up to 5 km<br>• Width: Approximately 8 -15 m |
| Internal roads | • New internal service roads will need to be established. These would either comprise farm roads (compacted dirt/gravel) or paved roads.<br>• Length: up to 15 km<br>• Width: up to 10 m |
| On-site medium voltage internal cables | • Placement: Underground (maybe above ground pending technical constraints) |

| Component and associated infrastructure | Description/dimensions |
|---|---|
| | • Capacity: 33 kV<br>• Depth: Maximum depth of 1.5 m |
| Auxiliary Buildings | • Type: These include, but are not limited to, Operation and Maintenance (O&M) building / centre, site office, workshop, staff lockers, bathrooms/ablutions, warehouses, guard houses, etc.<br>• Cumulative Footprint: Approximately up to 5000 $m^2$<br>• Height: Up to 10 m |
| Work area during the construction phase (i.e. laydown area) | • Temporary Laydown: Up to 4 ha. |
| Fencing around the PV Facility Perimeter | • Type: palisade or mesh or electric fencing<br>• Height: Up to 3 m |

## 1.3 STRUCTURE OF THE EMPR

For the holistic approach to the management of environmental impacts during the construction of the proposed Walmer housing development, this EMPr sets out the methods by which proper environmental controls are to be implemented by the Contractor and all other parties involved. The EMPr is divided into four phases of development. Each phase has specific issues unique to that period of the construction and operation. The impacts are identified and given a brief description. The phases of the development are identified below:

**Table 6:** Development phases and their descriptions

| Phases | Description |
|---|---|
| Planning and Design | This section will provide guidelines on Planning and Design activities such as complying to relevant legal environmental and social authorisations; site establishment and security; public safety; environmental induction and training and awareness; site access and health and safety. |
| Construction | This section will provide guidelines on the construction methods and considerations. Environmental actions, procedures and responsibilities as required during the construction phase are specified. These specifications will form part of the contract documentation and therefore the Contractor will be required to comply with these. |
| Rehabilitation | This section of the EMPr provides management principles for the rehabilitation phase of the Development. This will include best practice, procedures and responsibilities as required for various associated activities. |
| Operation | This section will provide guideline on the practice and responsibility as required for various activities during operation. |

# 2. RECEIVING ENVIRONMENT

## 2.1 CLIMATE

The Limpopo province is characterized by hot summers with an average maximum temperature of 27ºC. Winters in the province are mild with an average minimum temperature of 18ºC. High rainfall variability makes the region prone to drought and floods. The majority of the rainfall is accumulated during the austral summer months, ranging from 200 to 1600mm. The dominant climate type is semi-arid, followed by humid subtropical climates and arid (Moumakwe, 2024). Polokwane, the capital city of the province is situated roughly in the center of the province. Polokwane experiences an arid climate typified by a rainy season during summer and a distinct dry period in winter. The yearly average rainfall stands at 495 mm, with December or, less frequently, January being the wettest month, while July records the lowest precipitation levels (Polokwane Local Municipality SDF, 2024).

## 2.2 TOPOGRAPHY AND HYDROLOGY

The area is characterized by gently undulating terrain and minimal steep slopes. Elevation ranges from 1202 m to 1279 m, with an average slope of 2.2%. The proposed site is situated within quaternary catchment A61G, located within the Limpopo-Olifants Water Management Area. An ephemeral watercourse was observed in close proximity to the project area, and the proposed transmission route intersects the aquatic feature.

## 2.3 GEOLOGY AND SOILS

The proposed area is underlain by the Goudplaats–Hout River Gneiss Suite, which comprises light to dark grey migmatitic tonalite, trondhjemite, granodiorite, monzodiorite, and leucogneiss. The gneisses range from massive to layered, are leucocratic to dark grey, and vary in grain size from fine-grained to pegmatoidal (Dippenaar and Rooy, 2014). The Goudplaats Gneiss is dark grey, fine-grained, and predominantly deformed by ductile processes, reflecting an older and more intensely metamorphosed component of the suite. In contrast, the Hout River Gneiss is pinkish-grey, pegmatoidal, and highly fractured and weathered, representing a younger and more brittle unit (Tshipala, 2018).

## 2.3 TERRESTRIAL AND AQUATIC BIODIVERSITY

### 2.3.1 TERRESTRIAL

According to the National South African Vegetation Map (2018), the study area falls within both the Central Bushveld Bioregion, within the Savanna Biome. The vegetation types that occur in this area include the Polokwane Plateau Bushveld and Makhado Sweet Bushveld. The proposed Solar PV facility site is largely located within the Polokwane Plateau Bushveld, while most of the associated transmission line passes through the Makhado Sweet Bushveld, with a small portion intersecting the Polokwane Plateau Bushveld. The vegetation types are described below:

**(a) Polokwane Plateau**

This vegetation type occurs on the higher plains around Polokwane, north of the Strydpoort Mountains and south of the Makhado Sweet Bushveld. Vegetation and landscape features include moderately undulating plains with short open tree layer with well-developed grass layers to grass plains with occasional trees at higher altitudes (Mucina and Rutherford, 2006). This

habitat is characterised by open savannah dominated by Red Grass (*Themeda triandra*) and scattered Umbrella Thorn (*Acacia/Vachellia tortilis*) and Silky thorn (*Acacia/Vachellia rehmanniana*) trees. Much of this habitat has been altered due to agricultural activities and the most pristine examples can be found in and around the Polokwane Nature Reserve (Limpopo Birding Routes, n.d.). The conservation status for this vegetation type is classified as **Least Concern (LC)**.

**(b) Makhado Sweet Bushveld**

The vegetation occurs on plains and slopes of the Soutspanberg, east of the Waterberg and surrounding the Blouberg and Lerataupje Mountains, and north of the Polokwane Plateau and west of the escarpment, extending south to Mokopane and north to Vivo in the Limpopo Province. The landscape is characterised by slightly to moderately undulating plains, with altitude ranging from 850- 1200 m. The vegetation is described as short stubby bushveld with a poorly developed grass layer (Biodiversity Africa, 2025). The conservation status for this vegetation type is classified as **Vulnerable (VU)**.

According to Limpopo Conservation Plan (2013), the proposed development footprint falls within Critical Biodiversity Areas (CBA) 2.

### 2.3.2 AQUATIC BIODIVERSITY

According to the national web-based environmental screening tool, the aquatic biodiversity sensitivity of the site is rated as Low. However, an ephemeral watercourse was observed in close proximity to the project area, and the proposed transmission route intersects this watercourse.

## 2.4 SOCIO-ECONOMIC ATTRIBUTES

### 2.4.1 District municipalities within the study area

The proposed project stretches over two District Municipalities: Waterberg (Mogalakwena Local Municipality) and Capricorn (Polokwane Local Municipality) in the Limpopo Province.

**(a) Waterberg District Municipality**

The Waterberg District Municipality is a Category C municipality located in the southwestern part of the Province. The district is strategically located in sharing its borders with Capricorn District Municipality in the north and Sekhukhune District Municipality in the east. The municipality is the biggest district in the province, making up just more than a third of its geographical area. The largely rural district is made-up of five local municipalities, namely; Bela-Bela, Lephalale, Modimolle-Mookgopong, Mogalakwena, and Thabazimbi.

**(b) Capricorn District Municipality**

Capricorn District Municipality is situated in the centre of the Limpopo Province, sharing its borders with four district municipalities namely; Vhembe to the north-east, Mopani to the east, Sekhukhune to the south and Waterberg to the west. The district is situated at the core of economic development in the Limpopo Province and includes the capital of the province, the City of Polokwane. The district is made up of four local municipalities, namely; Blouberg, Lepelle-Nkumpi, Molemole and Polokwane.

### 2.4.2 Local municipalities within the study area

The proposed project stretches over two local Municipalities: Mogalakwena Local Municipality and Polokwane Local Municipality.

#### (a) Mogalakwena Local Municipality

The Mogalakwena Local Municipality covers an area of approximately 6,166 square kilometers, which is equivalent to 616,600 hectares. and constitutes 12% of the total Waterberg District area (Mogalakwena Local Municipality IDP, 2025). According to Census (2022), the municipality has a total population of 378 198 and 109 294 households with an estimated population growth rate of 2.1% in 2022. In terms of educational attainment, 11.2% have no formal schooling, 8.4% completed/have some primary education, 35,8% have some form of secondary education, 31.7% have completed matric, 8.7% have some form of higher education, and 8.7% have no form of schooling. The total number of economically active people in the municipality is 78 647 with an unemployment rate of 40.2%. The unemployment rate of Mogalakwena is almost double that of the other municipalities in the district.

The economy of Mogalakwena municipality is primarily driven by general government services (20,01%), wholesale and retail trade (18,71%), and business services (16,17%). The primary economic sector contributes 12,36% of the municipal economy of which 2.82% is attributed to agriculture and 9.54% to mining (Mogalakwena Local Municipality IDP, 2025).

#### (b) Polokwane Local Municipality

In 2016, a portion of the former Aganang local municipal area was incorporated into the City of Polokwane. The land area of Polokwane expanded from around 374 000 hectares to approximately 505 000 hectares. City of Polokwane is the economic hub of Limpopo Province and is strategically located to be the administrative and economic capital of the province.

According to Census (2022), the municipality has a total population of 843 459 and 249 443 households. Between 2013 and 2023, the average annual population growth rate was approximately 1.44%. Educational attainment levels have improved over time, with the proportion of residents without formal schooling decreasing from 7.7% in 2011 to 6.6% in 2022. The number of individuals with matric qualifications increased significantly over the same period.

The municipality is made up of various industries and includes agriculture, mining, manufacturing, electricity, construction, trade, transport, finance and community services. The sector that contributed the largest in the municipality in 2023 is the community services accounting for 42.55% of the total gross value added, with the electricity sector contributing the least with a contribution of 0.87% of the total GVA.

### 2.5 FINAL COMPOSITE MAP

The environmental sensitivities/constraints of the sites are illustrated in ***Figure 3*** below.

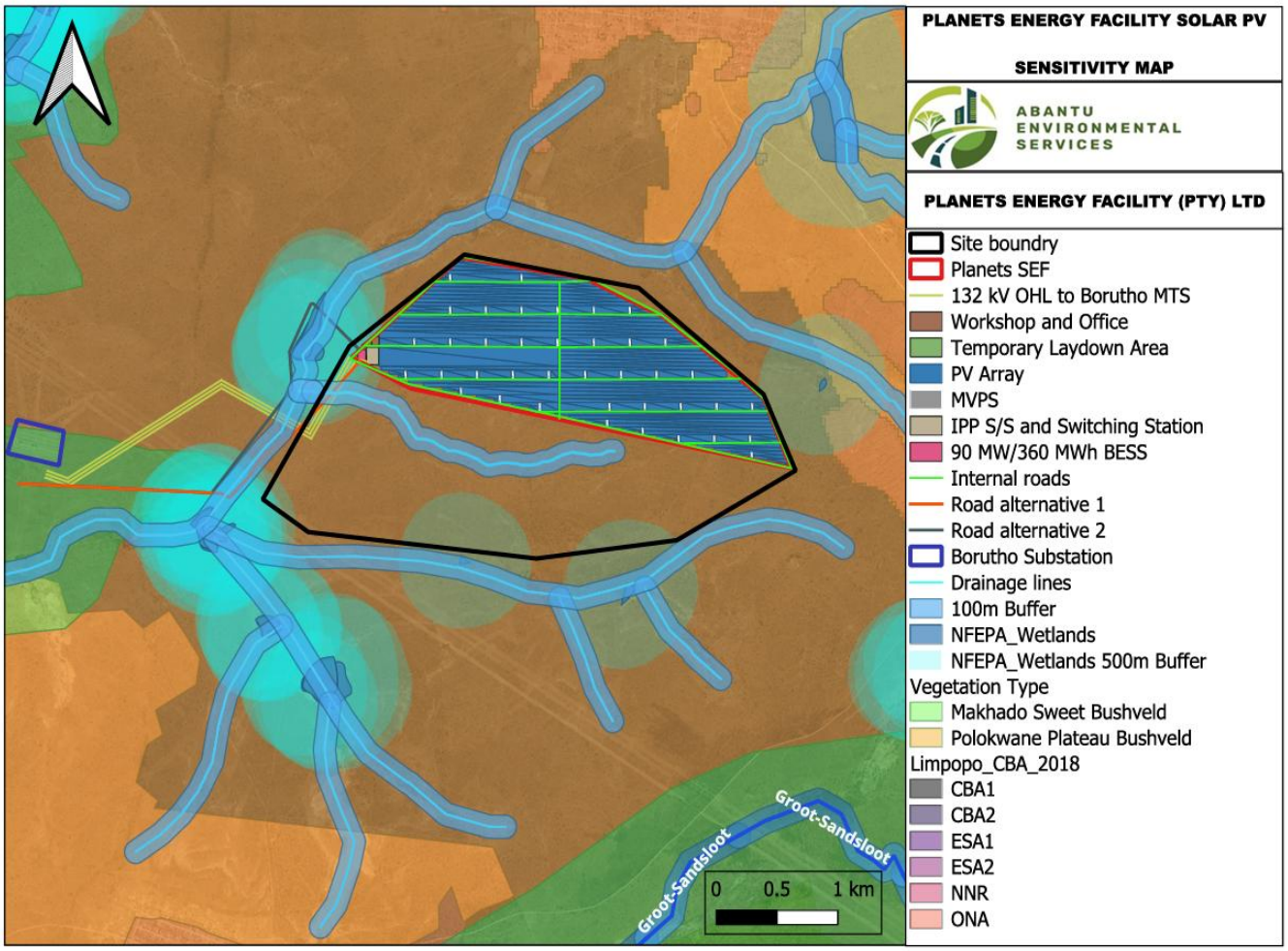



**Figure 3:** Final composite map

## 3 PURPOSE OF THE ENVIRONMENTAL MANAGEMENT PROGRAMME

The EMPr forms part of the contractual obligations to which all contractors/employees involved in construction, maintenance, or decommissioning work must be committed. It serves as a guideline and baseline information document for the construction and operations of the proposed project and aims to comply with section 24N of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as well as the Environmental Impact Assessment Regulations, 2014 as amended.

This section outlines the environmental management guideline measures as encompassed in **Appendix 4** of the EIA Regulations as amended that will be undertaken to avoid or minimize impacts on the environment throughout all phases of the proposed development.

The content of the EMPr prepared in terms of the Regulations is outlined in **Table 7** below. The relevant sections of the EMPr in which the requirements are addressed, is also outlined.

**Table 7:** Alignment to Amended NEMA 2014 EIA Regulations, Appendix 4 of GNR 326 of 2017

| Prescribed content of an EMPr | Reference in the EMPr |
|---|---|
| 1. (1) An EMPr must comply with section 24N of the Act and include-<br>(a) details of –<br>(i) the EAP who prepared the EMPr.<br>(ii) the expertise of that EAP to prepare an EMPr, including curriculum vitae. | Before Section 1 |
| (b) a detailed description of the aspects of the activity that are covered by the EMPr as identified by the project description. | Section 1.3 |
| (c) a map at an appropriate scale which superimposes the proposed activity, its associated structures, and infrastructure on the environmental sensitivities of the preferred site, indicating any areas that should be avoided, including buffers. | Section 1, Figure 1. **Figure *3*** |
| (d) a description of the impact management outcomes, including management statements, identifying the impacts and risks that need to be avoided, managed and mitigated as identified through the environmental impact assessment process for all phases of the development including-<br>(i) planning and design.<br>(ii) pre-construction activities.<br>(iii) construction activities.<br>(iv) rehabilitation of the environment after construction and where applicable post closure.<br>(v) where relevant, operation activities. | Section 6, 7, 8 & Section 9 |
| (f) A description of proposed impact management actions, identifying the manner in which the impact management outcomes contemplated in paragraphs (d) will be achieved, and must, where applicable, include actions to –<br>(i) Avoid, modify, remedy, control or stop any action, activity or process which causes pollution or environmental degradation.<br>(ii) Comply with any prescribed environmental management standards and practices.<br>(iii) Comply with any applicable provisions of the Act regarding closure, where applicable.<br>(iv) Comply with any provisions of the Act regarding financial provisions for rehabilitation, where applicable. | Section 6, 7, 8 & Section 9 |
| (g) The method of monitoring the implementation of the impact management actions contemplated in paragraph (f). | Section 6, 7, 8 & Section 9 |
| (h) The frequency of monitoring the implementation of the impact management actions contemplated in paragraph (f). | Section 6, 7, 8 & Section 9 |
| (i) An indication of the persons who will be responsible for the implementation of the impact management actions. | Section 10 |
| (j) The time periods within which the impact management actions contemplated in paragraph (f) must be implemented. | Section 6, 7, 8 & Section 9 |
| (k) The mechanism for monitoring compliance with the impact management actions contemplated in paragraph (f). | Section 11 |
| (l) A program for reporting on compliance, taking into account the requirements as prescribed by the Regulations. | Section 11 |

| Prescribed content of an EMPr | Reference in the EMPr |
|---|---|
| (m) An environmental awareness plan describing the manner in which –<br>(i) The applicant intends to inform his or her employees of any environmental risk which may result from their work.<br>(ii) Risks must be dealt with in order to avoid pollution or the degradation of the environment. | Section 4.2 & Section 11 |
| (n) Any specific information that may be required by the competent authority. | Not applicable |
| 1. (2) Where a government notice gazetted by the Minister provides for a generic EMPr, such generic EMPr as indicated in such notice will apply. | Not applicable |

The main objectives of this EMPr are therefore to:

- Outline environmental management measures related to project activities and provide project contractors with guidelines for carrying out Construction activities in such a way as to minimize environmental impacts;
- Be used as a foundation for the specific environmental management instructions contained in Construction contract documents, where compliance will be a contractual obligation for contractor(s);
- Be used as an educational tool, for orientation and training of project personnel and contractors;
- To outline functions and responsibilities of responsible persons;
- To state standards and guidelines, which are required to be achieved in terms of environmental legislation;
- To outline mitigation measures and environmental specifications which are required to be implemented for all phases of the project in order to minimize the extent of environmental impacts, and to manage environmental impacts associated with the proposed project; and
- To prevent long-term or permanent environmental degradation.

## 3.1 ENVIRONMENTAL CODE OF CONDUCT

One of the objectives of the EMPr is to ensure that all the workforce, contractors, sub-contractors, and construction staff understand environmental issues and potential impacts on-site activities. This environmental code of conduct provides the basic rules that must be strictly adhered to.

It is the responsibility of the Site Environmental Officer, the Environmental Officer and ECO (as appointed) to ensure that each contractor, sub-contractor, and workforce understand and adhere to the Code of Conduct.

All persons are obliged to keep to the rules of this code of conduct. Ignorance, negligence, recklessness, or a general lack of commitment resulting in environmental degradation or pollution must not be tolerated.

**Environmental Rules**

- Do not waste electricity, water, or consumables;
- Only use authorised accesses;
- Do not litter;
- Dispose solid waste to the correct waste containers provided;

- Prevent pollution;
- Use the toilet facilities provided;
- Do not dispose contaminated wastewater to the storm water or the environment;
- Immediately report any spillage from containers, plant, or vehicles;
- Do not burn or bury any waste in the sand;
- Do not trespass onto private properties;
- Strictly leave all animals alone. Never tease, catch, or set devices to trap or kill any animal;
- Never damage or remove any trees, shrubs, or branches unless it forms part of working instructions;
- Do not deface, draw, or cut lettering or any other markings on trees, rocks or buildings in the area;
- Know the firefighting procedure and locations of firefighting equipment; and know the environmental incident procedures.

## 3.2 CONTRACTUAL OBLIGATION

This EMPr must be included in all tender and contract documentation associated with the development. Note that notwithstanding the Companies Act, 2008 (Act No. 71 of 2008), or the Close Corporations Act, 1984 (Act No. 69 of 1984), the directors of a company or members of a close corporation are jointly and severally liable for any negative impact on the environment, whether advertently or inadvertently caused by the company or close corporation which they represent, including damage, degradation or pollution.

# 4 MANAGEMENT AND MONITORING PROCEDURE

## 4.1 ORGANIZATIONAL STRUCTURE AND RESPONSIBILITY

This section indicates the party responsible for implementing the environmental measures and action plans laid out in this EMPr. Formal responsibilities are necessary to ensure that key procedures are executed. Specific responsibilities of the Project Proponent, Project Manager, Site Manager/Engineer, Contractor/Operator and Environmental Control Officer are as detailed below.

**Project Developer shall:**

- Be fully acquainted with the EMPr for the project;
- Ensure that the Project Engineer and the Contractor/Operator are aware of all specifications, legal constraints, standards, and procedures pertaining to the project specifically with regard to the environment;
- Ensure that all stipulations within the EMPr are communicated and adhered to by the Project Engineer and the Contractor/Operator;
- Monitor the implementation of the EMPr throughout the project by means of regular site visits and meetings; and
- Order the removal of any person(s) and/or equipment in contravention of the specifications of the EMPr.

**The Project Manager (Engineer) shall:**

- Be fully conversant with the EMPr;
- Ensure compliance with the EMPr;
- Have overall responsibility for the implementation of the EMPr;
- Liaise with the Project Manager and Contractor/Operator on matters concerning the environment;
- Prevent actions that will harm or may cause harm to the environment, and take steps to prevent pollution of the site;
- Implement remedial measures in the event of pollution incidents or environmental impacts;
- Monitor and verify that environmental impacts are kept to a minimum;
- Review and approve construction methods where necessary; and
- Order the removal of any person(s) and/or equipment in contravention of the specifications of the EMPr.

**The Contractor shall:**

- Be fully conversant with the EMPr;
- Ensure compliance with the EMPr;
- Ensure that all the environmental specifications contained within this EMPr are adhered to at the site;
- Regularly liaise with the Site Manager on matters relating to the environment; and 
- Confine activities to the demarcated construction site.

The above responsibilities listed for the Contractor will also apply to any appointed sub-consultants.

**The Environmental Control Officer (ECO) shall**:

- Be fully conversant with the EMPr;
- Be fully conversant with all environmental legislation and ensure compliance;
- Ensure that all the environmental specifications contained within this EMPr are adhered to at the site;
- Regularly liaise with the Site Manager on matters relating to the environment; and
- Compile monthly reports as to the progress of the construction phases and report to all parties involved (Site Manager, Project Proponent).

## 4.2 ENVIRONMENTAL AWARENESS TRAINING

Training and environmental awareness is an integral part of a complete EMPr. The overall aim of the training will be to ensure that all site staff is informed of their relevant requirements and obligations pertaining to the relevant authorizations, licences, permits and the approved EMPr and protection of the environment. Environmental awareness training courses should be run for all personnel on site. Two types of courses should be run, one for the Contractor's and Subcontractor's management and one for all site staff and labourers. Courses shall be run in the morning during normal working hours at a suitable venue provided by the Contractor. All attendees shall remain for the duration of the course and sign an attendance register on completion that clearly indicates participant's names, a copy of which shall be handed to the ECO.

- The size of each session shall be limited to 30 people. The Contractor shall allow for sufficient sessions to train all personnel. Subsequent sessions shall be run for any new personnel coming onto site. A Method Statement with respect to the organization of these courses shall be submitted.
- Notwithstanding the specific provisions of this clause, it is incumbent upon the Contractor to convey the sentiments of the EMPr to all personnel and Subcontractors involved with the Works.

### 3.2.1 Training Course for Management and Foremen

- The environmental awareness training course for management shall include all management staff and foremen. The course, which will be presented by the ECO, will be of approximately one-hour duration.
- The initial course shall be undertaken not less than 7 days prior to commencement of work on site. Subsequent courses shall be held as and when required.

### 3.2.2 Training Course for Site Staff and Labour

- The environmental awareness training course for site staff and labour shall be presented by the Contractor's SHE Officer from material provided by the ECO unless otherwise required by the Project Specification. The course will be approximately one-hour long.
- The course shall be run not more than 7 days after commencement of work on site with sufficient sessions to accommodate all available personnel. Subsequent courses shall be held as and when required.

### 3.2.3 Construction Personnel Information Posters

- The Contractor shall erect and maintain information posters for the information of his employees depicting actions to be taken to ensure compliance with the EMPr. Construction personnel information posters shall be laminated and erected in all eating areas, workshops, and site offices. The Contractor shall ensure that the construction personnel information posters are not damaged in any way and shall replace them if any part becomes illegible.
- Examples of these posters will be supplied to the Contractor by the ECO in electronic format.

### 3.2.4 The Environmental Awareness Training Programme

The environmental awareness training programme should include:

- The induction of all construction and operation staff;
- Signing by all persons, an acknowledgement of receiving and understanding the induction;
- Identification of environmental risks and job specific training on addressing these risks; and training on the implementation of emergency procedures (where necessary).

### 3.2.5 Topics Covered by the Environmental Awareness Programme

Various topics to be entailed by environmental awareness programmes include by not limited to:

- What is meant by “Environment”?
- Why does the environment need to be protected and conserved?
- How can construction activities impact on the environment?
- What can be done to mitigate against such impacts?
- Awareness of emergency and spills response provisions.

# 5 LEGISLATIONS AND GUIDELINES

All the applicable environmental standards contained within the environmental legislation will be adhered to. Below are applicable legislations and guidelines for the proposed development and have been identified as applicable:

| Legislation/ guidelines | Summary | Legal requirement for this project |
|---|---|---|
| **NATIONAL** | | |
| **The Constitution of South Africa, 1996 (Act No.108 of 1996)** | The Constitution is the highest and the supreme law in South Africa. The Bill of Rights in chapter 2 section 24 of the Constitution of South Africa Act (Act 108 of 1996) makes provisions for environmental issues and declares that: "Everyone has the right –<br>a) to an environment that is not harmful to their health or well-being; and<br>b) to have the environment protected, for the benefit of present and future<br>c) generations, through reasonable legislative and other measures that:<br>i. prevent pollution and ecological degradation;<br>ii. promote conservation; and<br>secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development". | The applicant has an obligation to ensure that the project is undertaken in a manner that respects and protects the constitutional rights of all interested and affected parties. The applicant must ensure that the project environment is not harmful and that measures are implemented to prevent pollution so that future generations can enjoy the social and ecological benefits. |
| **National Environmental Management Act, 1998 (Act No.107 of 1998) as amended** | The National Environmental Management Act, 1998 (Act No.107 of 1998) (NEMA) is a 'principles based Act' and is an overarching statute regulating various aspects of natural resources use, integrated environmental management and pollution control. The Act provides for the right to an environment that is not harmful to the health and wellbeing of the South African people; sustainable development, environmental protection, equitable distribution of natural resources; and the formulation of environmental management frameworks. Its definition of the environment includes the land and water of the earth, microorganisms, plant and animal life or a combination | The applicant must ensure that construction and operation of activities must be conducted according to the generally accepted principles of sustainable development, integrating social, economic, and environmental factors. |

| Legislation/ guidelines | Summary | Legal requirement for this project |
|---|---|---|
| | of those things, and the inter relationships among them. The Act aims to provide for cooperative environmental governance by establishing principles for decision making on matters affecting the environment, institutions that will promote co-operative governance, and procedures for coordinating environmental functions exercised by organs of state. Section 24 Provides for the prohibition, restriction and control of activities which are likely to have a detrimental effect on the environment. | An application for Environmental Authorisation is being submitted on behalf of the client in line with the requirements of NEMA since the proposed project will trigger listed activities which require authorization prior to commencement.<br>As part of the EIA process, mitigation measures will be proposed to ensure that the significance of the predicted impacts is reduced thus protecting the environment from degradation. |
| **Environmental Impact Assessment Regulation, 2014 as Amended** | The Environmental Impact Assessment (EIA) Regulations promulgated under NEMA in 2014 provide a list of activities which are subject to an Environmental Authorisation (EA) process prior to construction or implementation. In accordance with the 2014 EIA Regulations, (as amended) an EIA process is required owing to the applicability of the activities listed. According to the NEMA Regulations these activities may not commence without environmental authorization from the competent authority which requires the investigation, assessment and statement of potential impact of activities and must follow the procedure as described in the EIA Regulations. A Basic Assessment (BA) process must be applied to an application if the authorisation applied for is in respect of an activity or activities listed in Listing Notices 1 and/or 3 and a Scoping and Environmental Impact Assessment (S&EIA) process must be applied to an application if the authorisation applied for is in respect of an activity or activities listed in Listing Notice 2. As the Proposed Project includes activities listed in Listing Notice 2 it is necessary that a S&EIA process is undertaken in order for the Department of Forestry, Fisheries and the Environment (DFFE) to consider the application in terms of NEMA. | An application for Environmental Authorisation is being submitted on behalf of the client in line with the requirements of NEMA EIA Regulations since the proposed project will trigger listed activities which require authorization prior to commencement |
| **National Environmental Management Biodiversity Act (Act No. 10 of 2004)** | The National Environmental Management: Biodiversity Act (NEM:BA) makes provisions for achieving the objectives of the United Nations Convention on Biological Diversity, to which South Africa is a signatory. The Bill promotes | According to Limpopo Conservation Plan (2013), the proposed development footprint falls within Critical Biodiversity Areas (CBA) 2. |

| Legislation/ guidelines | Summary | Legal requirement for this project |
|---|---|---|
| | management, conservation and sustainable use of indigenous biological resources, and provides for:<br>● the management and conservation of biological diversity;<br>● the use of indigenous biological resources in a sustainable manner; and<br>● the fair and equitable sharing of benefits arising from the commercialization through bio-prospecting of traditional uses and knowledge of generic resources.<br>The Bill gives effect to international agreements relating to biodiversity which are binding on the Republic and provides for co-operative governance in biodiversity management and conservation and provides for a National Biodiversity Institute to assist in achieving the above objectives. The Act gives wide powers to the National Biodiversity Institute to inter alia protect flora and fauna in appropriate enclosures, the collection of information, undertaking and promotion of research on indigenous biodiversity and the sustainable use of indigenous biological resources, the prevention, control or eradication of listed invasive species, biodiversity planning and other functions. This act lists all critically endangered, vulnerable and protected species. The potential occurrence of any such species will be investigated in the BA process. | |
| **National Water Act, 1998 (Act No.36 of 1998)** | In terms of chapter 3 section 12-20, water resources are to be protected, used, developed, conserved, managed and controlled. This Act recognizes that water is a scarce resource; it is a natural resource that belongs to all of South Africa's people. The National Department of Water and Sanitation is responsible for the nation's water resource and also the Minister of Department of Water and Sanitation ensures that the water resource is "protected, used, developed, conserved, managed and controlled" through the implementation of this Act (National Water Act 36 of 1998).<br>This Act makes provisions for the protection of surface water and groundwater resources and their sustainable management for the prevention and remediation of the effects of pollution, and for the control of emergency | The proposed project is located within 100m of an ephemeral stream therefore, Section 21 c and i of the National Water Act will be triggered. A WULA has been lodged with DWS. |

| Legislation/ guidelines | Summary | Legal requirement for this project |
|---|---|---|
| | occurrences. Section 21 of the National Water Act (NWA) lists water uses for which a Water Use Licence will be required. | |
| **National Environmental Management: Air Quality Act, 2004 (Act No.39 of 2004)** | The objective of the Act is to protect the environment by providing reasonable measures for the protection and enhancement of air quality and to prevent air pollution. The Act makes provision for measures to control dust, and offensive odours. Section 32 of The National Environmental Management: Air Quality Act, 2004 (Act 39 of 2004) deals with dust control measures regarding dust control. The Minister or MEC may prescribe measures for the control of dust in specified places or areas, either in general or by specified machinery or in specified instances, the steps to be taken to prevent nuisance or other measures aimed at controlling dust. The National Dust Control Regulations (2013) provides for the management and monitoring of dust. | The EMPr which will be compiled during the EIA phase must include measures for control of dust during the construction phase, If there are any exceedances observed in terms of the National Dust Regulations then a dust monitoring programme must be submitted to the Competent Authority. |
| **Conservation of Agricultural Resources Act, 1983 (No. 43 of 1983)** | This Act provides for the control over the utilisation of the natural agricultural resources of the country in order to promote the conservation of the soil, the water sources and the vegetation and the combating of weeds and invader plants. Section 5 of the Act prohibits the spread of weeds through the prohibition of their sale. GN R1084 (published under CARA) provides categories for the classification of the various weeds and invader plants, and restrictions where these species may occur. Regulation 15E of GN R1084 provides methods to be implemented for the control of weeds and invader species. | CARA finds application throughout the project lifecycle of the Proposed Project. As a result, soil conservation and erosion prevention management and mitigation measures need to be implemented. Furthermore, an Alien Invasives Species Control and Management Plan must be developed and implemented for the duration of the project life cycle of the Proposed Project |
| **Subdivision of Agricultural Land Act, 1970 (Act No. 70 of 1970), as amended** | The Subdivision of Agricultural Land Act, 1970 (Act No. 70 of 1970), as amended provides for the subdivision of all agricultural land within the Republic thereby prohibiting certain activities from being undertaken without consent from relevant authority, the Minister of the Department of Agriculture, Land Reform and Rural Development. | This Act could be relevant to the Proposed Project if any portion of land is zoned for agriculture and will need to be leased for a period exceeding 10 years is regulated by the Act |
| **National Forests Act, 1998 (No. 84 of 1998)** | The National Forest Act (NFA) empowers the Minister of DFFE to declare and list a tree, group of trees, woodland, or a species of trees as protected. A list of protected tree species is included in GN R908, published in November 2014. Section 7 of the Act prohibits the cutting and disturbance of NFA-listed trees. | The Terrestrial Biodiversity specialist has not identified any species protected in terms of the National Forest Act on site. |

| Legislation/ guidelines | Summary | Legal requirement for this project |
|---|---|---|
| **Occupational Health and Safety Act, 1993 (Act No.85 of 1993)** | The Occupational Health and Safety Act makes provisions in regulations Section 8 for the general duties of employers to their employees. The act provides for the health and safety of people at work utilising machinery and the protection of others against health and safety risks associated with activities on site/work. General Administrative Regulations (2003) describe the administration of the various OHS Regulations, including the designation of health and safety committees, the reporting and recording of incidents and occupational diseases. This Act is applicable to all contractors during the planning, construction and operational phases of the project.<br>To provide for the health and safety of persons at work and for the health and safety of persons in connection with the use of plant and machinery; the protection of persons other than persons at work against hazards to health and safety arising out of or in connection with the activities of persons at work. | The applicant must ensure that a safe working environment is provided for its employees during construction and operational phases of the project. This includes obtaining the relevant work permits, providing PPE and ensuring all required facilities are available for a working environment that is conducive. All stalls must have adequate training for their various duties and the applicant must ensure that compliance with the OHSA and Construction Regulations is monitored on a regular basis. |
| **Hazardous Substance Act (No 15 of 1973)** | This Act regulates the control of substances that may cause injury, or ill health, or death due to their toxic, corrosive, irritant, strongly sensitizing or inflammable nature of the generation of pressure thereby in certain instances and for the control of certain electronic products. To provide for the rating of such substances or products about the degree of danger; to provide for the prohibition and control of the importation, manufacture, sale, use, operation, modification, disposal or dumping of such substances and products. • Group I and II: Any substance or mixture of a substance that might by reason of its toxic, corrosive, etc., nature or because it generates pressure through decomposition, heat, or other means, cause extreme risk of injury etc., can be declared as Group I or Group II substance • Group IV: any electronic product; and • Group V: any radioactive material. The use, conveyance, or storage of any hazardous substance (such as distillate fuel) is prohibited without an appropriate license being in force. It is necessary to identify and list all the Group I, II, III, and IV hazardous substances that may be on the site and in what operational context they are used, stored, or handled. If applicable, a license is required to be obtained from the | Relevant permits must be obtained for the storage of hazardous substances if any will be stored on site during construction. The contractor must ensure that hazardous substances are stored in a safe manner and MSDS are retained on file for all hazardous substances on site. |

| Legislation/ guidelines | Summary | Legal requirement for this project |
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| **National Environmental Management: Waste Act, 2008 (Act No.59 of 2008)** | During construction waste will be produced, in either liquid, solid and/or hazardous state, and this waste will be required to be adequately and appropriately disposed of. There are several Regulations or Acts that are applicable to the proposed development in terms of waste management. To reform the law regulating waste management in order to protect health and the environment by providing reasonable measures for the prevention of pollution and ecological degradation and for securing ecologically sustainable development; to provide for institutional arrangements and planning matters; to provide for national norms and standards for regulating the management of waste by all spheres of government; to provide for specific waste management measures; to provide for the licensing and control of waste management activities; to provide for the remediation of contaminated land; to provide for the national waste information system; to provide for compliance and enforcement; and to provide for matters connected therewith. | No authorization is required in terms of NEMWA, however, the applicant must make sure that waste is managed appropriately on site. This includes separation of waste, routine cleanup of the site and spillages as well as disposal at appropriately licensed waste landfills. Where possible, waste should be recycled to minimizes volumes of waste disposed to landfills |
| **National Heritage Resources Act (Act No. 25 of 1999)** | The protection of archaeological and paleontological resources is the responsibility of a provincial heritage resources authority and all archaeological objects, paleontological material and meteorites are the property of the State. “Any person who discovers archaeological or paleontological objects or material or a meteorite in the course of development must immediately report the find to the responsible heritage resources authority, or to the nearest local authority offices or museum, which must immediately notify such heritage resources authority”. According to Section 34 of NHRA, No person may alter or demolish any structure or part of a structure which is older than 60 years without a permit issued by the relevant provincial heritage resources authority.<br><br>Section 38 Listed Activities: | According to the heritage specialist there is no sign of sites of heritage potential, graves and historical structures found in within the study area. The SAHRA has been identified as a stakeholder in this project and will be provided an opportunity to comment of the findings of the specialist studies. |

| Legislation/ guidelines | Summary | Legal requirement for this project |
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| | (a) the construction of a road, wall, power line, pipeline, canal or other similar form of linear development or barrier exceeding 300m in length;<br><br>(b) the construction of a bridge or similar structure exceeding 50 m in length;<br><br>(c) any development or other activity which will change the character of a site—<br><br>(i) exceeding 5 000 $m^2$ in extent; or<br><br>(ii) involving three or more existing erven or subdivisions thereof; or<br><br>(iii) involving three or more erven or divisions thereof which have been consolidated within the past five years; or<br><br>(iv) the costs of which will exceed a sum set in terms of regulations by SAHRA or a provincial heritage resources authority;<br><br>(d) the re-zoning of a site exceeding 10 000 m2 in extent; or<br>(e) any other category of development provided for in regulations by SAHRA or a provincial heritage resources authority, | |
| **National Energy Act (No. 34 of 2008)** | The purpose of the National Energy Act (No. 34 of 2008) is to ensure that diverse energy resources are available, in sustainable quantities and at affordable prices, to the South African economy in support of economic growth and poverty alleviation; while taking environmental management requirements into account. In addition, the Act also provides for energy planning, and increased generation and consumption of Renewable Energies.<br><br>The objectives of the Act, are to amongst other things, to:<br>• Ensure uninterrupted supply of energy to the Republic.<br>• Promote diversity of supply of energy and its sources. | As the proposed Planets Energy Facility is aimed at generating electricity via renewable energy sources, the proposed development is aligned with the objectives of this Act. |

| Legislation/ guidelines | Summary | Legal requirement for this project |
|---|---|---|
| | • Facilitate energy access for improvement of the quality of life of the people of the Republic.<br>• Contribute to the sustainable development of South Africa's economy.<br>The National Energy Act therefore recognises the significant role which electricity plays growing the economy while improving citizens' quality of life. The Act provides the legal framework which supports the development of Renewable Energy facilities for the greater environmental and social good and provides the backdrop against which South Africa's strategic planning regarding future electricity provision and supply takes place. | |
| **The Spatial Planning and Land Use Management Act, 2013 (No. 6 of 2013) (SPLUMA)** | The Spatial Planning and Land Use Management Act, 2013 (Act No. 6 of 2013) aims to confirm and regulate the role of municipalities in land use planning and management. | Objectives of the Act relevant to the Proposed Project ensure that the system of spatial planning and land use management promotes social and economic inclusion and to provide for the sustainable and efficient use of land. |
| **Integrated Environmental Management Information Guidelines Series:** | This series of guidelines was published by the Department of Environmental Affairs (DEA) and refers to various environmental aspects. Applicable guidelines in the series for the proposed project include:<br>● Guideline 5: Companion to NEMA EIA Regulations, 2010;<br>● Guideline 7: Public participation; and<br>● Guideline 9: Need and desirability. Additional guidelines published in terms of the NEMA EIA Regulations, 2014 (as amended), in particular:<br>● Guideline 3: General Guide to EIA Regulations, 2006;<br>● Guideline 4: Public Participation in support of the EIA Regulations, 2006; and<br>Guideline 5: Assessment of alternatives and impacts in support of the EIA Regulations, 2006. | These guidelines have been consulted in the compilation of this report as well as the public participation process that will be undertaken. |

| Legislation/ guidelines | Summary | Legal requirement for this project |
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| **Municipal Systems Act (Act 32 of 2000)** | The Municipal Systems Act provides for the core principles, mechanisms and processes that are necessary to enable municipalities to provide for community participation and for the integration of all activities for the overall social and economic upliftment of communities in harmony with their local natural environment. It also states that a fundamental aspect of the new local government system is the active engagement of communities in the affairs of municipalities of which they are an integral part.<br>The Act requires the implementation and monitoring of Integrated Development Plans, the setting of targets and key performance indicators, including environmental targets, as well as the preparation of by-laws and policies that deal with environmental issues. | The Polokwane and Mogalakwena municipalities has been included as I&AP for this project and the municipal IDP has been consulted in compilation of this report. |
| **PROVINCIAL LEGISLATION AND POLICY FRAMEWORK** | | |
| **Limpopo Province Green Economy Strategy (2014)** | The Green Economy Strategy for the Limpopo province (2014) was developed in alignment with the national green economy strategy elaborated in the National Green Economy Framework and Green Economy Accord, as well the Free State Provincial Growth and Development Strategy. The development process was spearheaded by the Department of Economic Development, Tourism and Environmental Affairs (DETEA).<br><br>The objective was to develop a green economy strategy to assist the province to:<br>• Improve environmental quality and economic growth<br>• Develop green industries and energy efficiency<br>• Expand productive capacity and service delivery<br>• Adopt sustainable consumption and production processes<br>• Improve policy making, permitting, monitoring and enforcement on Green Economy Initiatives/Programmes; and<br>• Create decent green jobs and build capacity of relevant personnel from DETEA, municipalities and other relevant stakeholders. | The proposed Planets Energy Facility will contribute to the objective of energy efficiency and the development of green industries while consequently promoting economic growth and is therefore consistent with the Limpopo Green Economy Strategy of 2014. |

| Legislation/ guidelines | Summary | Legal requirement for this project |
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| **Limpopo Renewable Energy Strategy and Action Plan (2024)** | This strategy recognises the need to balance economic development with environmental and social considerations. It outlines a path for harnessing Limpopo's renewable energy potential while mitigating challenges associated with the energy transition. This proactive approach aims to secure a resilient, equitable, and prosperous future for the province.<br><br>The vision is to achieve energy security for robust economic growth within the province whilst ensuring a just transition. This is accompanied by complex challenges including high unemployment, grid constraints and underdeveloped industrial bases. To overcome these challenges, there is a need to bridge the gap between supply and demand by focusing on sustainable supply. This will involve several initiatives, including enhancing the role of municipalities and promoting community involvement in solar power. | The proposed Planets Energy Facility aligns with the vision of the Limpopo Province. |
| **Limpopo Conservation Plan (2013)** | The purpose of the LCPv2 is to develop the spatial component of a bioregional plan (i.e. map of Critical Biodiversity Areas and associated land-use guidelines). Bioregional plans are one of a range of tools provided for in the Biodiversity Act1 that can be used to facilitate biodiversity conservation in priority areas outside the protected area network. The purpose of a bioregional plan is to inform land-use planning, environmental assessment and authorisations, and natural resource management, by a range of sectors whose policies and decisions impact on biodiversity. | The plan was used to screen the development against CBAs. The proposed Planets Energy Facility falls within CBA 2. |
| **MUNICIPAL** | | |
| **Polokwane Local Municipality Spatial Development Framework (2024)** | The Spatial Development Framework (SDF) is an integral part of the Integrated Development Plan (IDP) of the Polokwane Local Municipality, as required in terms of Section 26 of the Municipal Systems Act of 2000 (Act 32 of 2000). The purpose and status of the SDF are derived from the provisions of Section 21 of the Spatial Planning and Land Use Management Act, 2013 (SPLUMA).<br><br>The National Spatial Development Perspective states, “the challenges and opportunities posed by and in urban settlements, whether they are declining or expanding, necessitates a targeted response by government to achieve better urban management. Managed urbanisation and improved urban management are crucial supporting components of government’s drive for | The municipal SDF was consulted to ensure that the proposed development aligns with the spatial development objectives, land use guidelines and development vision of the municipality. |

| Legislation/ guidelines | Summary | Legal requirement for this project |
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| | accelerated shared growth, not least because of the crucial role cities, towns and urbanising agglomerations play in fostering resilient and inclusive economic growth and the sustainable development of countries and regions."<br><br>The extent and the urban-rural duality of the Polokwane municipal area requires a dual approach. In the first instance, the focus is on the total municipal area. At this level, the emphasis is on determining and assessing the wider municipal trends and tendencies with the aim to:<br>• Improving spatial functionality across the municipal area;<br>• Integrating the municipal SDF with district and provincial SDFs; and<br>• Identifying and developing a settlement typology for more detailed spatial planning. | |

# 6 PLANNING AND DESIGN PHASE

This section of the EMPr provides management principles and mitigation measures for the pre-construction phase of the project. The environmental actions, procedures and responsibilities as required during the pre-construction phase are specified below.

**Table 8.** Impacts and Mitigation Measures in Planning and Design Phase

| | Aspect | RECOMMENDED MITIGATION MEASURES/ MANAGEMENT ACTIONS | MANAGEMENT OUTCOMES | RESPONSIBLE PARTY | FREQUENCY OF ACTION |
|---|---|---|---|---|---|
| 1. | **Legal and social compliance** | • Ensure environmental authorisations namely EA and WUL is obtained for the development.<br>• Environmental Control Officer (ECO) to be appointed to monitor compliance with permits conditions.<br>• All health and safety permits and certification to be in place.<br>• Appointment of a Community Liaison Officer (CLO).<br>• Appointment of a Social Facilitator (SF) to manage social-economic aspects of the project relating to community and local business interest, particularly small, medium and micro-enterprise (SMMEs).<br>• A health and safety plan in terms of the Occupational Health and Safety Act (Act No 85 of 1993) must be drawn up by the HSE officer prior to construction to ensure workers safety.<br>• Environmental files to be compiled prior to commencement of construction activities.<br>• Methods statement to be compiled for all works with environmental aspects and impacts, for approval of the ECO.<br>• Employment and sub-contracting of locals.<br>• The Mashashane Traditional house's approval of the proposed Energy Facility should not replace regular consultation with affected households and land users during the construction and operational phase.<br>• Communication should occur through an agreed stakeholder-engagement forum, supported by scheduled meetings and written reports in appropriate local languages.<br>• Developer to engage in a process of skills development and transfer. | • Commence with development with all permits and authorisations in place. | • Planets Energy Facility | • Once-off<br>• Ongoing |

| | Aspect | RECOMMENDED MITIGATION MEASURES/ MANAGEMENT ACTIONS | MANAGEMENT OUTCOMES | RESPONSIBLE PARTY | FREQUENCY OF ACTION |
|---|---|---|---|---|---|
| 2 | **Poor site planning and layout** | • Infrastructure must be positioned within the least sensitive and already disturbed areas of the site<br>• For the drainage line Outside , on the edge/boarder Shift the southern board of the proposed site outsider the 100m buffer zone. Clearly mark the buffer with visible marker during the construction and operational phase.<br>• Ensure all known sites of cultural, archaeological, and historical significance are demarcated on the site layout plan and marked as no-go areas | • To ensure that the layout avoid environmental sensitivities | • Planets Energy Facility | • Once-off<br>• Ongoing |
| 3. | **Site establishment** | • Develop a site establishment method statement<br>• The Contractor must prepare a Construction Site Plan prior to establishing on-site. This plan must indicate:<br>• The boundaries of the site that encompass all construction-related activities.<br>• Vehicle and pedestrian access points and routes (safe diversions of routes when necessary).<br>• Laydown area/s, offices, stockpile areas, storage areas, etc.<br>• Construction site to be selected by the contractor in conjunction with the developer, consulting engineer and the ECO.<br>• The drainage lines, including their buffers, must first be receptors for the relocated plants and declared/marked and communicated as a no-go area.<br>• Buffers must be clearly demarcated in the field using stakes, danger tape, or fencing and Communicated to all construction personnel<br>• All infrastructure (panels, roads, cabling) must be micro-sited to avoid these buffers.<br>• Search, Rescue and Relocation of protected and SCC species must be undertaken before site clearance. The ecologist must undertake this, execute the relocation process, and ensure their survival at their receptor site.<br>• An experienced ecologist will determine the number of individuals to be relocated per species. | • To ensure all areas demarcated as no go areas remain undisturbed and the site camp and construction infrastructure are not sited on sensitive areas. | • Project Engineer<br>• Contractor | • Once-off |

| | Aspect | RECOMMENDED MITIGATION MEASURES/ MANAGEMENT ACTIONS | MANAGEMENT OUTCOMES | RESPONSIBLE PARTY | FREQUENCY OF ACTION |
|---|---|---|---|---|---|
| | | • Necessary permits must be obtained from the relevant authority for the rescue and relocation of the plants.<br>• Relocated individuals must be: Transplanted to a suitable habitat with similar soil and vegetation conditions (prioritise the drainage lines/systems and their buffer).<br>• An experienced ecologist must advise and assist in this task.<br>• Monitored to assess survival and establishment. At least once a month, these replanted plants must be monitored/inspected at their receptor sites to ensure survival.<br>• All data (locations, relocations, mortality) must be recorded and available for audit. | | | |
| 4. | **Existing civil services, infrastructure and properties** | • Ensure that all existing services and infrastructure are known, mapped and marked to prevent potential damage.<br>• Development of a plan to manage existing services to avoid damages<br>• Wayleaves to be obtained from the relevant custodians for affected servitudes as applicable.<br>• Property owners such as the local residents should be engaged throughout the project lifespan and engaged as necessary to promote conflict free development implementation.<br>• Where relevant, the directly affected property owners should be informed in writing and engaged to reach a consensus and those proceedings and relevant agreements to be documented. | • To ensure that existing services, infrastructure and properties are protected from damage during construction activities.<br>• To prevent or minimise disruptions to existing services and infrastructure and ensure that affected property owners are appropriately consulted. | • Contractor | • Once-off<br>• As required |

# 7 CONSTRUCTION PHASE

This section of the EMPr provides management principles and mitigation measures for the construction phase of the project. Environmental actions, procedures and responsibilities as required during the construction phase are specified. These specifications will form part of the contract documentation and therefore the Contractor will be required to comply with these specifications to the satisfactory of the Project Manager and Environmental Control Officer.

**Table 9.** Impact and Mitigation Measures in Construction Phase

| | Aspect | RECOMMENDED MITIGATION MEASURES/ MANAGEMENT ACTIONS | MANAGEMENT OUTCOMES | RESPONSIBLE PARTY | FREQUENCY OF ACTION |
|---|---|---|---|---|---|
| 1. | Legal and social compliance | • ECO to be appointed to audit environmental compliance with conditions in the EMPr and other permits and authorisations.<br>• Compliance, Monitoring, and Reporting<br>  ○ An independent Environmental Control Officer (ECO) must be appointed.<br>  ○ ECO responsibilities must include:<br>  ▪ Monitoring buffer compliance (15 m SCC buffers) Verification of search and rescue activities<br>  ▪ Erosion and stormwater inspections<br>  ▪ Alien plant control monitoring<br>  ▪ Rehabilitation progress<br>• Regular compliance reports must be submitted to the Competent Authority.<br>• CLO and Social Facilitator to be retained throughout the construction tenure to represent the surrounding communities and local business, particularly SMMEs.<br>• Initiate early and continuous engagement with local communities and recognised business forums.<br>• Clearly communicate the project's employment and procurement opportunities, ensuring transparency and fairness.<br>• Establish a Community Liaison Officer role to facilitate ongoing dialogue and resolution of problems. | • To ensure compliance with all applicable environmental authorisations, permits and EMPr requirements through effective monitoring, auditing and reporting. | • Planets Energy Facility<br>• Contractor<br>• | • As required<br>• Regularly |

| | Aspect | RECOMMENDED MITIGATION MEASURES/ MANAGEMENT ACTIONS | MANAGEMENT OUTCOMES | RESPONSIBLE PARTY | FREQUENCY OF ACTION |
|---|---|---|---|---|---|
| | | • Ensure all procurement processes follow strict transparency guidelines, including publicly advertised tenders and clearly defined selection criteria.<br>• Avoid side agreements or undocumented commitments to unauthorised groups.<br>• Incorporate risk allowances into project budgets and timelines to account for possible crime related delays.<br>• Include specific contractual clauses that address site access disruptions, security incidents, and force majeure scenarios involving criminal activity.<br>• Publish and track local hiring and subcontracting commitments.<br>• Partner with local training institutions to build workforce capacity and create legitimate access to project benefits. | | | |
| 2. | Site establishment and security | • The Developer / Proponent, SAPS (Limpopo and Mogalakwena Local Municipalities), relevant Community Policing Forums (Limpopo and Mogalakwena Local Municipalities), relevant municipal directorates, and local private security companies, work closely together during the construction phase and that information regarding the following is shared among the relevant Interested and Affected Parties (I&APs);<br>• Duration of the construction phase of the proposed development.<br>• The daily movement patterns of construction workers.<br>• The presence of construction workers and/or other personnel on-site after hours. − Any other information that is deemed important by I&APs in order to prevent any escalation of criminal activity in the affected environment.<br>• Fulltime security officers to be appointed to safeguard the site, its personnel, plant and equipment<br>• Necessary health and safety as well as road construction signage to be installed.<br>• Construction areas are to be clearly demarcated, and all construction activities are to be restricted to within these demarcated areas. | • To ensure that construction activities are undertaken within designated and secure areas, with appropriate access control and safety measures in place. | • Planets Energy Facility<br>• Contractor | • Regularly |

| | Aspect | RECOMMENDED MITIGATION MEASURES/ MANAGEMENT ACTIONS | MANAGEMENT OUTCOMES | RESPONSIBLE PARTY | FREQUENCY OF ACTION |
|---|---|---|---|---|---|
| | | • Engage registered and experienced private security providers (PSIRA-compliant).<br>• Implement comprehensive site security infrastructure, including controlled access points, perimeter fencing, and CCTV surveillance.<br>• Conduct regular security audits to adapt to emerging threats.<br>• Engage local and provincial public law enforcement agencies, as well as the private security industry, during the planning and construction phase.<br>• Report any intimidation or criminal demands to the SAPS.<br>• Train all personnel and contractors on protocols for reporting intimidation and understanding their legal rights.<br>• Provide a confidential, anonymous whistleblowing channel for reporting extortion, threats, or non-compliance. | | | |
| 3 | Water consumption | • A sustainable and lawful water supply must be utilised.<br>• Consistent water supply for construction staff and activities.<br>• If water is stored on-site, drinking water and multi-purposed water storage facilities shall be clearly distinguished and demarcated.<br>• Implement rainwater harvesting techniques, where possible.<br>• Re-use wash water for selected activities such as concrete batching. | • To ensure that water is obtained from lawful and sustainable sources and used efficiently throughout the construction phase, with water conservation, rainwater harvesting and reuse measures implemented where practicable. | • Contractor | • Once-off<br>• Regularly |
| 4 | Sanitation | • Ensure availability of ablutions for males and females. One ablution facility for every 10 workers during construction phase.<br>• Ensue regular servicing of the ablution toilets by a service provider.<br>• Ablution facilities to be located outside the regulated water area by all means practically possible. | • To ensure the provision of adequate sanitation facilities for construction personnel and prevent contamination of the surrounding | • Contractor | • Regularly<br>• As required |

| | Aspect | RECOMMENDED MITIGATION MEASURES/ MANAGEMENT ACTIONS | MANAGEMENT OUTCOMES | RESPONSIBLE PARTY | FREQUENCY OF ACTION |
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| | | | environment and water resources. | | |
| 5 | Hazardous material storage and handling | • A Hazardous Material Spill Response and Contingency Plan must be developed by the Contractor/s<br>• Hazardous materials must be stored and handled in accordance with appropriate legislation and standards, including the Hazardous Substances Act (Act No. 15 of 1973) and Occupational Health and Safety Act (No. 85 of 1993).<br>• Avoid hydrocarbon pollution to soil and watercourses.<br>• During the construction phase all oils, fuel and other maintenance equipment and supplies must be stored in a secure area with an impermeable and bound area.<br>• All stationary plant on site must have drip trays including tools such as generators and equivalent<br>• All maintenance must take place off site.<br>• Spill kits must be kept on-site and maintained.<br>• Cement and concrete must only be mixed in designated areas and on an impermeable surface | • To ensure the safe storage, handling and management of hazardous materials during construction and to minimize the risk of accidental spills. | • Contractor | • Regularly<br>• As required |
| 6. | Direct loss of indigenous vegetation and disturbance of habitats due to construction of PV facility and transmission line | • Minimise vegetation clearance and confine to the proposed infrastructural footprint.<br>• An Environmental Awareness Programme must be implemented to ensure basic environmental principles are adhered to.<br>• Use existing access roads as opposed to initiating new route, the latter should be authorised first prior to initiating.<br>• Construction must not take place outside the authorised site footprint<br>• Minimise vegetation clearance as practically possible to do so.<br>• Disturbance of semi-natural vegetation must be minimised, especially in less impacted areas.<br>• Topsoil must be:<br>• Stripped (±150–200 mm)<br>• Stockpiled separately<br>• Protected from erosion and contamination | • To minimise unnecessary clearing and impact on indigenous vegetation. | • Contractor | • Regularly |

| | Aspect | RECOMMENDED MITIGATION MEASURES/ MANAGEMENT ACTIONS | MANAGEMENT OUTCOMES | RESPONSIBLE PARTY | FREQUENCY OF ACTION |
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| | | • Topsoil must be reused during rehabilitation to preserve seed banks.<br>• Rehabilitation must:<br>• Be implemented progressively where possible<br>• Use locally indigenous species<br>• Prioritise rapid ground cover establishment<br>• No collection of firewood or harvesting of indigenous vegetation by workers is permitted. | | | |
| 7. | Disturbance of fauna and loss of habitats | • Temporary laydown and site office areas to be established in disturbed or low sensitivity areas.<br>• Vegetation clearance must be limited to the footprint of the site and only areas to be used for construction must be cleared.<br>• A pre-construction survey must identify:<br>• Burrows<br>• Nests<br>• Microhabitats<br>• Construction activities must be limited to daylight hours where possible.<br>• Trenches and excavations must:<br>• Be inspected daily and include escape ramps where necessary<br>• Speed limits must be enforced to reduce collisions with fauna.<br>• No hunting, trapping, or disturbance of fauna by workers is permitted.<br>• Where individuals are encountered, implement relocation to a suitable habitat outside the development footprint, under specialist supervision.<br>• Vegetation clearing must be undertaken in a phased manner to allow fauna and invertebrates to disperse naturally. | • Prevent the loss of the faunal community. | • Contractor | • Regularly |
| 8. | Disturbance of the surface resulting in increased risk of AIPs | • Develop and implement an Alien Vegetation Management Plan to mitigate the establishment and spread of undesirable alien plant species during construction and operations.<br>• Site must be continuously monitored and managed for alien vegetation growth. | • Minimise the establishment and spread of alien invasive plant species. | • Contractor | • Regularly |

| | Aspect | RECOMMENDED MITIGATION MEASURES/ MANAGEMENT ACTIONS | MANAGEMENT OUTCOMES | RESPONSIBLE PARTY | FREQUENCY OF ACTION |
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| | | • Removal must occur through appropriate methods such as hand pulling, application of chemicals, cutting, etc. in accordance with the NEMBA: Alien Invasive Species Regulations. | | | |
| 9. | Impact on avifauna- bird mortality | • Appoint a qualified avifaunal specialist to oversee all construction activities, maintain monitoring records (including photographic evidence), and guide adaptive management.<br>• Limit vegetation clearance to the smallest footprint necessary.<br>• Avoid drainage lines that are around the project site and some inside the site.<br>• Maintain ecological corridors and establish a minimum of 50m buffer zones around sensitive habitats (drainage lines) to reduce disturbance.<br>• Schedule noisy activities outside critical breeding seasons (summer period Oct – Feb); confine movement of machinery and personnel to designated routes and work areas.<br>• Install insulation and bird guards on pylons and substation structures during construction; fit line markers and diverters before grid connection.<br>• Train construction crews on avifaunal sensitivity, species of concern, and incident reporting procedures.<br>• A bird specialist must conduct pre-construction surveys (in the dry season) for Species of Conservation Concern.<br>• Mark any overhead spans with flight diverters; avoid routing near known flyways; reduce night lighting; implement carcass-search monitoring with adaptive triggers.<br>• Electrocution is likely if perching areas are not insulated.<br>• Fit Bird Guards on pylons/wires near sensitive areas (e.g., water bodies)<br>• More cost-effective to install insulators/diverters during construction.<br>• Insulate pylons, wires, and substation structures.<br>• Follow Eskom Guidelines for installation. | • To minimise bird mortality, injury and disturbance associated with construction activities. | • Contractor | • Regularly |

| | Aspect | RECOMMENDED MITIGATION MEASURES/ MANAGEMENT ACTIONS | MANAGEMENT OUTCOMES | RESPONSIBLE PARTY | FREQUENCY OF ACTION |
|---|---|---|---|---|---|
| 10. | Impact on the aquatic environment (drainage lines and wetlands) | • Drainage line areas must be demarcated and avoided.<br>• Avoid the systems and buffer 100m around them. Clearly mark the buffer with visible marker during the construction and operational phase.<br>• General Use authorisation must be obtained from the competent local authority.<br>• The deep excavation for infrastructure placement will disturb the soil structure/profile adjacent to the systems. No sedimentation or erosion must take place into the systems.<br>• The drainage systems must not be used as refuge site, parking areas, ablution facilities or any other means.<br>• Mark the drainage buffer with clearly visible markers and communicate their extend to all workers.<br>• Erosion breakers, such as heaps built of soil materials and grass seeds (of wetland species) must be developed on areas of steep slopes, at the gully cuts, and along the edge.<br>• All construction camps, lay down areas, wash bays, batching plants and any storage areas must be located away from any demarcated water courses.<br>• No stockpiling must take place within or near a water course.<br>• Fuel storage, refuelling, and maintenance of construction vehicles and equipment must take place in designated areas away from watercourses. | • To minimise disturbance, pollution and degradation of watercourses and associated aquatic habitats during construction activities. | • Contractor | • Regularly |
| 11. | Visual impact | • The site camp must be clearly demarcated and screened in order to block any unappealing aesthetics within the site camp such material storage areas.<br>• If practically possible, locate construction camps in areas that are already disturbed or where it isn't necessary to remove established vegetation like for example, naturally bare areas.<br>• The construction footprint must be kept as small as possible, to avoid unnecessary disruption to the surrounding environment.<br>• Disturbed areas to be rehabilitated / revegetated as soon as possible during the construction phase.<br>• Areas utilised for construction at the site must be kept clean and tidy at all times. | • To minimise visual intrusion associated with construction activities by maintaining a neat, orderly and appropriately screened construction site. | • Contractor | • Regularly |

| | Aspect | RECOMMENDED MITIGATION MEASURES/ MANAGEMENT ACTIONS | MANAGEMENT OUTCOMES | RESPONSIBLE PARTY | FREQUENCY OF ACTION |
|---|---|---|---|---|---|
| | | • Screen the construction camp and lay-down yards by enclosing the entire area with a dark green or black shade cloth of no less than 2 m height.<br>• Make use of existing access roads where possible.<br>• Where new access roads are required, the disturbance area should be kept as small as possible. A two-track dirt road will be the most preferred option.<br>• Locate access routes so as to limit modification to the topography and to avoid the removal of established vegetation.<br>• Access routes should be located on the perimeter of disturbed areas such as cultivated/fallow lands as not to fragment intact vegetated areas.<br>• If it is necessary to clear vegetation for a road, avoid doing so in a continuous straight line. Alternatively, curve the road in order to reduce the visible extent of the cleared corridor.<br>• Restrict the activities and movement of construction workers and vehicles to the immediate construction site and existing access roads. | | | |
| 12. | Waste management | • Provide clearly labelled waste bins with lids<br>• Waste manifest to be filed on site as proof of safe disposal.<br>• Littering is strictly prohibited.<br>• All waste generated on site shall be collected and appropriately disposed of at a registered municipal landfill site.<br>• Minimise accidental hazardous substance spills such as cement by mixing in a container and covering the ground with protective material. | • To ensure the effective management, storage and disposal of waste generated during construction, thereby preventing littering, pollution and contamination of the surrounding environment. | • Contractor | • As required<br>• Regularly |
| 13. | Traffic impact | • Establish an information-sharing link with the Mogalakwena Local Municipality Traffic and Emergency Services Department in Makopane, the closest traffic and emergency services, as well as the SANRAL Limpopo Provincial Office in Polokwane, the agency responsible for the N11 National Road. | • To minimise traffic disruptions and ensure the safe movement of construction vehicles, motorists and | • Contractor<br>• ECO | • Regularly |

| | Aspect | RECOMMENDED MITIGATION MEASURES/ MANAGEMENT ACTIONS | MANAGEMENT OUTCOMES | RESPONSIBLE PARTY | FREQUENCY OF ACTION |
|---|---|---|---|---|---|
| | | • Comply with relevant health and safety regulations, and applicable legislation, including the Occupational Health and Safety Act (85/1993): 2014 Construction Regulations and the 1996 National Road Traffic Act.<br>•<br>• Pedestrians and motorists must be accommodated through appropriate traffic warning signs and measures.<br>• Speed must be kept at a minimum next to the construction site. | pedestrians during construction activities. | | |
| 14. | Noise pollution | • Ensure that construction vehicles and working machinery are serviced and are in good condition to reduce their noise levels.<br>• Construction activities must be maintained during the normal working hours (08h00-17h00).<br>• Where works are to be carried outside the normal working hours, the affected adjacent residents must be informed and such be undertaken within the shortest time possible.<br>• Vehicles and plant to be inspected daily for defects which may cause elevated noise generation.<br>• Vehicles and plant to be adequately services and maintained in good condition. | • To minimise noise disturbances associated with construction activities and prevent unnecessary nuisance to surrounding communities and sensitive receptors. | • Contractor | • Regularly |
| 15. | Air pollution | • Implement dust suppression measures as required.<br>• Vehicle speed must be kept at a minimal reduce dust pollution.<br>• Construction plant, equipment, machinery and vehicles must be well maintained and services regularly to minimise exhausted fumes air pollution.<br>• Exposed areas must be re-vegetated as soon as all installations are completed. | • To minimise dust generation and vehicle emissions associated with construction activities. | • Contractor | • Regularly |
| 16. | Paleontological resource disturbance | • The Environmental Compliance Officer responsible for overseeing the project must be informed of the geological context of the site and the extremely low likelihood of encountering palaeontological material.<br>• Construction managers and supervisory personnel must be made aware of the procedures to follow in the unlikely event that fossil material is encountered.<br>• Any new geological exposures created during excavation for foundations, cable trenches, substations, or access roads must | • To prevent damage, disturbance or loss of palaeontological resources during construction and ensure that any fossil material discovered is appropriately | • Contractor<br>• ECO | • Regularly<br>• As required |

| | Aspect | RECOMMENDED MITIGATION MEASURES/ MANAGEMENT ACTIONS | MANAGEMENT OUTCOMES | RESPONSIBLE PARTY | FREQUENCY OF ACTION |
|---|---|---|---|---|---|
| | | be visually inspected as part of routine environmental monitoring.<br>• In the unlikely event that fossil material is discovered, work in the immediate vicinity must cease and a qualified palaeontologist or the relevant heritage authority must be contacted for further guidance.<br>• Any palaeontological material identified as scientifically significant must be recorded and sampled by a qualified specialist. The costs associated with this activity shall be borne by the developer as part of responsible heritage management. | protected and managed. | | |
| 17. | Archaeological and Cultural resource disturbance | • Ensure all known sites of cultural, archaeological, and historical significance are demarcated on the site layout plan and marked as no-go areas.<br>• Should any archaeological, cultural property heritage resources be exposed during excavation or be found on development site, a registered heritage specialist or Amafa research and Institute official must be called to site for inspection.<br>• Under no circumstances may any archaeological, historical or any physical cultural property heritage material be destroyed or removed form site.<br>• Should remains and/or artefacts be discovered on the development site during earthworks, all work will cease in the area affected and the Contractor will immediately inform the Construction Manager who in turn will inform Amafa Research and Institute.<br>• Should any remains be found on site that is potentially human remains, Amafa research and Institute and South African Police Service must be contacted. | • To prevent the damage, disturbance or destruction of archaeological, historical and cultural heritage resources during construction activities and ensure the appropriate protection and management of any heritage resources discovered. | • Contractor | • Regularly |
| 18. | Employment opportunities | • Employment of local labour and contracting of SMMEs. | • To maximise local employment and economic benefits associated with the construction phase through the | • Contractor | • Once-off |

| | Aspect | RECOMMENDED MITIGATION MEASURES/ MANAGEMENT ACTIONS | MANAGEMENT OUTCOMES | RESPONSIBLE PARTY | FREQUENCY OF ACTION |
|---|---|---|---|---|---|
| | | | prioritisation of local labour and small, medium and SMMEs, where feasible. | | |

# 8 REHABILITATION PHASE

Post construction obligations, also application during works, of the project are outlined in the subsequent table to ensure that contractor leaves site in an acceptable condition with minimal environmental impacts.

**Table 10.** Impact and Mitigation Measures in Rehabilitation Phase

| | Activity/Impact | RECOMMENDED MITIGATION MEASURES/ MANAGEMENT ACTIONS | MANAGEMENT OUTCOMES | RESPONSIBLE PARTY | FREQUENCY OF ACTION |
|---|---|---|---|---|---|
| 1. | Legal and environmental compliance | • A Re-vegetation and habitat rehabilitation plan must be developed and implemented. | • To ensure that all disturbed areas are appropriately rehabilitated in accordance with the approved Rehabilitation Plan. | • Contractor | • Ongoing |
| 2. | Site de-establishment | • All structures should be removed and the site must be clean with no waste, rubble or construction material.<br>• Infrastructure must be removed with minimal additional disturbance. | • To ensure that the site is left clean, safe and free of construction-related waste, rubble and temporary infrastructure. | • Contractor | • Once-off |
| 3. | Revegetation | • Rehabilitation of vegetation on the site must be done as described in the Rehabilitation Plan.<br>• Compacted soils must be:<br>• Ripped<br>• Rehabilitated<br>• Disturbed areas must be:<br>• Recontoured<br>• Topsoil replaced<br>• Re-vegetated with indigenous species<br>• Post-decommissioning monitoring must ensure: | • To ensure the successful rehabilitation of disturbed areas through the re-establishment of indigenous vegetation, stabilisation of soils and prevention of invasive alien plant establishment. | • Contractor | • Regularly |

| | | | | | |
|---|---|---|---|---|---|
| | | • Vegetation recovery<br>• Stability of soils<br>• Absence of invasive species | | | |

# 9 OPERATIONAL PHASE

This section of the EMPr provides management principles for the operational phase of the project. Environmental actions, procedures and responsibilities as required during the operational phase are specified.

**Table 11.** Impact and Mitigation Measures in Operational Phase

| | ASPECT | RECOMMENDED MITIGATION MEASURES/ MANAGEMENT ACTIONS | MANAGEMENT OUTCOMES | RESPONSIBLE PARTY | FREQUENCY OF ACTION |
|---|---|---|---|---|---|
| 1. | Collision of birds with solar farm | • Mark any overhead spans with flight diverters.<br>• Avoid routing near known flyways<br>• Reduce night lighting; implement carcass-search monitoring with adaptive triggers.<br>• Conduct mortality searches and inspections at least once every 30 days for a minimum of 12 months post-construction. | • To minimise bird collisions, injuries and mortality associated with the operational infrastructure. | • Planets Energy Facility | • Ongoing<br>• As required |
| 2. | Electrocution of birds when perched on towers | • Electrocution is likely if perching areas are not insulated.<br>• Fit Bird Guards on pylons/wires near sensitive areas (e.g., water bodies).<br>• Insulate pylons, wires, and substation structures.<br>• Follow Eskom Guidelines for installation. | • To minimise the risk of bird electrocution and associated mortality through appropriate protection of electrical infrastructure. | • Planets Energy Facility | • Once-off |
| 3. | Disturbance of key habitats and pollution of the surrounding environment | • Keep all activities within the approved footprint.<br>• Provide designated waste areas with appropriate bins/skips.<br>• Dispose of chemicals/metal offcuts per the Waste Act.<br>• Manage noise and littering to avoid disrupting breeding periods. | • To minimise disturbance, pollution and degradation of surrounding habitats during operational activities, thereby maintaining their ecological integrity and functionality. | • Planets Energy Facility | • Ongoing<br>• As required |
| 4. | Potential soil and water contamination | • Operate, maintain and monitor the BESS according to supplier specifications. | • To minimise potential contamination of soil and water. | • Planets Energy Facility | • Ongoing<br>• As required |

| | ASPECT | RECOMMENDED MITIGATION MEASURES/ MANAGEMENT ACTIONS | MANAGEMENT OUTCOMES | RESPONSIBLE PARTY | FREQUENCY OF ACTION |
|---|---|---|---|---|---|
| | associated with the BESS | • Undertake visual inspections of BESS equipment to identify damage or leaks.<br>• Bund all battery containers (hazardous chemicals) in accordance with legal requirements and supplier requirements. | | | |
| 5. | Potential fire and associated environmental and safety impacts from the BESS | • Provide signage on site specifying the types of batteries in use and the risk of exposure to hazardous material and electric shock.<br>• Provide signage on site specifying how electrical and chemical fires must be dealt with by first responders, and the potential risks to first responders (e.g., toxic fumes). Provide suitable firefighting equipment on site.<br>• A fire management Plan must be developed.<br>• An Emergency Response Plan must be developed and implemented to address potential BESS-related incidents, including fires and explosions. | • To minimise the occurrence of fires on site. | • Planets Energy Facility | • Ongoing<br>• As required |
| 6. | Potential environmental contamination from improper management of BESS waste | • Develop and implement a waste management plan.<br>• Store battery waste securely in labelled containers before disposal.<br>• Dispose of hazardous battery waste through appropriately authorised facilities.<br>• Maintain records of battery waste disposal or refurbishment.<br>• An End-of-Life Management Plan must be developed for the appropriate handling, reuse, recycling or disposal of damaged and end-of-life batteries and associated components. | • To minimise the potential of environmental contamination. | • Planets Energy Facility | • Ongoing<br>• As required |
| 7. | Visual impact due to the operation of the facility | • As far as possible, limit the amount of security and operational lighting present on site.<br>• Lighting fixtures should make use of minimum lumen or wattage. | • To minimise visual intrusion associated with the operation of the facility. | • Planets Energy Facility | • Ongoing |

| | ASPECT | RECOMMENDED MITIGATION MEASURES/ MANAGEMENT ACTIONS | MANAGEMENT OUTCOMES | RESPONSIBLE PARTY | FREQUENCY OF ACTION |
|---|---|---|---|---|---|
| | | • Mounting heights of lighting fixtures should be limited, or alternatively, foot-light or bollard level lights should be used. | | | |

# 10 DECOMISSIONING PHASE

This section of the EMPr provides management principles for the decommissioning phase of the project. Environmental actions, procedures and responsibilities as required during the operational phase are specified.

**Table 12.** Impact and Mitigation Measures in Decommissioning Phase

| | ASPECT | RECOMMENDED MITIGATION MEASURES/ MANAGEMENT ACTIONS | MANAGEMENT OUTCOMES | RESPONSIBLE PARTY | FREQUENCY OF ACTION |
|---|---|---|---|---|---|
| 1 | No-go | • Refurbishing the Energy Facility for continued operation would result in the extension of the operational phase impacts and its levels of significance | • To sustainably operate the facility with minimal environmental impacts | • Planets Energy Facility | • Ongoing |
| 2 | Environmental and social compliance | • Ensure all applicable authorisations are obtained prior to decommissioning<br>• Ensure implementation of the applicable decommissioning environmental approval and plans<br>• Infrastructure must be removed with minimal additional disturbance. | • To achieve environmentally and legal sound decommissioning<br>• To ensure that the dismantling of the solar PV facility does not negatively impact the environment. | | • Ongoing |
| 3 | Environmental disturbance associated with the dismantling of the Solar energy facility and associated infrastructure | • Removal Activities should be limited to area of disturbance<br>• The footprint should be ripped to alleviate compaction<br>• The contractor appointed for the removal of infrastructure activities must commit to the disposal of materials at registered sites<br>• Salvageable materials may be sold to interested parties where these are not hazardous<br>• Compacted soils must be: | | | • Once-off<br>• Ad-hoc |

| | ASPECT | RECOMMENDED MITIGATION MEASURES/ MANAGEMENT ACTIONS | MANAGEMENT OUTCOMES | RESPONSIBLE PARTY | FREQUENCY OF ACTION |
|---|---|---|---|---|---|
| | | ○ Ripped<br>○ Rehabilitated<br>• Disturbed areas must be:<br>○ Recontoured<br>○ Topsoil replaced<br>• Re-vegetated with indigenous species<br>• Post-removal of the solar PV, the site must be rehabilitated (compacted areas ripped, topsoil re-instated and the area vegetated with indigenous seed mix)<br>• Post-rehabilitation monitoring of soil fertility should be considered<br>• The development site should implement adequate dust suppression techniques to limit dust release.<br>• Post-decommissioning monitoring must ensure:<br>○ Vegetation recovery<br>○ Stability of soils<br>○ Absence of invasive species<br>• Compliance, Monitoring, and Reporting<br>○ An independent Environmental Control Officer (ECO) must be appointed.<br>○ ECO responsibilities must include:<br>▪ Monitoring buffer compliance<br>▪ Verification of search and rescue activities<br>▪ Erosion and stormwater inspections<br>▪ Alien plant control monitoring<br>▪ Rehabilitation progress<br>• Regular compliance reports must be submitted to the Competent Authority<br>• All mitigation actions must be:<br>○ Documented<br>○ Auditable | | | |

| | ASPECT | RECOMMENDED MITIGATION MEASURES/ MANAGEMENT ACTIONS | MANAGEMENT OUTCOMES | RESPONSIBLE PARTY | FREQUENCY OF ACTION |
|---|---|---|---|---|---|
| | | • Adaptively managed based on monitoring results | | | |

# 11 ROLES AND RESPONSIBILITIES

## 11.1 PROJECT MANAGER

The Project Manager is responsible for overall management of the project and the implementation of the EMPr. The following tasks fall within his / her responsibilities:

- Be familiar with the recommendations and mitigation measures of this EMPr, and implement these measures;
- Monitor site activities on a daily basis for compliance;
- Conduct internal audits of the construction site against the EMPr;
- Confine the construction site to the demarcated areas; and
- Rectify transgressions through the implementation of corrective action

## 11.2ENVIRONMENTAL CONTROL OFFICER

The Developer must appoint a suitable qualified Environmental Control Officer that will be responsible for ensuring compliance to the EMPr. The Environmental Control Officer on site will conduct regular site visits to ensure the success of the EMPr.

The Environmental Control Officer will:

- Do regular site visit to be able to compile site inspection reports for the inclusion in the EMPr as an addendum if necessary.
- Report compliance and non-compliance to the competent authority.
- Know the contents and implications of the environmental report and monitor the implementation of the findings using the EMPr.
- Act as a guide, advisor and consultant to the contractor and client on environment issues during construction. This will be achieved by continuous auditing of the project, identification of problem areas and provisioning of action plans to avoid costly stoppages and /or environmental damage.
- Ensure that people can report incidents and recommend corrective action when required for aspects of non-compliance within the EMPr
- Upgrade the EMPr as necessary and inform the relevant parties of the changes.

## 11.3 CONTRACTOR

The construction contractor is responsible for submitting reports on implementation of the environmental plan as described by the project proponent and authorities. The contractor must always ensure compliance with the EMPr

during construction activities and maintain an environmental register which keeps a record of all environmental incidents that occur such as

- Public involvement / complaints;
- Health and safety incidents;
- Incidents involving Hazardous materials stored on site; and
- Non-compliance incidents.

# 12 IMPLEMENTATION OF ENVIRONMENTAL MANAGEMENT PROGRAMME

A copy of the EMPr must be kept on site at all times during the construction period. The EMPr will be binding on all contractors operating on the site and must be included within the Contractual Clauses. The monitoring programme must be implemented for the duration of the construction and operation of the erosion control structures. This programme should include:

- Establishing a baseline of pre-construction site conditions validated with photographic evidence.
- Monthly audits will be conducted by an independent ECO for the construction phase to ensure compliance with the conditions stipulated in this EMPr and, where necessary, make recommendations for corrective action. These audits can be conducted randomly and do not require prior arrangement with the Project Coordinator.
- Compilation of an audit report with a rating of compliance with the EMPr. The ECO must keep a photographic record of the demarcated site and construction area. The Contractor must be held liable for all unnecessary damage to the environment. A register must be kept of all complaints from the community. All complaints must be handled immediately to ensure timeous rectification by the responsible party.

## 12.1 ENVIRONMENTAL AUDITS AND MONITORING

The construction contractor will submit reports on implementation of the environmental plan as described by the project proponent and authorities. An environmental audit will be conducted prior to the development and construction activities. This environmental audit will ensure that:

- Mitigation measures are implemented as prescribed in the Environmental Management Programme;
- The relevant authorities are kept informed about progress with the project and that they are given assurance that the project is implemented and managed as prescribed in the EMPr.
- Periodic inspections and/or audits are performed.
- Compliance to the conditions of the EMPr is adhered to and a report compiled.
- Reviews of conformance against policies and procedures stated in this document are performed.
- Supervisors in all work areas will conduct performance and compliance reviews, using the EMPr as guideline to ensure compliance.

- Inspections will occur monthly (or as required).

## 12.2 RECORD KEEPING

Documents to be maintained by the designated representative/ site agent are to include:

- Training records.
- Inspection records.
- Records of non-compliance and corrective action.
- Records of all complaints, concerns or issues and corrective action.
- Environmental Management Programme.
- All incidents reports.

***All records will be kept for up to a year after the completion of the project or in accordance with other legal requirements as they apply***.

## 12.3 EMPR UPDATES

The EMPr will be subject to on-going review throughout the course of the project to ensure its continued suitability, adequacy, and effectiveness. This review may include but will not be limited to monitoring and measuring information, performance data, assessment and audit results and other relevant information and data.

## 12.4 NON-COMPLIANCE

The contractors must act immediately when notice of non-compliance is received and take corrective action. Complaints received regarding activities on the construction site pertaining to the environment must be recorded in a dedicated register and the response(s) noted with the date and action taken. The ECO should be made aware of any complaints.

Any non-compliance with the agreed procedures of the EMPr is a transgression of the various statutes and laws that define how the environment is managed. Failure to redress the cause must be reported to the competent authority for them to deal with the transgression, as it deems fit. The Contractor is deemed not to have complied with the EMPr if, inter alia:

- There is evidence of contravention of the EMPr specifications within the boundaries of the construction site and site extensions;
- There is contravention of the EMPr specifications which relate to activities outside the boundaries of the construction site;
- Environmental damage ensues due to negligence;
- Construction activities take place outside the defined boundaries of the site; and/or
- The Contractor fails to comply with corrective or other instructions issued within a specific time.

**It is recommended that the Contractors institute penalties for the following less serious violations and any others determined during work, as detailed below:**

- Littering on site.
- Lighting of illegal fires on site.
- Persistent or unrepaired fuel and oil leaks.
- Any persons, vehicles or equipment related to the Contractor's operations found within the designated "no-go" areas.
- Excess dust or excess noise emanating from site.
- Possession or use of intoxicating substances on site.
- Any vehicles being driven more than designated speed limits.
- Removal and/or damage to fauna, flora, cultural or heritage objects on site.
- Urination and defecation anywhere except at designated facilities.

## 12.5 INCIDENT REPORTING AND REMEDY

If a leakage or spillage of hazardous substances occurs on site, the local emergency services must be immediately notified of the incident. The following information must be provided:

- the location;
- the nature of the load;
- the extent of the impact; and
- the status at the site of the accident itself (i.e., whether further leakage is still taking place, whether the vehicle or the load is on fire).

Written records must be kept on the corrective and remedial measures decided upon and the progress achieved therewith over time. Such progress reporting is important for monitoring and auditing purposes. The written reports may be used for training purposes to prevent similar future occurrences.

## 12.6 PENALTIES

Where environmental damage is caused or a pollution incident, and/or failure to comply with any of the environmental specifications contained in the EMPr, the Developer and/or the Contractor will be liable. The following violations, and any others determined during work, should be penalised:

- Hazardous chemical/oil spill and/or dumping in non-approved sites.
- Damage to sensitive environments.
- Damage to cultural and historical sites
- Unauthorised removal/damage to indigenous trees and other vegetation, particularly in identified sensitive areas.

- Uncontrolled/unmanaged erosion.
- Unauthorised blasting activities (if applicable).
- Pollution of water sources.
- Unnecessary removal or damage to trees.

# 13 SUMMARY OF RECOMMENDATIONS AND CONCLUSION

The proposed development will have minimal environmental impacts which are manageable through good engineering practices and following all environmental recommendations prescribed. Although all foreseeable actions and potential mitigations or management actions are contained in this document, the EMPr should be considered as a day-to-day management document. The EMPr thus sets out the environmental standards that are required to minimize the negative impacts and maximize the positive benefits of the local communities. An EMPr is a “live document” and its continuous review and correct management will definitely result to the successful construction of the proposed development.

The contractor is to be made aware of the potential cost and timing implications needed to fulfill the implementation of the EMPr, thus adequately costing for these.

## Annexure 1: Rehabilitation Schedule and Guideline

Where applicable, the rehabilitation schedule and procedure to be adhered to is as follows (this methodology should be updated during the construction phase):

**Table 13.** Rehabilitation schedule and guideline

| Step | Method | Equipment |
|---|---|---|
| 1 | Remove all construction material from the area where construction has been completed | To be undertaken by hand. |
| 2 | The ground should be sloped so as to attain a natural slope and to attain a natural water flow, if it has been altered during construction (the natural slope should be altered as little as possible during construction). | To be undertaken by hand. |
| 3 | Topsoil that has been stockpiled during construction must be applied to the area to undergo rehabilitation. The depth of the topsoil layer to be applied depends on the natural depth of topsoil in the area, and the amount of topsoil that may have been lost during construction. | Topsoil must be applied from the topsoil stockpiled during construction |
| 4 | The area should be mulched to improve water retention, and brushwood applied to act as a soil stabiliser. Mulch and brushwood must be applied more heavily in areas which are presently well-wooded (or as directed by the ECO). | The mulch used should be woodchip, obtained commercially or from trees removed during site clearance. The brushwood is obtained from the bushes and trees removed during site clearance. |
| 5 | The planting of locally indigenous species should be undertaken, with local species endemic to the area. | The plant species to be used during the rehabilitation process should be endemic to the area surrounding the substation installation. |
| 6 | The species which has been planted should be regularly watered after planting. Watering should ensure that no erosion of the topsoil takes place. | A hosepipe must be available on site. |
| 7 | Plant species which are not well established after a period of 2 months after planting should be re-planted. If necessary, another dressing of topsoil should be applied prior to planting. | As above |
| 8 | Slope stabilisation measures may be necessary in areas where vegetation has not been able to establish and there is an erosion risk. The measures implemented depend on the situation, and can be varied as necessary. The ECO will direct the Contractor as required. | Various slope stabilisation measures are available and vary in effectiveness according to the situation including<br>• Onion bags<br>• Soil saver (jute/hessian) blankets<br>• Logs/bark held in place with pegs |

## Annexure 2: Proposed Fines and Penalty Structure

**Table 14**. Proposed fines and penalty structure

| Typical incidents incurring penalties | Value |
|---|---|
| Failure to secure construction site from public access | R5,000 |
| Failure to demarcate working areas and servitudes and/or maintain fences and/or demarcation tape. | R1,000 |
| Failure to stockpile topsoil correctly (per incident) | R2,000 |
| Failure to stockpile materials in designated areas (per incident) | R500 |
| Discharging effluent and/or polluted storm water onto the ground or into surface water (per incident) | R2,000 |
| Failure to provide adequate sanitation, waste disposal facilities or services (per incident) | R1,000 |
| Failure to demarcate construction area boundaries before commencing construction clearance and other activities (per incident) | R5,000 |
| Venturing into or undertaking construction related activities within no-go areas, without formal written approval from the ECO (per incident) | R5,000 |
| No induction regarding environmental matters and site housekeeping practices (per employee) | R2,000 |
| Stockpile of soils and materials outside demarcated areas (per incident) | R1,000 |
| Inappropriate mixing of cement/concrete and poor management of concrete slurry (per incident) | R2,000 |
| Burning of waste on site (including cement bags) (per incident) | R 2,000 |
| Untidiness and litter at camp (per incident) | R200 |
| Unauthorised removal of indigenous trees, medicinal or other plants (per incident) | R2,000 |
| Damaging/killing animals/birds (per incident) | R 1,500 |
| Failure to erect temporary fences as required (per incident) | R2,000 |
| Failure to reinstate disturbed areas within the specified timeframe (per incident) | R2,000 |
| Fire – costs of runaway fires will be borne by the Contractor, should he/she be proven responsible for such fires (per incident) | R25,000 |
| Failure to provide adequate equipment for emergency situations (per incident) | R5,000 |
| Defacing, painting or damaging natural or heritage features (per incident) – mandatory removal of employee from site | R5,000 |
| Damaging cultural, historical and/or archaeological sites of importance (per incident) – mandatory removal of employee from site | R5,000 |
| Failure to maintain basic safety measures on site | R1,000 |
| Failure to carry out required community liaison, damage to property etc., without prior negotiation and/or compensation and other social infringements (per incident) | R1,000 |
| Persistent and un-repaired oil leaks from machinery. The use of inappropriate methods of refuelling (per incident) | R2,000 |
| Failure to provide drip trays and/or empty them frequently (per incident) | R500 |
| Inappropriate use of bins and poor waste management on site (per incident) | R500 |
| Inappropriate off-site disposal of waste from site (per incident) | R10,000 |
| Deliberate lighting of illegal fires on site (per incident) | R1,000 |
| The eating of meals on site outside the defined eating area. Individual not making use of the site ablution facilities (per incident) | R200 |
| Inappropriate use of adjacent watercourses and water bodies – such as for unapproved water abstraction, washing of vehicles, wastewater disposal and use by employees for washing (per incident) | R1000 |
| Any person, vehicle, item of plant, or anything related to the Contractor's operations causing a public nuisance (per incident) | R500 |
| Construction vehicles not adhering to speed limits (per incident) | R200 |
| Failure to maintain and register incidents in the incident register (per incident) | R1,000 |
| Failure to remove all temporary features and leftovers from the construction site and works areas upon completion of the works (per incident) | R50,000 |
| Any contravention with a Method Statement (per incident) | R5,000 |
| Repeated contravention of the specifications or failure to comply with instructions (per incident) | R5,000 |
| | |

## Annexure 3: Issues to be addressed by and where appropriate shown on the Environmental Management Site Plan

**Table 15.** Issues addressed on the EMP Site Plan

| Issue | Nature / Description |
|---|---|
| **Sequence of events** | Description of the nature of the process required. Briefly describe the sequence of events that will take place from the time that the contractor moves onto site to the time when the site is handed over to the Project Proponent |
| **Health and safety** | Potential risks and hazards and precautions that will be taken<br>Cooking area, hazardous materials site, first aid kit, fuel store, security issues, fire management, and public safety. |
| **On site toilets** | How many required for the particular development?<br>Are there existing ablution facilities that can be used?<br>If not, how many toilets need to be brought to site and how long are the toilets required on site?<br>Location of toilets (Site Plan) |
| **Workforce** | Number of onsite workers<br>Training of workforce in terms of environmental awareness<br>Management of workforce, particularly sub-contractors |
| **Transport and traffic** | Transport required for site workers<br>Routes to be used by construction vehicles<br>Demarcate location of traffic turning circle and parking areas (Site Plan) |
| **Infrastructure and associated equipment** | Nature and extent of infrastructure needed for construction<br>Indicate on site plan |
| **Material storage (e.g. sand needed to build wall)** | Approximation of quantity to be excavated<br>Where to be stockpiled (Site Plan)<br>How long to be stockpiled<br>Area required for stockpile |
| **Earthworks/cleaning** | Volume of material to be excavated/cleaned<br>Duration of operations<br>Where stocks to be kept on site (Site Plan)<br>How long to be kept on site<br>Where, when and how to be disposed of<br>Recycling and/or re-use of materials |
| **Equipment needed for construction activities** | Area required for material and equipment storage<br>Duration of works<br>Nature of equipment and necessary materials |
| **Drinking water** | Quantity required<br>Duration of period in which required<br>Source of water<br>Location of potable water (Site Plan) |
| **Cooking and rest areas** | Area required<br>Equipment required e.g. gas stoves, matches etc.<br>Shelter<br>Location – indicate on site plan |
| **Existing structures** | Indication of location of any structures that need to be removed and/or protected |
| **Life of project** | Working hours<br>Time frame<br>Phasing of work areas |

| Issue | Nature / Description |
|---|---|
| **Construction site** | Work area required<br>Location of construction site and work area (Site Plan)<br>Demarcation of no-go areas |
| **Environmentally sensitive areas and possible environmental risks associated with construction activities** | A plan of environmentally sensitive areas must be drawn up and made available to contractors. This will include the riverine corridor and pan demarcated in the field survey. A training programme on possible environmental risks that may result from construction activities and how to deal with these (including a reporting structure) must be made available prior to construction commencing. |
| **Waste management** | Litter drums - number, type, size, location (Site Plan)<br>Closest registered waste disposal site (Location map)<br>Waste management plan<br>Recycling / material re-use options |

## Annexure 4: General Code of Conduct for Contractors

Contractors shall ensure that all sub-contractors, employees, suppliers, agents, etc., are fully aware of the environmental issues detailed in the Construction Environmental Management Programme.

Contractors must Investigate and comply with all existing regulations and laws/ bylaws unless the Relevant Authority grants specific written authority waiving compliance with any legislation.

Contractor's, *inter alia*¸ commit to the following code of conduct:

- Implementing, documenting, reviewing and complying with environmental specifications, permits and management plans as well as relevant environmental legislation, regulations and standards.
- Ensuring the communication and training of all personnel through induction and appropriate environmental training.
- Reducing and, where possible, eliminating and preventing any harmful effects to the environment and societal milieu
- Liaising openly with, and reporting publicly to, all interested and affected parties on environmental matters.

## Annexure 5: Environmental Incident Register

**Table 16.** Environmental incident register

| ENVIRONMENTAL INCIDENT REGISTER | | | | |
|---|---|---|---|---|
| **Date** | **Environmental incident** | **Comments** *(Include any possible explanations for current condition and possible responsible parties. Include photographs, records etc. if available)* | **Corrective Action Taken** (*Give details and attach documentation as far as possible)* | **Signature** |
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## Annexure 6: Environmental Complaints Register

**Table 17.** Environmental complaints register

| ENVIRONMENTAL COMPLAINTS REGISTER | | | | |
|---|---|---|---|---|
| **Date** | **Environmental Complaint** | **Name of Compliance** (*Name of complained and method which complaint was received)* | **Corrective Action Taken** (*Give details and attach documentation as far as possible)* | **Signature** |
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