CAMDEN I WIND (RF) (PTY) LTD

CAMDEN I WIND ENERGY FACILITY

DRAFT ENVIRONMENTAL MANAGEMENT PROGRAMME

DFFE REFERENCE NUMBER: 14/12/16/3/3/2/2137

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CAMDEN I WIND ENERGY FACILITY

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CAMDEN I WIND (RF) (PTY) LTD

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This Environmental Management Programme Report (Report) for the proposed Camden I Wind Energy Facility was prepared by WSP Group Africa (Pty) Ltd on behalf of CAMDEN I WIND (RF) (PTY) LTD, as part of the application process for Environmental Authorisation.in accordance with the professional services agreement.

Unless otherwise agreed by us in writing, we do not accept responsibility or legal liability to any person other than the Client for the contents of, or any omissions from, this Report.

To prepare this Report, we have reviewed only the documents and information provided to us by the Client or any third parties directed to provide information and documents to us by the Client. We have not reviewed any other documents in relation to this Report, except where otherwise indicated in the Report.

DOCUMENT DESCRIPTION

APPLICANT

Camden I Wind (RF) (Pty) Ltd

PROJECT NAME

Proposed Camden I Wind Energy Facility, Mpumalanga, South Africa

PRE-APPLICATION REFERENCE NUMBER

2021-10-0008

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1 INTRODUCTION

1.1 BACKGROUND AND TERMS OF REFERENCE

The proponent is proposing the development of a Camden Renewable Energy Complex within the vicinity of the Camden Power Station in Mpumalanga. The Complex consists of eight subprojects referred to as:

- Camden I Wind Energy Facility (up to 200MW) (subject to a S&EIR process);
- Camden I Wind Grid Connection (up to 132kV) (subject to a Basic Assessment (BA) Process);
- Camden Grid Connection and Collector substation (up to 400kV) (subject to a S&EIR process);
- Camden I Solar (up to 100MW) (subject to a S&EIR process);
- Camden I Solar Grid Connection (up to 132kV) (subject to a BA Process);
- Camden II Wind Energy Facility (up to 200MW) (subject to a S&EIR process);
- Camden II Wind Energy Facility up to 132kV Grid Connection (subject to a BA Process); and
- Camden Green Hydrogen and Ammonia Facility, including grid connection infrastructure (subject to a S&EIR process).

The Complex (except for the Green Hydrogen and Ammonia project) is being developed in the context of the Department of Mineral Resources and Energy's (DMRE Integrated Resource Plan, and the Renewable Energy Independent Power Producer Procurement Programme (REIPPP).

The focus of this Environmental Management Programme (EMPr) Report is the proposed Camden I WEF project.

The proposed project will be operated under a Special Purpose Vehicle (SPV), and the Project Applicant is Camden I Wind (RF) (Pty) Ltd. The proposed WEF will connect to the nearby Camden Collector substation through an up to 132kV single or double circuit powerline (subject to a separate BA process, as mentioned above) between the grid connection substation portion (immediately adjacent the Camden I WEF on-site Independent Power Producer (IPP) substation portion) and that of the Camden Collector substation. The broader Camden developments (i.e. seven of the abovementioned subprojects) will connect to the Camden Power Station substation through an up to 400kV powerline (either single or double circuit) (subject to a separate Scoping and Environmental Impact Assessment (S&EIA) process).

In terms of the National Environmental Management Act (Act 107 of 1998, as amended) (NEMA) and the 2014 Environmental Impact Assessment (EIA) Regulations promulgated in Government Notice (GNR) 982, as amended, the proposed project requires a S&EIA process. In order for the proposed project to proceed, it will require an Environmental Authorisation (EA) from the Competent Authority (i.e. the National Department of Forestry, Fisheries and Environment, (DFFE)).

This EMPr was compiled as part of the S&EIA process and must be read in conjunction with the Draft Environmental Impact Report (EIR) in support of the EA application.

1.2 DETAILS OF THE ENVIRONMENTAL ASSESSMENT PRACTITIONER

WSP Group Africa (Pty) Ltd (WSP) has been appointed in the role of independent Environmental Assessment Practitioner (EAP) to undertake the S&EIA process for the proposed Project, as well as to develop this EMPr. The CV of the EAP is available in **Appendix A**. The EAP declaration of interest and undertaking is included in **Appendix B**. **Table 1-1** details the relevant contact details of the EAP.

Table 1-1: Details of the EAP

ENVIRONMENTAL ASSESSMENT PRACTITIONER (EAP)	**WSP GROUP AFRICA (PTY) LTD**
Contact Person:	Ashlea Strong
Postal Address:	Building C, Knightsbridge, 33 Sloane Street, Bryanston, 2191, South Africa
Telephone:	011 361 1392
Fax:	011 361 1381
E-mail:	Ashlea.Strong@wsp.com
EAP Qualifications:	– Masters in Environmental Management, University of the Free State – B Tech, Nature Conservation, Technikon SA – National Diploma in Nature Conservation, Technikon SA
EAPASA Registration Number:	EAPASA (2019/1005)

To adequately identify and assess potential environmental impacts, the EAP was supported by a number of specialists, the details of which are provided in the EIR.

STATEMENT OF INDEPENDENCE

Neither WSP nor any of the authors of this Report have any material present or contingent interest in the outcome of this Report, nor do they have any business, financial, personal or other interest that could be reasonably regarded as being capable of affecting their independence. WSP has no beneficial interest in the outcome of the assessment.

1.3 ENVIRONMENTAL MANAGEMENT PROGRAMME STRUCTURE

APPENDIX 4	**LEGISLATED REQUIREMENTS AS PER THE NEMA GNR 982**	**RELEVANT REPORT SECTION**
(a)	details of-	
	(i) the EAP who prepared the EMPr; and	Section **Error! Reference source not found.**2

APPENDIX 4	LEGISLATED REQUIREMENTS AS PER THE NEMA GNR 982	RELEVANT REPORT SECTION
	(ii) the expertise of that EAP to prepare an EMPr, including a curriculum vitae;	**Appendix A**
(b)	a detailed description of the aspects of the activity that are covered by the EMPr as identified by the project description;	Section 1.4**Error! Reference source not found.**
(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 1.4 Section1.5 **Appendix C**
(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-	Section 1.6 Section 3 Section 6
	(i) planning and design;	
	(ii) pre-construction activities;	
	(iii) construction activities;	
	(iv) rehabilitation of the environment after construction and where applicable post closure; and	
	(v) where relevant, operation activities;	
(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 -	Section 6
	(i) avoid, modify, remedy, control or stop any action, activity or process which causes pollution or environmental degradation;	
	(ii) comply with any prescribed environmental management standards or practices;	
	(iii) comply with any applicable provisions of the Act regarding closure, where applicable; and	
	(iv) comply with any provisions of the Act regarding financial provisions for rehabilitation, where applicable	
(g)	the method of monitoring the implementation of the impact management actions contemplated in paragraph (f);	Section 6
(h)	the frequency of monitoring the implementation of the impact management actions contemplated in paragraph (f);	Section 6
(i)	an indication of the persons who will be responsible for the implementation of the impact management actions;	Section 4.1 Section 6
(j)	the time periods within which the impact management actions contemplated in paragraph (f) must be implemented;	Section 6

APPENDIX 4	LEGISLATED REQUIREMENTS AS PER THE NEMA GNR 982	RELEVANT REPORT SECTION
(k)	the mechanism for monitoring compliance with the impact management actions contemplated in paragraph (f);	Section 4.4 Section 6
(l)	a program for reporting on compliance, taking into account the requirements as prescribed by the Regulations	Section 4.3, 4.4 and 4.5
(m)	an environmental awareness plan describing the manner in which-	Section 4.2**Error! Reference source not found.**
	(i) the applicant intends to inform his or her employees of any environmental risk which may result from their work; and	
	(ii) risks must be dealt with in order to avoid pollution or the degradation of the environment; and	
(n)	any specific information that may be required by the competent authority	N/A

1.4 PROJECT DESCRIPTION

This section provides a description of the location of the project site location and a summary of the project details. The descriptions encompass the activities to be done during the construction, operational and decommissioning (should it be decided that the facility will be decommissioned) phases, as well as the consideration for the needs and desirability of the project in accordance with Appendix 3 of GNR 982.

1.4.1 PROJECT LOCATION

The proposed Camden I WEF will have a project area of approximately 6 700 hectares (ha). Within this project area the extent of the buildable area will be approximately 200 ha subject to finalisation based on technical and environmental requirements.

The proposed WEF is located south-west of Ermelo, in Mpumalanga and falls within the Msukaligwa Local Municipality Local Municipality of the Gert Sibande District Municipality. The eight projects of the Camden Renewable Energy Complex are located adjacent each other and as such, the overall locality of the Camden Renewable Energy Complex is included in **Figure 1-1**Error! Reference source not found.. The Camden I WEF (*project under consideration for this EMPr*) project site, including associated alternatives, is indicated in **Figure 1-2**. The details of the properties associated with the proposed Camden I WEF, including the 21-digit Surveyor General (SG) codes for the cadastral land parcels are outlined in **Table 1-2.**

Table 1-2: Camden I WEF Affected Farm Portions

FARM NAME	21 DIGIT SURVEYOR GENERAL CODE OF EACH CADASTRAL LAND PARCEL
Portion 0 of Klipfontein Farm No. 442	T0IS00000000044200000
Portion 1 of Klipfontein Farm No. 442	T0IS00000000044200001
Portion 3 of Klipfontein Farm No. 442	T0IS00000000044200003

Portion 1 of Welgelegen Farm No. 322	T0IT00000000032200001
Portion 2 of Welgelegen Farm No. 322	T0IT00000000032200002
Portion 2 of Uitkomst Farm No. 292	T0IT00000000029200002
Portion 10 of Uitkomst Farm No. 292	T0IT00000000029200010
Portion 3 of Langverwatch Farm No. 290	T0IT00000000029300003
Portion 14 of Mooiplaats Farm No. 290	T0IT00000000029000014
Portion 3 of Klipbank Farm 295	T0IT00000000029500003

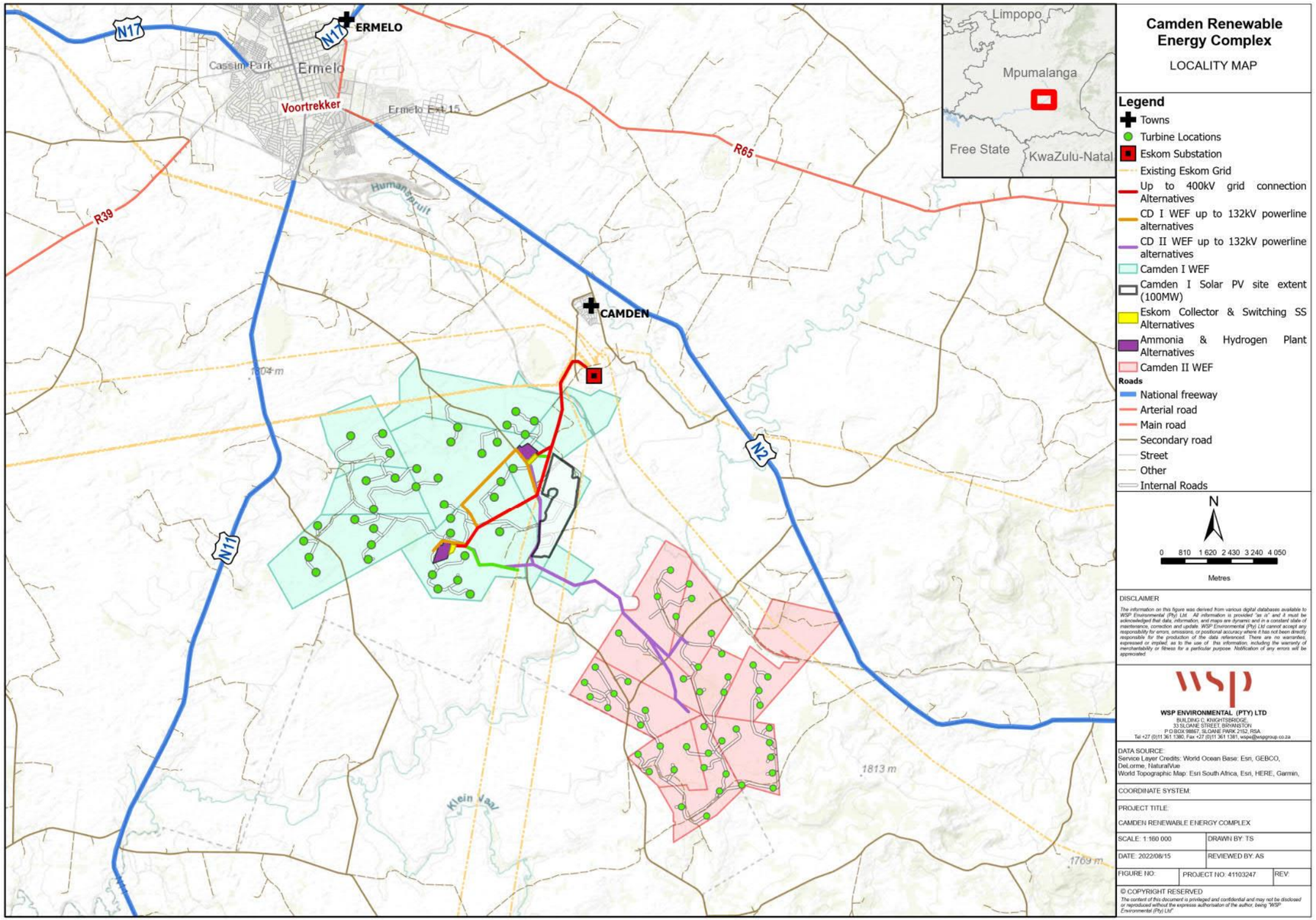


Figure 1-1: Locality map for the proposed Camden Renewable Energy Complex, near Camden in the Mpumalanga Province showing the location and proximity of the respective projects to each other

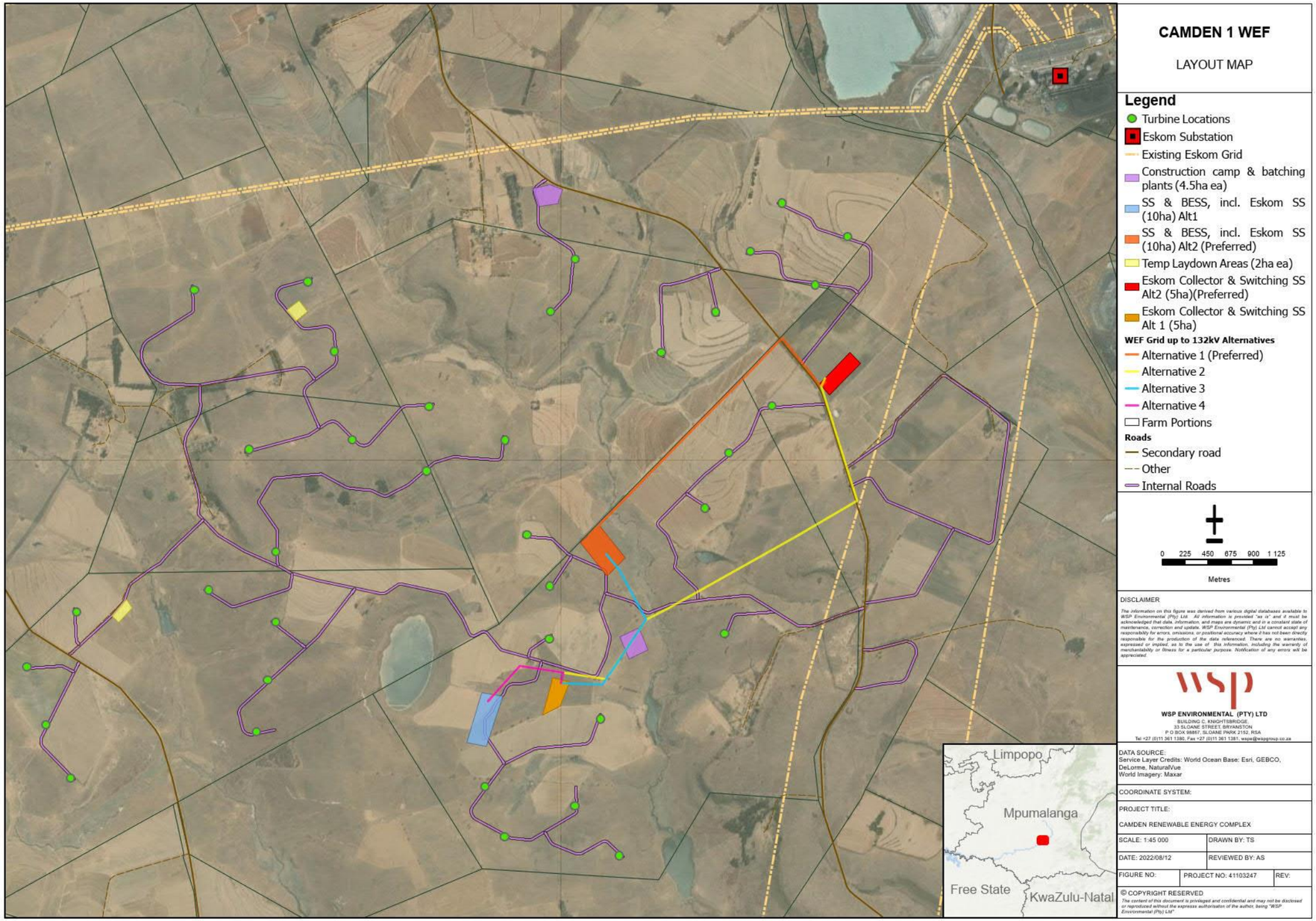


Figure 1-2: Proposed Camden I WEF and associated main components

1.4.2 ACTIVITY DESCRIPTION

The proposed Camden I WEF will be developed to allow for up to 200 MW export from the facility. The proposed Camden I WEF will comprise the following key components:

WIND TURBINES

- Up to 37 turbines, each with a foundation of approximately 25m in diameter and approximately 4.5m depth;
- Turbine hub height of up to 200m;
- Rotor diameter up to 200m; and
- Permanent hard standing area for each wind turbine (approximately 4ha). **Figure 1-3** illustrates the typical hardstanding requirements for the construction of each turbine (it should be noted that the figure below is for illustration purposes only – the exact layout and specification of the hardstanding will be determined once the design phase has been completed).

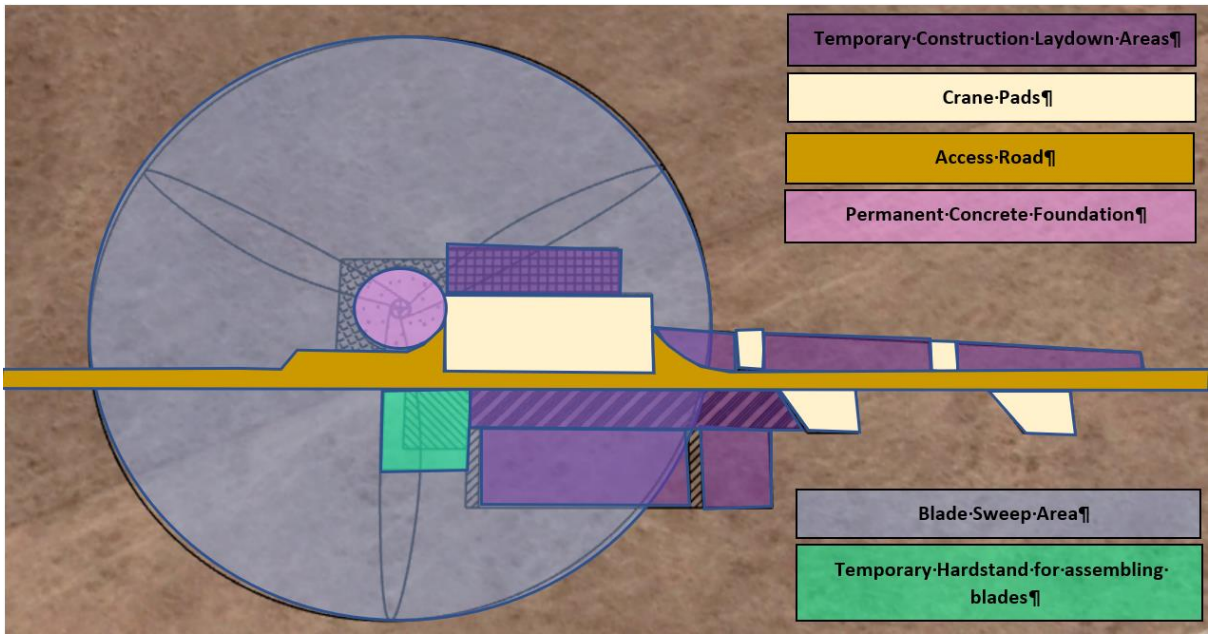


Figure 1-3: Typical Turbine Hard Standing Requirements (illustration purposes only)

SITE SUBSTATION AND BATTER ENERGY STORAGE SYSTEM (BESS)

- IPP portion site substation of approximately 1.5ha. The substation will consist of a high voltage substation yard to allow for multiple up to 132kV feeder bays and transformers, control building telecommunication, and other substation components as required; and
- The Battery Energy Storage System (BESS) footprint will be up to 5 ha. The BESS storage capacity will be up to 200MW/800 megawatt-hour (MWh) with up to four hours of storage. It is proposed that Lithium Battery Technologies, such as Lithium Iron Phosphate, Lithium Nickel Manganese Cobalt oxides or Vanadium Redox flow technologies will be considered as the preferred battery technology however the specific technology will only be determined following Engineering, Procurement, and Construction (EPC) procurement. The main components of the BESS include the batteries, power conversion system and transformer which will all be stored in various rows of containers. The BESS components will arrive on site pre-assembled.

OPERATION AND MAINTENANCE BUILDING INFRASTRUCTURE

- Operations and maintenance (O&M) building infrastructure will be required to support the functioning of the WEF and for services required by operations and maintenance staff. The O&M building infrastructure will be in close proximity to the site substation and will include:
  - Operations building of approximately 200m^2;
  - Workshop and stores area of approximately 300m^2; and
  - Refuse area for temporary waste storage and septic and/or conservancy tanks to service ablution facilities.

CONSTRUCTION CAMP LAYDOWN

- Temporary infrastructure includes:
  - a construction camp laydown and concrete batching plant (up to 5ha footprint);
  - temporary laydown area (up to 3ha) for the storage of equipment, materials, fuels, cement, chemicals etc; and
  - sewage: septic and/or conservancy tanks and portable toilets.

ACCESS ROAD

- Access to the proposed Camden I WEF from the N11 is via two existing farm gravel roads; either via the D260 or the D1107 roads;
- Internal gravel roads of approximately 60km, linking the wind turbine locations, will be developed. The roads will be between 5m and 6m wide; and
- Where required for turning circle/bypass areas, access or internal roads may be up to 20m to allow for larger component transport.

ASSOCIATED INFRASTRUCTURE

- The medium voltage collector system will comprise of cables up to and including 33kV that run underground, except where a technical assessment suggest that overhead lines are required, within the facility connecting the turbines to the onsite substation; and
- Fencing of up to 4m high around the construction camp, O&M building and Site substation and BESS areas, including any other associated infrastructure (fencing and lighting, lightning protection, telecommunication infrastructure, storm water channels, water pipelines, offices, operational control centre, Operation and Maintenance Area / Warehouse / workshop, Ablution facilities, a gate house, control centre, offices, warehouses, security building, a visitor's centre; and substation building).

The proposed development footprint (buildable area) is approximately 200ha (subject to finalisation based on technical and environmental requirements), and the extent of the project area is approximately 6700 ha. The development footprint includes the turbine positions and all associated infrastructures as outlined above.

1.4.3 PROJECT DEVELOPMENT PHASES

CONSTRUCTION PHASE

The construction phase will follow industry standard methods and techniques associated with WEF developments, and will consist of the following key activities:

- Site establishment will include clearing of vegetation and topsoil at the footprint of each turbine (approximately 1 ha per turbine), for laydown area and access routes. The temporary laydown area will be constructed, including establishment of the construction camp (temporary offices, storage containers, concrete batching plant etc). Site establishment will also entail the installation and/or connection of services (sanitation, electricity etc).
- Bulk materials (aggregate, steel etc.), infrastructure components (masts, blades, tower sections etc), lifting and construction equipment (excavators, trucks, compaction equipment etc.) will be sourced and transported

to site via suitable National and provincial routes and designated access roads. Large components (such as substation transformers) may be defined as abnormal loads in terms of the Road Traffic Act (No. 29 of 1989). In such cases a permit may be required for the transportation of these loads on public roads.

- Subject to the determination of founding specifications, earthworks will be required. This is likely to entail:
  - Excavation of foundation holes to a depth of approximately 4.5m and pouring of concrete foundations of approximately 2500m^3 from the batching plant. Concrete foundations will be constructed at each turbine location.
  - Levelling of the construction camp area, substation area, and O&M building area, and excavation of foundations prior to construction.
  - Excavation of trenches for the installation of underground cables.
- A large lifting crane(s) will be required to lift the turbine sections (nacelle, blades) into place. The lifting crane/s will be brought on site and will be required to move between the turbine site. Cranes of varying sizes may be required depending on the size of the components.
- An IPP substation will be constructed on the site. The wind turbines will be connected to the IPP substation via underground or overhead (if required) up to 33kV electrical cables. The BESS will typically require the placement of multiple containers to house the BESS components. Ancillary infrastructure will include a workshop, storage areas, office and a temporary laydown area for contractor's equipment.
- Once all construction is completed on site and all equipment and machinery has been removed from the site, the site will be rehabilitated.

OPERATIONAL PHASE

The operational phase includes the following activities:

- The generation of wind energy from the facility; and
- Periodic inspections and maintenance of the WEF.

DECOMMISSIONING PHASE

The proposed facility is expected to be operational for approximately 25 years. Should it be decided not to extend beyond the 25 years lifespan, the facility will be decommissioned. The decommissioning phase includes the activities associated with the removal/dismantling of the WEF and associated infrastructure when no longer necessary. This would entail returning the land to its pre-construction state.

1.4.4 PROJECT JUSTIFICATION (NEED AND DESIRABILITY)

South Africa is faced with significant increases in electricity demand and a shortage in electricity supply. South Africa is the seventh coal producer in the world, with approximately 77% of the country's electricity generated from coal. This large dependence on coal and its use has also resulted in a variety of negative impacts on the environment, including the contribution to climate change. South Africa is also the highest emitter of greenhouse gases in Africa; attributed to the country's energy-intensive economy that largely relies on coal-based electricity generation.

Renewable energy development is regarded as an important contribution to meeting international and national targets of reducing reliance on fossil fuels, such as coal, which contribute towards greenhouse gas emissions and resultant climate change.

The South African Government, through the IRP, has set a target to secure 17 800 MW of renewable energy by 2030. This is an effort to diversify the country's energy mix in response to the growing electricity demand and promote access to clean sources of energy.

The proposed Camden Renewable Energy Complex, which includes the Camden I WEF, will pave the way for the Just Energy Transition (JET)[1] in South Africa and promote the transition from a fossil fuel-based economy to a low carbon economy. The proposed Camden I WEF aims towards the aforementioned national energy targets of diversification of energy supply and the promotion of clean energy. Wind and solar energy developments contribute to reduced emissions and subsequently climate change whilst promoting industrial development and job creation.

Shifting to a low carbon economy will thus need to offset or exceed the benefits being realized by fossil fuels in the province. Thus, a key factor to ensuring the success of the Just Energy Transition is not only to focus on the transition from fossil fuels to renewable energy resources but to simultaneously ensure the Just Transition of jobs and skills.

Four of Eskom's coal-fired power stations have been targeted for decommissioning in the short term: Komati, Camden, Grootvlei, and Hendrina. Eskom is looking to decommission 5 400MW of electricity from coal generation by the year 2022, increasing to 10 500MW by 2030 and 35 000MW by 2050. Simultaneously Eskom has been looking at options for repurposing these power stations with the core aims of reusing existing power transmission infrastructure, developing new generation capacity, providing ancillary services, and mitigating socio-economic impact. The proposed Camden Renewable Energy Complex, inclusive of the Camden II WEF, is ideally located to form part of this proposed repurposing of the Camden power station and will help Eskom achieve its diversification goal.

1.5 ENVIRONMENTAL SENSITIVITY

The following environmental sensitivities were identified on the site, as a result of the Project location and proposed activities and will require specific applications or measures for mitigation to minimise impact.

- **Agriculture Assessment**
  - High agricultural sensitivity because of the site's land capability and status as cropland
- **Terrestrial Ecology Assessment**
  - CBA
  - Grasslands
  - Listed Ecosystems
  - Wetlands
- **Avifaunal Assessment**
  - Avifauna Sensitivities (consisting of drainage lines and associated wetlands, pans and grasslands)
- **Aquatic Ecology Assessment**
  - Wetland features and associated buffers
- **Heritage**
  - Heritage finds (consisting of heritage ruins and graves)
- **Visual Impact Assessment**
  - Features with very high landscape sensitivity

The above sensitivities are discussed in the sub-sections below. The combined environmental sensitivities of the proposed WEF Project footprint are shown in **Figure 1-19**.

1.5.1 AGRICULTURE

Agricultural sensitivity, as used in the national web-based environmental screening tool, is a direct function of the capability of the land for agricultural production. The general assessment of agricultural sensitivity that is

[1] The Just Transition is described as the transition towards a low-carbon and climate-resilient economy that maximizes the benefits of climate action while simultaneously improving the welfare of the workers and their communities.

employed in the national web-based environmental screening tool, identifies all arable land that can support viable crop production, as high (or very high) sensitivity. This is because there is a scarcity of arable production land in South Africa and its conservation for agricultural use is therefore a priority. Land which cannot support viable crop production is much less of a priority to conserve for agricultural use and is rated as medium or low agricultural sensitivity.

It is important to recognise that the agricultural sensitivity of land, in terms of a particular development, is not only a function of the screening tool sensitivity, but is also a function of the severity of the impact which that development poses to agriculture. This is not recognised in the screening tool classification of sensitivity. So, for example, the sensitivity of an agricultural environment to overhead power lines is not what the screening tool classifies the sensitivity as, because most agricultural environments have a very low sensitivity to overhead power lines. Likewise, the agricultural impact of wind farms is completely constrained by their very small agricultural footprint and the screening tool sensitivity of the land actually has very little influence on the significance of the agricultural impacts of a wind farm.

The screening tool classifies agricultural sensitivity according to only two independent criteria – the land capability rating and whether the land is used for cropland or not. All cropland is classified as at least high sensitivity, based on the logic that if it is under crop production, it is indeed suitable for it, irrespective of its land capability rating.

The screening tool sensitivity categories in terms of land capability are based upon the Department of Agriculture's updated and refined, country-wide land capability mapping, released in 2016. The data is generated by GIS modelling. Land capability is defined as the combination of soil, climate and terrain suitability factors for supporting rain fed agricultural production. It is an indication of what level and type of agricultural production can sustainably be achieved on any land, based on its soil, climate and terrain. The higher land capability values (≥8 to 15) are likely to be suitable as arable land for crop production, while lower values are only likely to be suitable as non-arable grazing land.

A map of the proposed development area overlaid on the screening tool sensitivity is given in **Figure 1-4.**

The land capability of the site on the screening tool varies from 4 to 11. The small scale differences in land capability across the project area are not very accurate or significant at this scale and are more a function of how the land capability data is generated by modelling, than actual meaningful differences in agricultural potential on the ground. Values of 4 to 5 translate to a low agricultural sensitivity, values of 6 to 8 translate to a medium agricultural sensitivity, values of 9 to 10 translate to a high agricultural sensitivity and values of 11 translate to a very high agricultural sensitivity. There are only a small number of pixels classified as land capability value 11.

In reality the soils (and therefore the land capability) vary in a fairly complex pattern across the landscape, which is not reflected at the scale of the land capability data. The most reliable indication of soil cropping potential is historical land use. The suitable versus the unsuitable soils have been identified over time through trial and error. In an agricultural environment like the one being assessed, all the suitable soils are generally cropped, and uncropped soils can therefore fairly reliably be considered to be unsuitable for crop production. Cropped areas are shown in **Figure 1-5.**

Much of the site is classified as high agricultural sensitivity because of both its land capability and because of its status as cropland. The agricultural sensitivity, as identified by the screening tool, is confirmed by the specialist assessment.

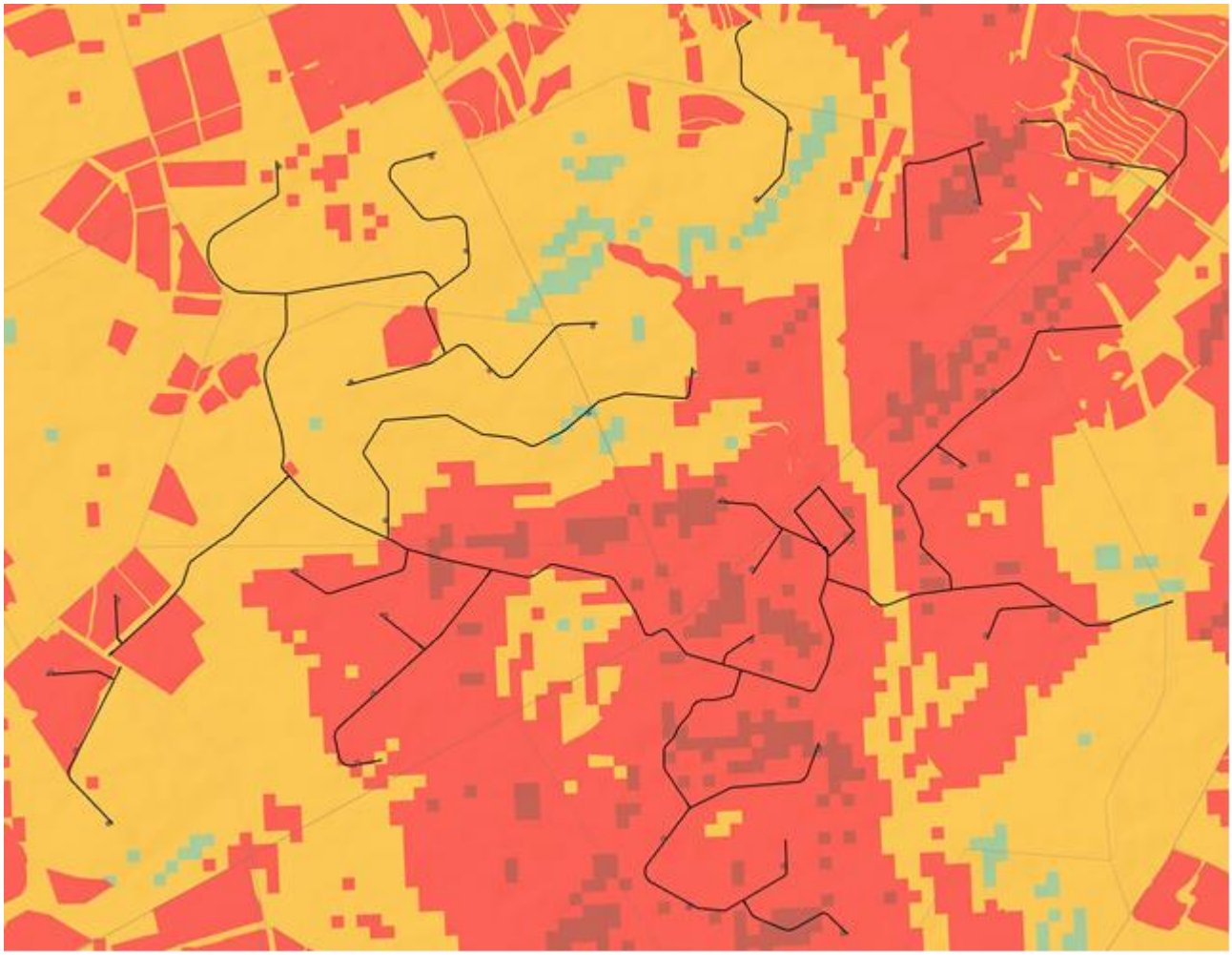


Figure 1-4: The proposed development overlain on agricultural sensitivity

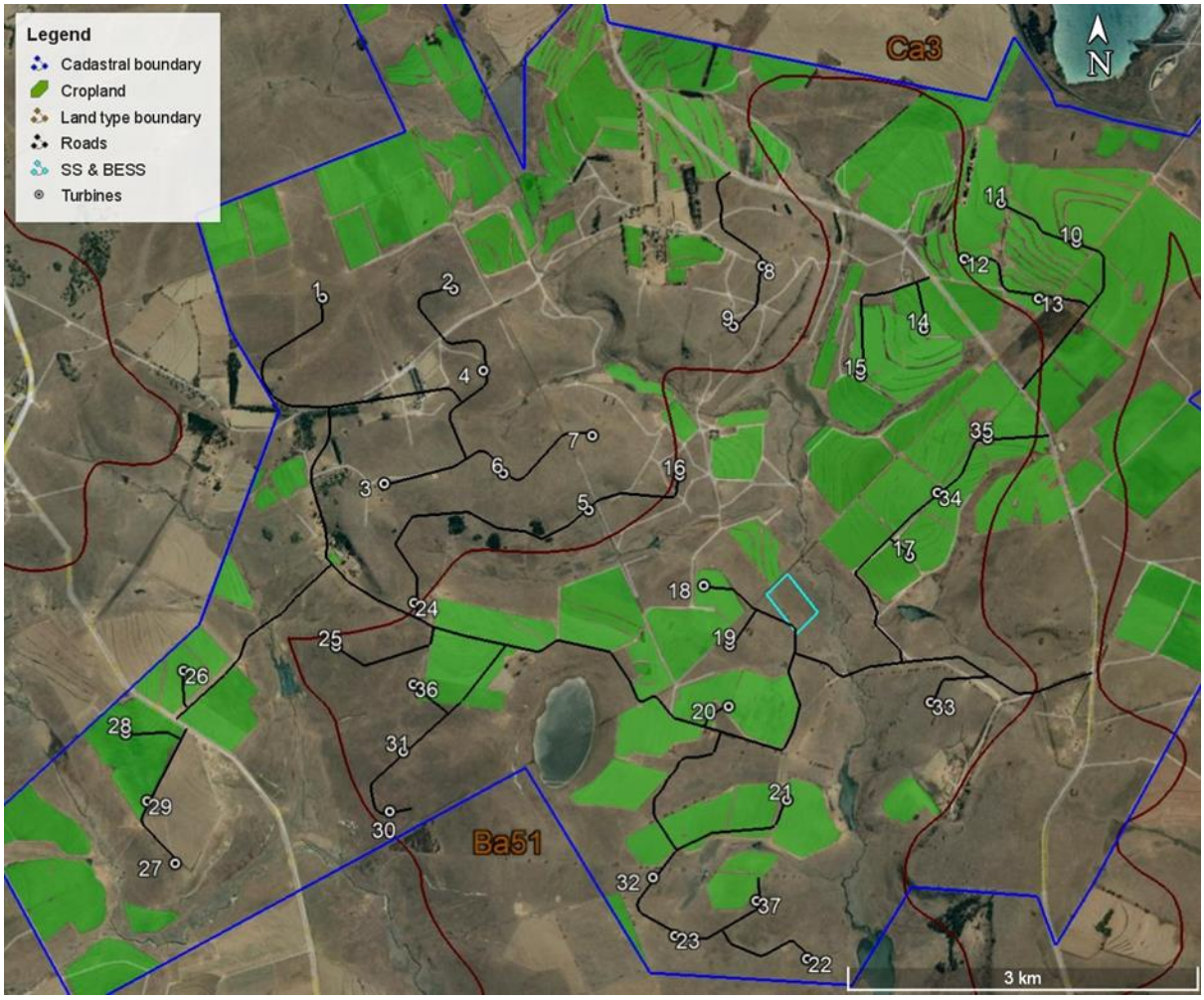


Figure 1-5: The proposed facility in relation to cropland (Johann Lanz, 2022)

1.5.2 AQUATIC BIODIVERSITY

Based on the DFFE Screening Tool, the site contains areas of Very High sensitivity due to the presence of CBAs and rivers. The remaining area within the development footprint is deemed to be of Low sensitivity. (**Figure 1-6**)

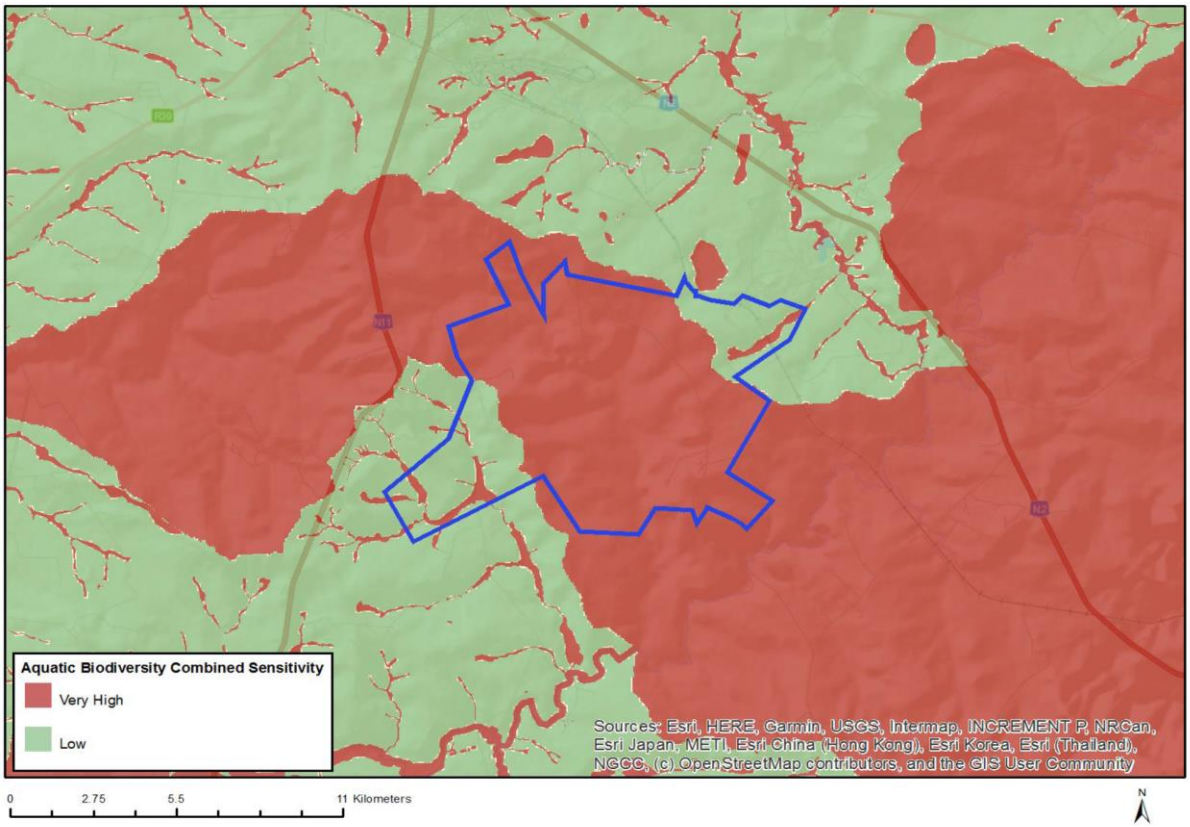


Figure 1-6: The DFFE screening tool rating for the Aquatic Biodiversity Theme

Based on the above outcomes, the specialist **agrees with** the environmental sensitivities identified on site. The findings have been informed by a site visit undertaken by Dr Brian Colloty in August 2020.

Using the baseline description and field data while considering the current disturbances and site characteristics, the following features were identified, then categorised into one of number pre-determined sensitivity categories to provide protect and/or guide the layout planning and design processes of the corridor and a suitable alignment for the grid within. **Table 1-3** outlines the Aquatic sensitivity mapping categories used to categorise features or areas (with their buffers).

Table 1-3: Sensitivity Categories

No Go	Legislated "no go" areas or setbacks and areas or features that are considered of such significance that impacting them may be regarded as fatal flaw or strongly influence the project impact significance profile Therefore areas or features that are considered to have a high sensitivity or where project infrastructure would be highly constrained and should be avoided as far as possible. Infrastructure located in these areas are likely to drive up impact significance ratings and mitigations
Medium	Buffer areas and or areas that are deemed to be of medium sensitivity but should still be avoid as this would minimise impacts and or the need for additional Water Use Authorisation
Low	Areas of low sensitivity or constraints, such as artificial systems
Neutral	Unconstrained areas (left blank in mapping)

Table 1-4 below provides an overview of the sensitivity of various aquatic features (with buffers distances included) as it relates to the main project component types for the project. The features are shown spatially in **Figure 1-7**. The sensitivity ratings of No go, Medium and Low were determined through an assessment of the aquatic habitat sensitivity and related constraints. However, these No-Go areas (with buffers) relate in general

terms to the project and there are areas where encroachment on these areas would occur (i.e. existing road crossings within wetlands) but this is considered acceptable since these areas have already been impacted.

These proposed constraints / buffers do not include bird and or bat specialist buffers / constraints as theirs buffers along aquatic features are at times far larger around aquatic features, than those required for the known aquatic species within this region.

Table 1-4: Results of the sensitivity rating / constraints assessment

DEVELOPMENT COMPONENT	WATERBODY TYPE	SENSITIVITY RATING OF THE RESPECTIVE WATERBODY TYPE AGAINST THE DEVELOPMENT TYPE AND THE REQUIRED BUFFER	SENSITIVITY RATING OVERRIDE, IF AN IMPACT SUCH AS A ROAD ALREADY OCCURS WITHIN THE PROPOSED FOOTPRINT
WTG	Riverine Floodplains with Riparian Vegetation or wetland areas	No-Go with 95m buffer	
	Valley Bottom Wetlands	No-Go with 65m buffer	
	Endorheic Pans	No-Go with 105m buffer	
	Seepage Wetlands	No-Go with 62m buffer	
	Artificial dams or mine works		
Buildings / Substations & BESS	Riverine Floodplains with Riparian Vegetation or wetland areas	No-Go with 95m buffer	
	Valley Bottom Wetlands	No-Go with 65m buffer	
	Endorheic Pans	No-Go with 105m buffer	
	Seepage Wetlands	No-Go with 62m buffer	
	Artificial dams or mine works		
Roads & Hardstands	Riverine Floodplains with Riparian Vegetation or wetland areas	No-Go with 95m buffer	Moderate if an existing crossing / road or impact is already present, that must then be included in the potential road network. However if the road network can't be aligned with existing impacted areas, then any such crossings must be evaluated on a case by case basis, by the aquatic specialist, preferably with the engineers and a site visit.
	Valley Bottom Wetlands	No-Go with 65m buffer	
	Endorheic Pans	No-Go with 105m buffer	
	Seepage Wetlands	No-Go with 62m buffer	
	Artificial dams or mine works		
Overhead Lines	Riverine Floodplains with Riparian Vegetation or wetland areas	Assumption is that the overhead lines could span these areas, but the towers/pylons should adhere to the buffer distances as indicated as far as possible but where areas are too large to span (buffers) then these tower positions must be evaluated on a case by case basis.	
	Valley Bottom Wetlands		
	Endorheic Pans		
	Seepage Wetlands		
	Artificial dams or mine works		

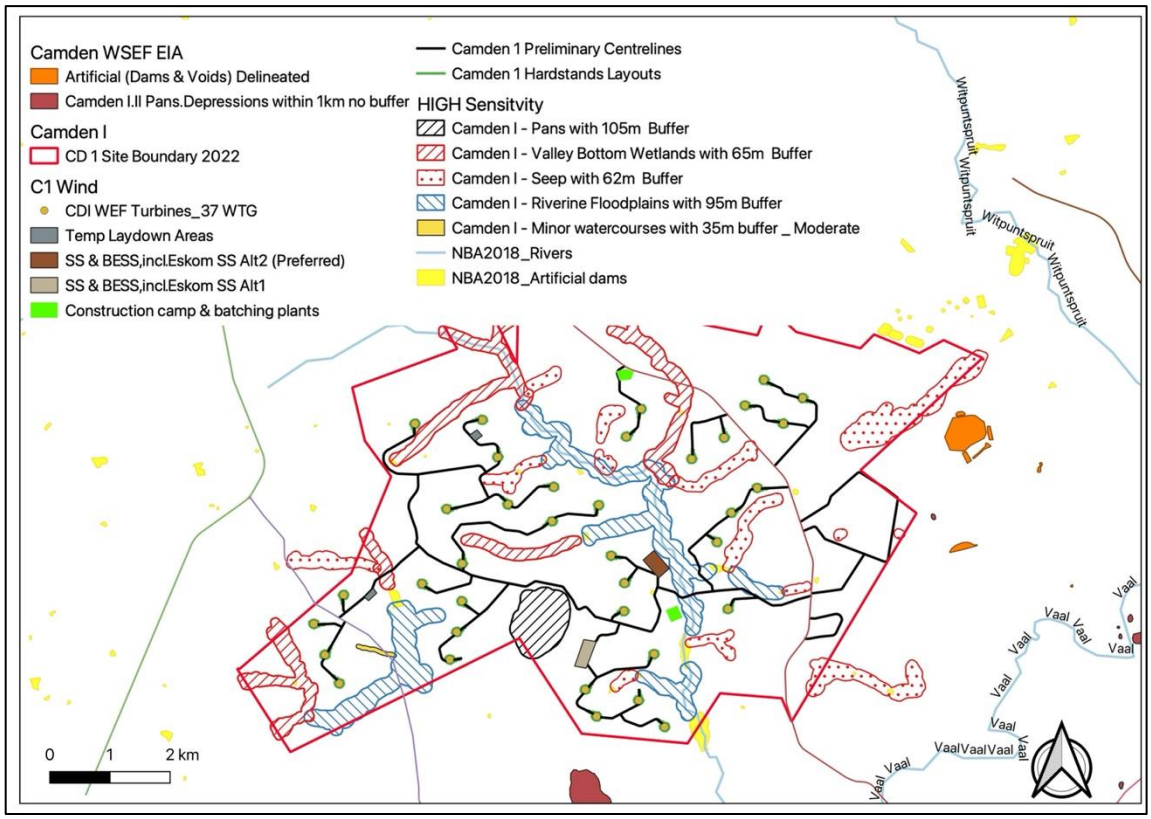


Figure 1-7: Wind Energy Facility, BESS and associated substations (including alternatives) in relation to buffered aquatic systems delineated in this assessment (EnviroSci (Pty) Ltd, 2022)

In conclusion, the DEA Screening Tool identified two sensitivity ratings within the development footprint, namely, very high and low. Although there is some overlap with the findings on site and the Screening Tool's outcome, the development footprint contains various sensitivities (very high, and Moderate) that were identified following the undertaking of the site visit and spatial input considerations.

The environmental sensitivity input received from the aquatic ecology specialist was taken forward and considered within the Scoping and EIA process and the impact to these areas assessed. Appropriate layout and development restrictions were implemented within the development footprint to ensure that the impact to aquatic ecology is deemed acceptable by the aquatic ecologist.

1.5.3 TERRESTRIAL BIODIVERSITY

The biodiversity theme sensitivity as indicated in the DFFE Screening Tool was derived to be Very High (**Figure 1-8)**. This is due to presence on site of areas included within Critical biodiversity area 1 and 2, Ecological Support Areas, Endangered Ecosystem, Vulnerable Ecosystem, Langcarel Nature reserve, FEPA subcatchment, Strategic Water Source Area, and/or Protected Areas Expansion Strategy. The theme indicates almost the entire study area as being in the Very High sensitivity category, but there are significant areas that have been cultivated and impacted by heavy grazing that do not support this classification.

The site is within an area of natural grassland but degraded (from heavily to light). A broad classification of the habitat units on site, which also reflects relatively uniform plant species compositional units, is provided in the Biodiversity Assessment report (**Appendix H-4 of EIR**). There are some habitats in the study area that have been described as sensitive in their own right in terms of the Biodiversity Assessment, as well as in terms of regional assessments. These include:

CBA "Irreplaceable" areas

The Mpumalanga Biodiversity Sector Plan (MBSP) (Mpumalanga Parks and Tourism Agency 2014) shows areas on site within various conservation planning categories, including areas designated as "CBA: Irreplaceable". These are areas that are required to meet biodiversity targets (for biodiversity pattern and

ecological process features), the implication being that there are no other areas that meet the biodiversity criteria for meeting these conservation planning objectives. The Provincial policy is that they should remain in a natural state. **Where possible, impacts on these areas should be minimised.**

Wetlands

These are described in the Terrestrial Biodiversity Assessment only in terms of being a unique botanical habitat and not in the sense of a formal wetland delineation, which is normally assessed in a separate specialist study. The wetlands must be delineated according to "DWAF, 2003: A Practical Guideline Procedure for the Identification and Delineation of Wetlands and Riparian Zones". **Restrictions in terms of infrastructure within these areas should be according to the National Water Act (Act 36 of 1998).**

Grasslands:

Grassland vegetation, in a general sense has been identified as threatened nationally as a habitat type. Indications are that loss of any grassland habitat is permanent in an ecological and biodiversity sense, and it is not possible to restore grassland to a natural state after they have been disturbed. They should therefore be treated as sensitive and all efforts made to minimize impacts on any area of grassland. **If possible, the footprint of any proposed infrastructure should be kept to a minimum within any undisturbed, natural grasslands, especially those in a moderate to good condition.**

Plant species of concern

There are a number of listed plant species that could potentially occur on site. The key habitats are grasslands and wetlands. There are also various protected species that could potentially occur on site.

Protected Areas: (National Parks and Nature Reserves)

Approximately a third of the site on the south-eastern side is shown as a protected area. This is the Langcarel Private Nature Reserve, proclaimed in 1967, which occupies the north-western border of the site, on the Farm Welgelegen 322 IT. This area is not being managed as a protected area and has undergone similar levels of degradation as surrounding areas, due primarily to overgrazing, but also partially due to alien invasive plants. In addition, no conservation management or activities were evident on site during the field assessment. This pattern of over-utilization affects all grasslands on site, resulting in them being in moderate to poor condition. A separate process is underway to have it (or part thereof) de-proclaimed as part of ongoing province-wide reserve verification efforts by the provincial authorities. No evidence was observed on site of any conservation activities during the field assessment. Assuming that this area would no longer be treated as a conservation area, the landscapes inside this boundary have been allocated here to conservation plan categories that most closely match the surrounding areas and the buffer area would not be applicable. It is therefore assumed that any areas of natural habitat within the "Protected Area" (i.e. excluding any modified areas) would have been designated as CBA1, the next-highest category. This is on the basis that these areas are within two different listed ecosystems (Chrissiesmeer Panveld, listed as Endangered, and Eastern Highveld Grassland, listed as Vulnerable) and it is likely that the conservation planning process would have counted these areas as secured before searching for additional "Irreplaceable" sites.

Protected Areas Expansion Strategy

According to the National Protected Areas Expansion Strategy 2008 (NPAES2008), there are no areas within the study area that have been identified as priority areas for inclusion in future protected areas. The study area is therefore **outside the NPAES focus area**. A draft National Protected Areas Expansion Strategy was published for public comment in 2018, but is deliberately not available as a spatial dataset. It does, however, reference the Mpumalanga Protected Area Expansion Strategy, in which priority areas are identified in terms of High, Medium and Low priorities. A map within this PDF document shows areas around Hendrina within the Low priority class that may include the site, but a spatial dataset to confirm this could not be sourced at the time of producing this report. On the basis of the Screening Tool output, which identifies "Protected Areas Expansion Strategy" as a factor within the study area, it is assumed that natural areas within the study area fall within this category (Low Priority - Mpumalanga Protected Area Expansion Strategy).

Listed ecosystems

Chrissiesmeer Panveld is listed as Endangered, and Eastern Highveld Grassland and Eastern Temperate Freshwater Wetlands are both listed as Vulnerable in the National List of Ecosystems that are Threatened and need of protection (GN1002 of 2011). **However, the first two are included almost entirely within a CBA: Irreplaceable area on site, so is already discussed in point 1 above. The second is a wetland vegetation type and is covered in point 2 above.**

The above information was used in conjunction with methodology to calculate Site Ecological Importance, described in the Terrestrial Biodiversity Assessment report (**Appendix H-4 of EIR**). A map of habitat sensitivity on site in relation to project infrastructure was provided by the terrestrial specialist (**Figure 1-9**). The proposed infrastructure in relation to sensitivities is as follows:

- Wind Turbines (37): The proposed turbines are located within grasslands and in cultivated areas. They therefore affect areas either with LOW sensitivity, or MEDIUM-HIGH sensitivity (cultivated wetlands), or HIGH sensitivity (grassland).
- Construction camp and batching plants: The two construction camps and batching plant location alternatives are both in grassland, one in CBA2 and one in grassland. The alternatives therefore affect an area with HIGH and MEDIUM-HIGH sensitivity.
- SS & BESS (2 alternative sites): Alternative 1 is half in grassland (HIGH sensitivity) and half in cultivated land (LOW sensitivity). Alternative 2 (preferred) is in grassland (HIGH sensitivity) next to a wetland (VERY HIGH sensitivity).
- Temporary laydown areas x 2: The northern temporary laydown area is within a secondary grassland area (MEDIUM-LOW sensitivity). The southern temporary laydown area is within a cultivated area and therefore affects an area with LOW sensitivity.
- Internal road infrastructure: This is potentially the infrastructure component with the largest footprint, in terms of effects on natural habitat. These roads occasionally traverse habitat in HIGH and VERY HIGH sensitivity classes, but the majority of the roads are placed where there are existing roads, or are within areas of lower sensitivity.

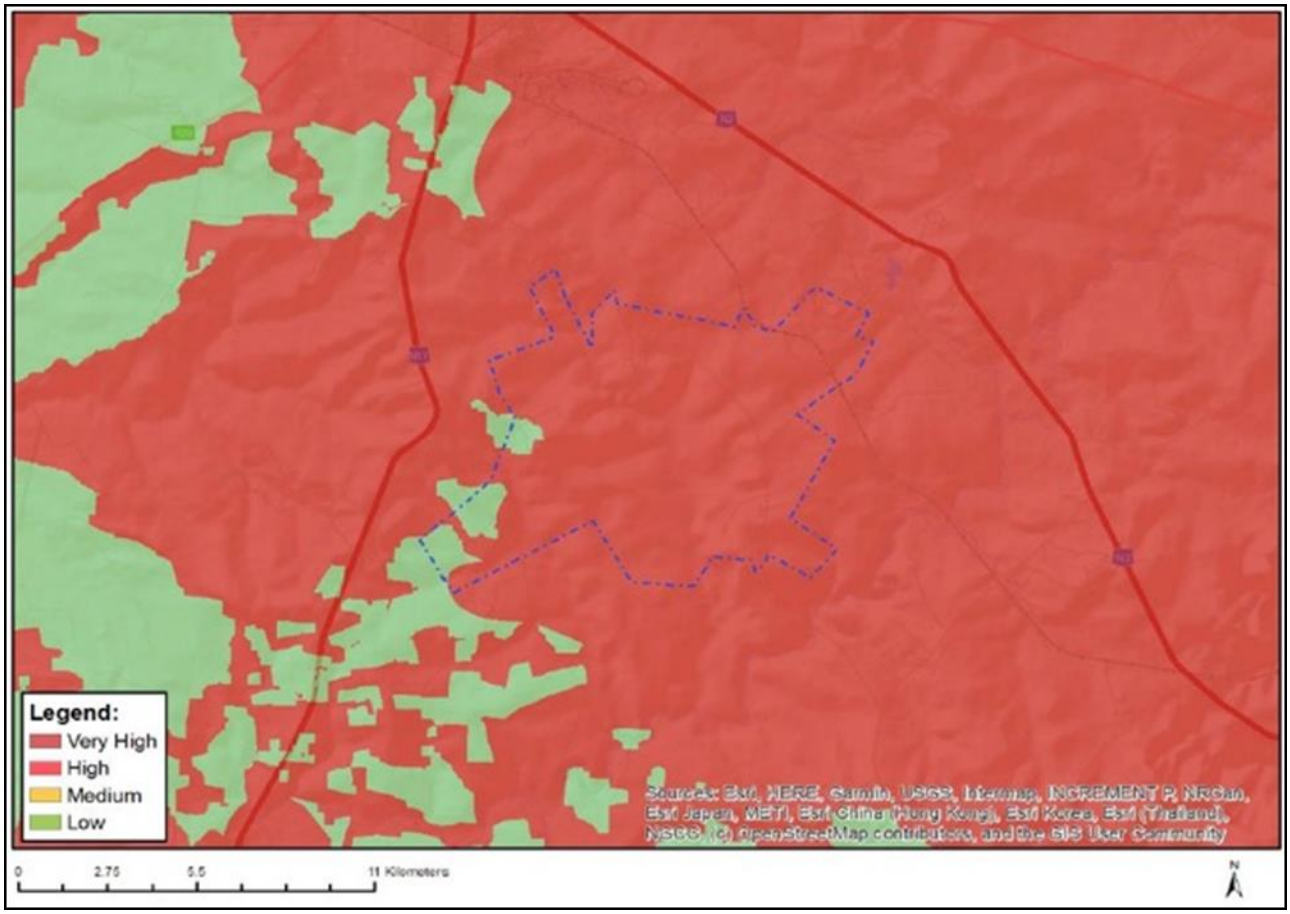


Figure 1-8: DFFE Screening Tool outcome for the terrestrial biodiversity theme

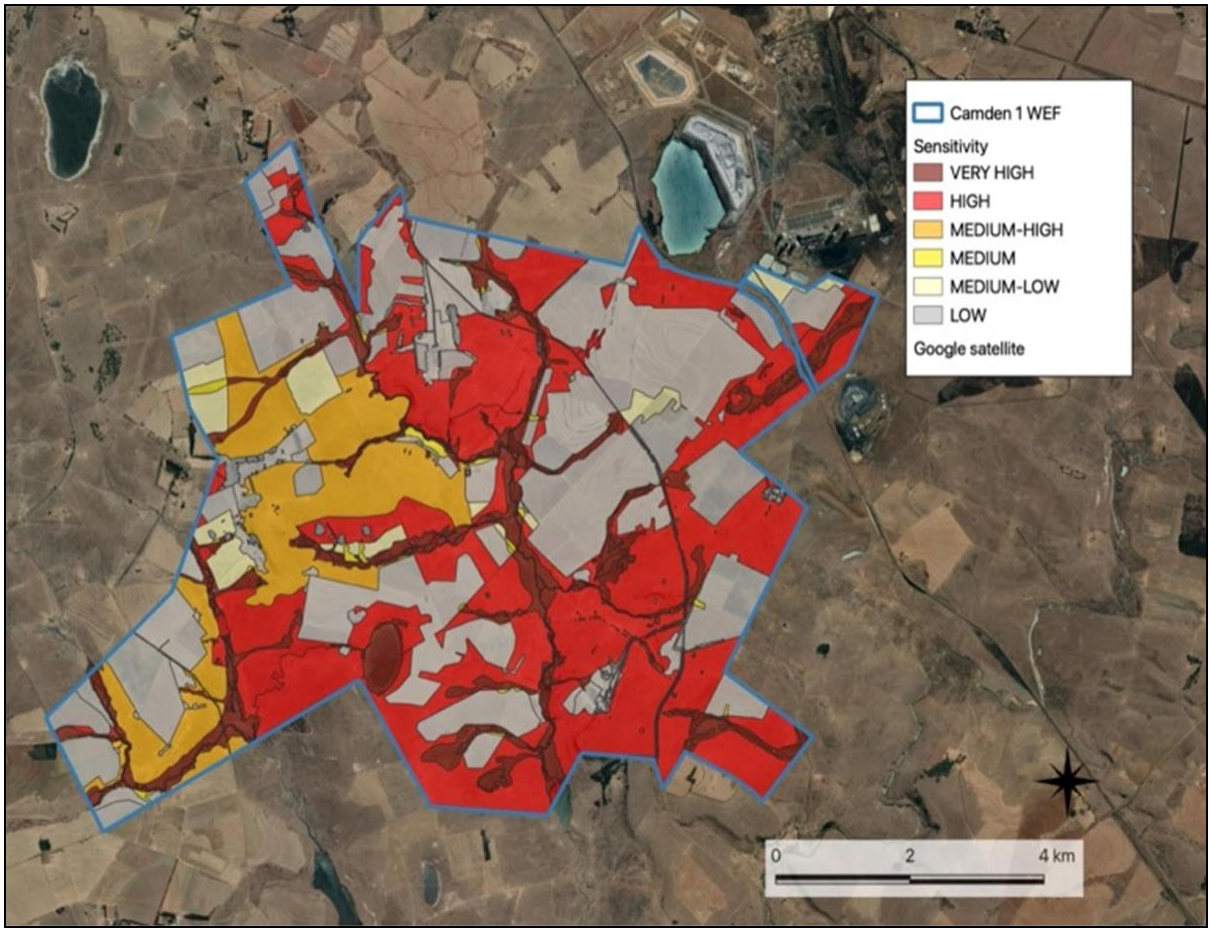


Figure 1-9: Habitat sensitivity of the study area, including consideration of CBAs (David Hoare Consulting, 2022)

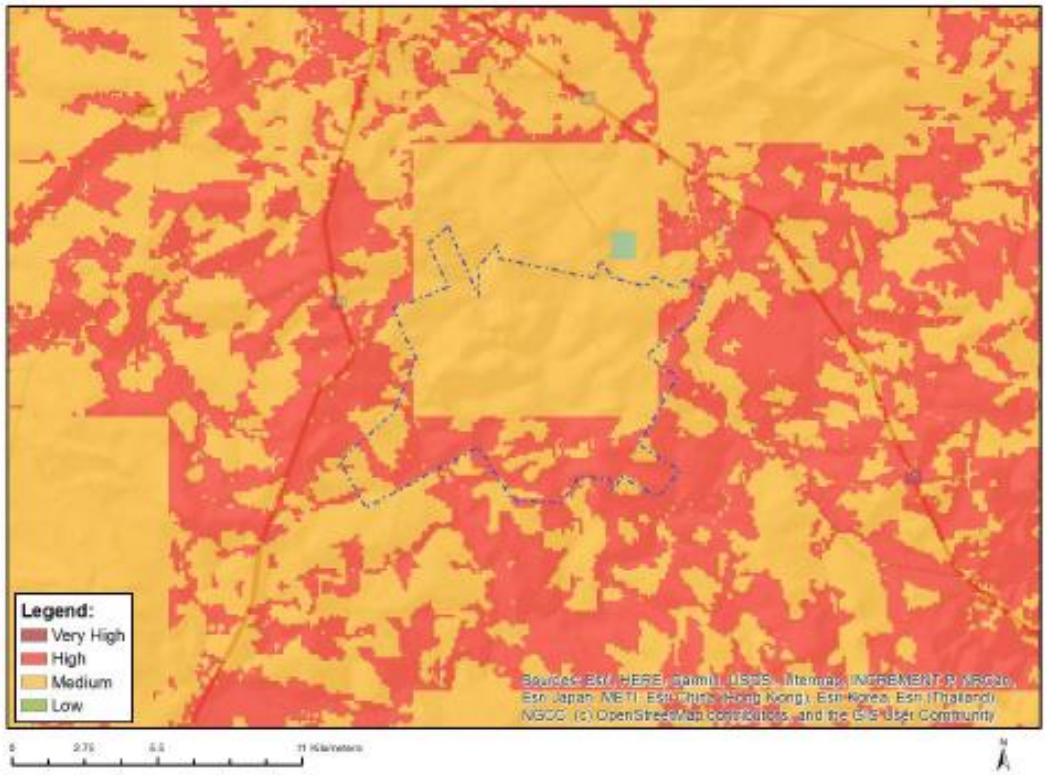
1.5.4 AVIFAUNAL

Based on the DFFE Screening Tool[2], the Animal Species theme, relevant to the Camden I WEF, the project area is classified as **Medium to High** sensitivity (**Figure 1-10**), based on the potential presence of several species of conservation concern (SCC) namely Grey Crowned Crane (Globally and Regionally Endangered), Martial Eagle (Globally and Regionally Endangered), Southern Bald Ibis (Globally and Regionally Vulnerable), White-bellied Korhaan (Regionally Vulnerable) and Secretarybird (Globally Endangered and Regionally Vulnerable).

This classification was confirmed during the site surveys, based on the presence of recorded SCC, namely Secretarybird (Globally Endangered, Regionally Vulnerable) White-bellied Bustard (Regionally Vulnerable), Blue Crane (Globally Vulnerable, Regionally Near-threatened), Grey Crowned Crane (Globally and Regionally Endangered), Martial Eagle (Globally and Regionally Endangered), Lanner Falcon (Regionally Vulnerable), Greater Flamingo (Regionally Near-threatened), Lesser Flamingo (Globally and Regionally Near-threatened), Black Harrier (Regionally and Globally Endangered), Southern Bald Ibis (Regionally and Globally Vulnerable), Blue Korhaan (Globally Near-threatened), African Grass Owl (Regionally Vulnerable) and Cape Vulture (Globally Vulnerable and Regionally Endangered).

[2] The avifaunal wind theme in the screening tool is only applicable to projects in a Renewable Energy Development Zone (REDZ)

MAP OF RELATIVE ANIMAL SPECIES THEME SENSITIVITY



Where only a sensitive plant unique number or sensitive animal unique number is provided in the screening report and an assessment is required, the environmental assessment practitioner (EAP) or specialist is required to email SANBI at eiadatarequests@sanbi.org.za listing all sensitive species with their unique identifiers for which information is required. The name has been withheld as the species may be prone to illegal harvesting and must be protected. SANBI will release the actual species name after the details of the EAP or specialist have been documented.

Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
	X		

Sensitivity Features:

Sensitivity	Feature(s)
High	Aves-Balearica regulorum
High	Aves-Polemaetus bellicosus
High	Aves-Geronticus calvus
High	Aves-Eupodotis senegalensis
Medium	Aves-Balearica regulorum
Medium	Aves-Sagittarius serpentarius

Figure 1-10: DFFE Screening Tool outcome for the animal species theme

Figure 1-11 indicates the avifauna sensitivity zones identified in the course of the study, relevant to the wind energy facility.

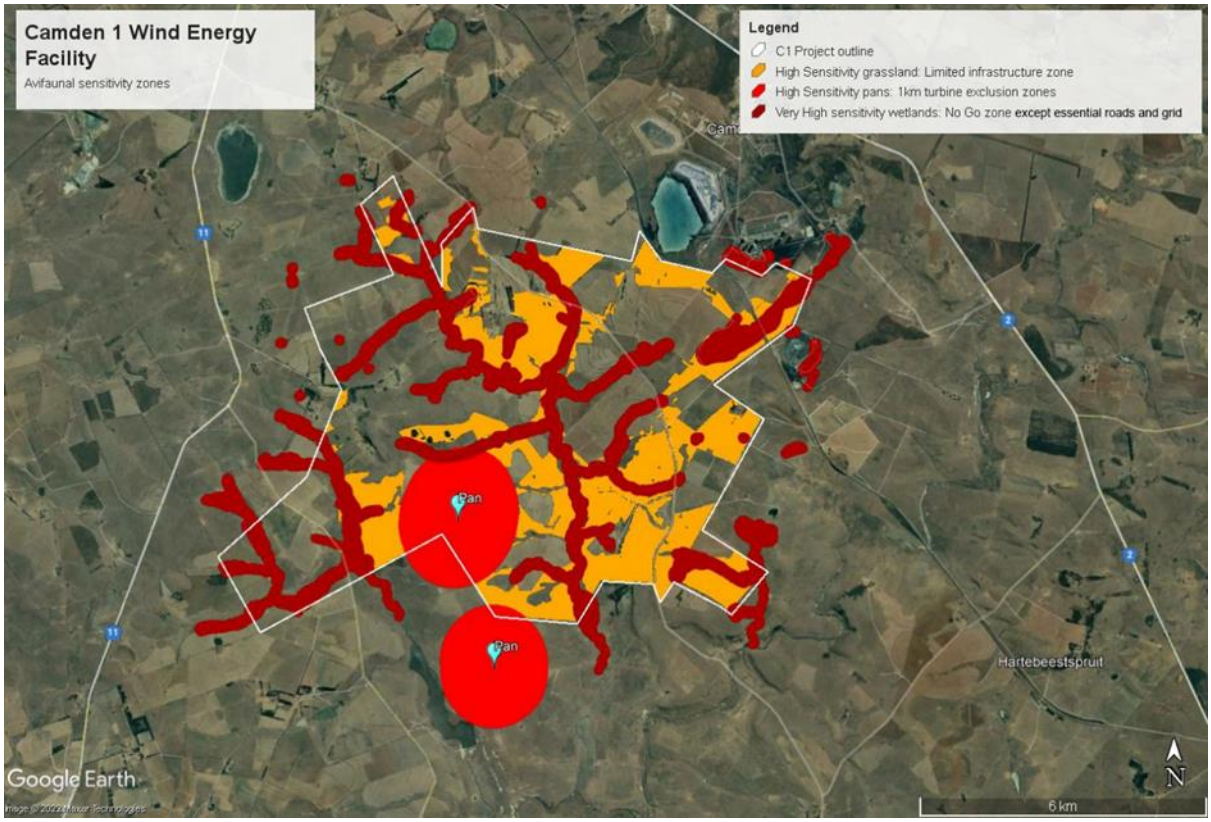


Figure 1-11: Avifaunal sensitivity zones

1.5.5 BATS

The DFFE Screening Tool denotes areas of the Camden I WEF site as High sensitivity with regards to with regards to being within 500m of a river and within 500m of a wetland; a "Medium sensitivity" is also denoted with regards to the presence of croplands. (**Figure 1-12**)

MAP OF RELATIVE BATS (WIND) THEME SENSITIVITY

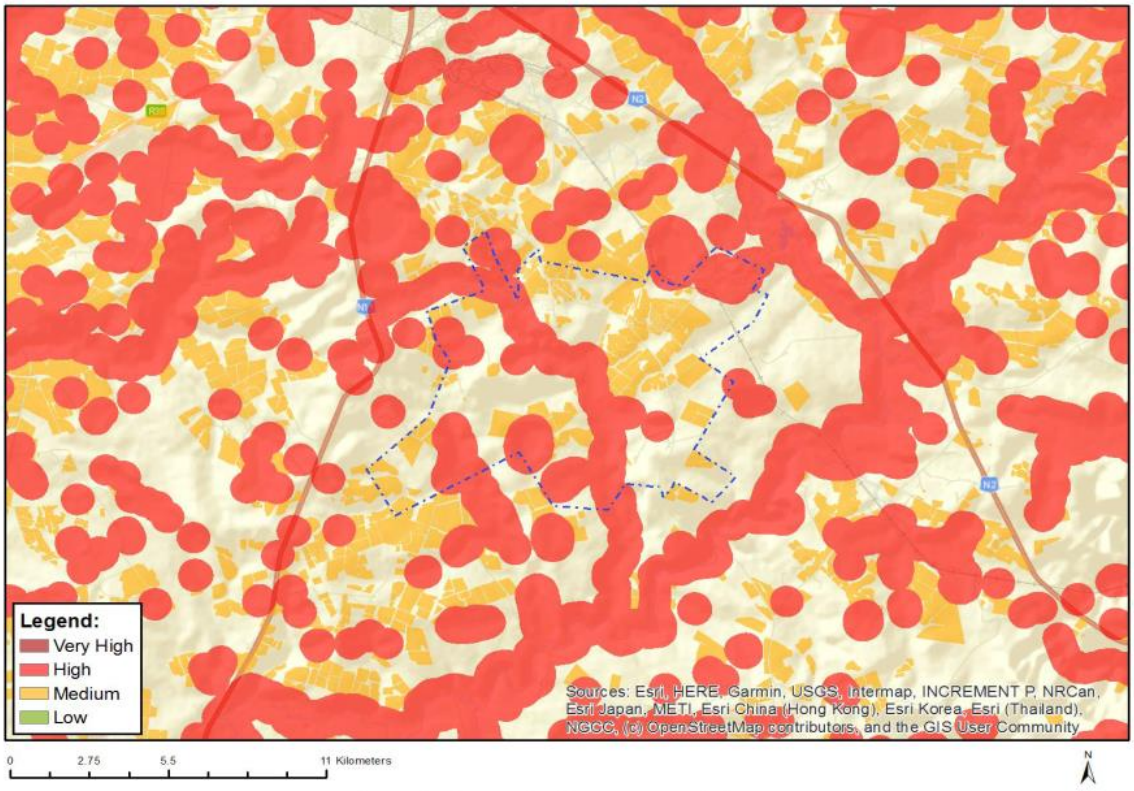


Figure 1-12: DFFE Screening Tool outcome for the bats (wind) theme

The Bat Specialist used Google Earth satellite imagery and verifications during site visits to spatially demarcate areas of the site with high and medium sensitivities relating to bat species ecology and habitat preferences, where high sensitivities and their buffers are no-go zones for turbines and turbine blade overhang. The description of parameters used in the development of the sensitivity map is provided in Error! Reference source not found. and Error! Reference source not found. of the EIR.

Figure 1-13 depicts the sensitive areas of the site, based on features identified to be important for foraging and roosting of the species that are most likely to occur on site. The layout depicted adheres to the sensitivities, as identified in **Table 7-9** of the EIR**.**

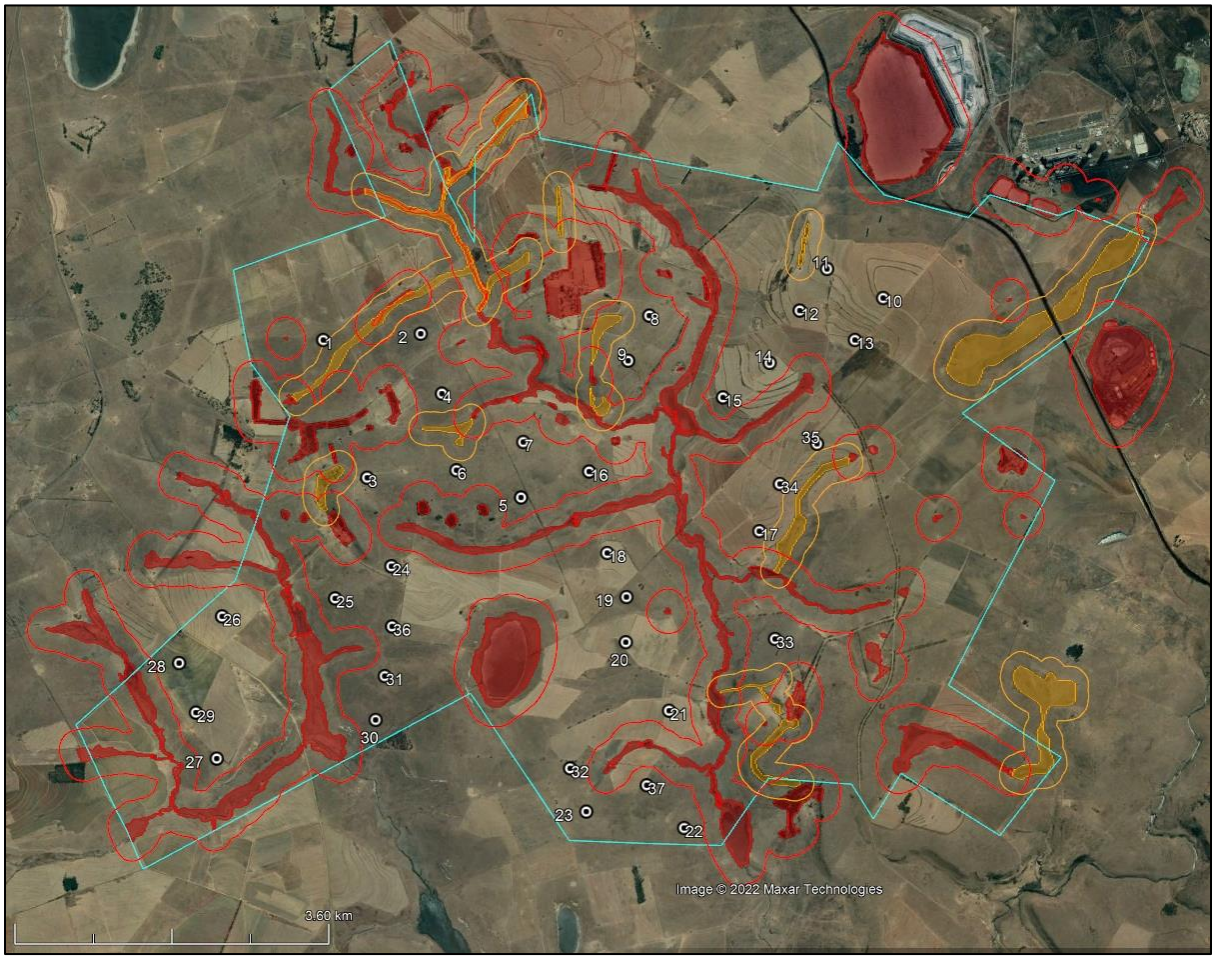
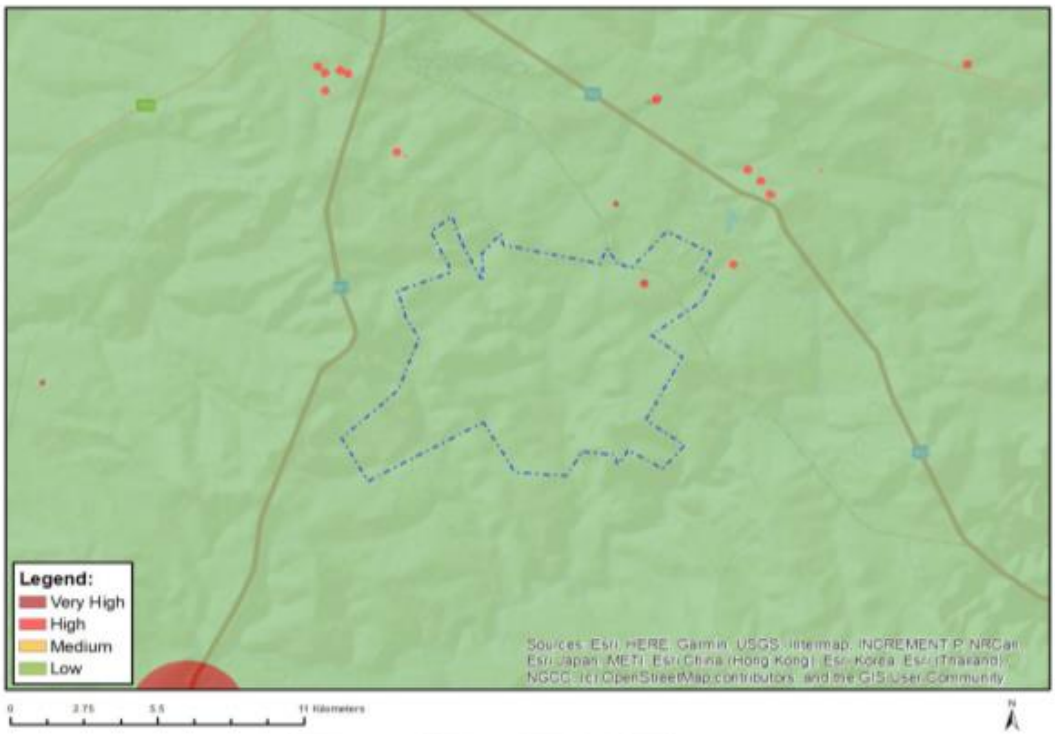


Figure 1-13: Bat sensitivity map of the wind energy facility site (Animalia, 2022)

1.5.6 HERITAGE

Based on the DFFE Screening Tool the Camden I WEF is classified as Very High sensitivity with regards to the archaeological and cultural heritage theme (**Figure 1-14**). This is attributed to the site being within 100m of an Ungraded Heritage site.

MAP OF RELATIVE ARCHAEOLOGICAL AND CULTURAL HERITAGE THEME SENSITIVITY



Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
X			

Sensitivity Features:

Sensitivity	Feature(s)
High	Within 150m of a Grade IIIa Heritage site
Low	Low sensitivity
Very High	Within 100m of an Ungraded Heritage site

Figure 1-14: DFFE Screening Tool outcome for the archaeological and cultural heritage theme

According to the Heritage Specialist the project area is characterised by agricultural activities without any major focal points that would have attracted human occupation in antiquity and is thus considered to be of **Low** archaeological potential. This was confirmed during the field survey and no archaeological sites of significance were noted and finds were limited to ruins (CA001), ephemeral stone packed features of farm labourer dwellings and kraals (CA002, CA004, CA005, CA006, CA007, CA008, CA009, CA010, CA012, CA015. CA016, CA017) as well as a cemetery (CA003). Based on the current layout and recorded observations (**Figure 1-15**) CA001 (located ~ 18 meters west of a proposed road) and CA004 (located ~ 7 meters west of a proposed road) could be impacted on by the proposed Camden 1 WEF. No direct impact is expected on the recorded burial sites in the Project area. The heritage significance of the recorded ruins at CA001 is medium and CA004 is of low significance. The ruins at CA001 are assumed to be older than 60 years based on historical maps dating to 1968 and will need to be recorded prior to application for a destruction permit if impacted on.

In terms of Cultural Landscape the study area is in a rural setting and characterised by cultivation and agricultural activities with a historical layering consisting of burial sites and the remnants of stone packed structures/ settlements.

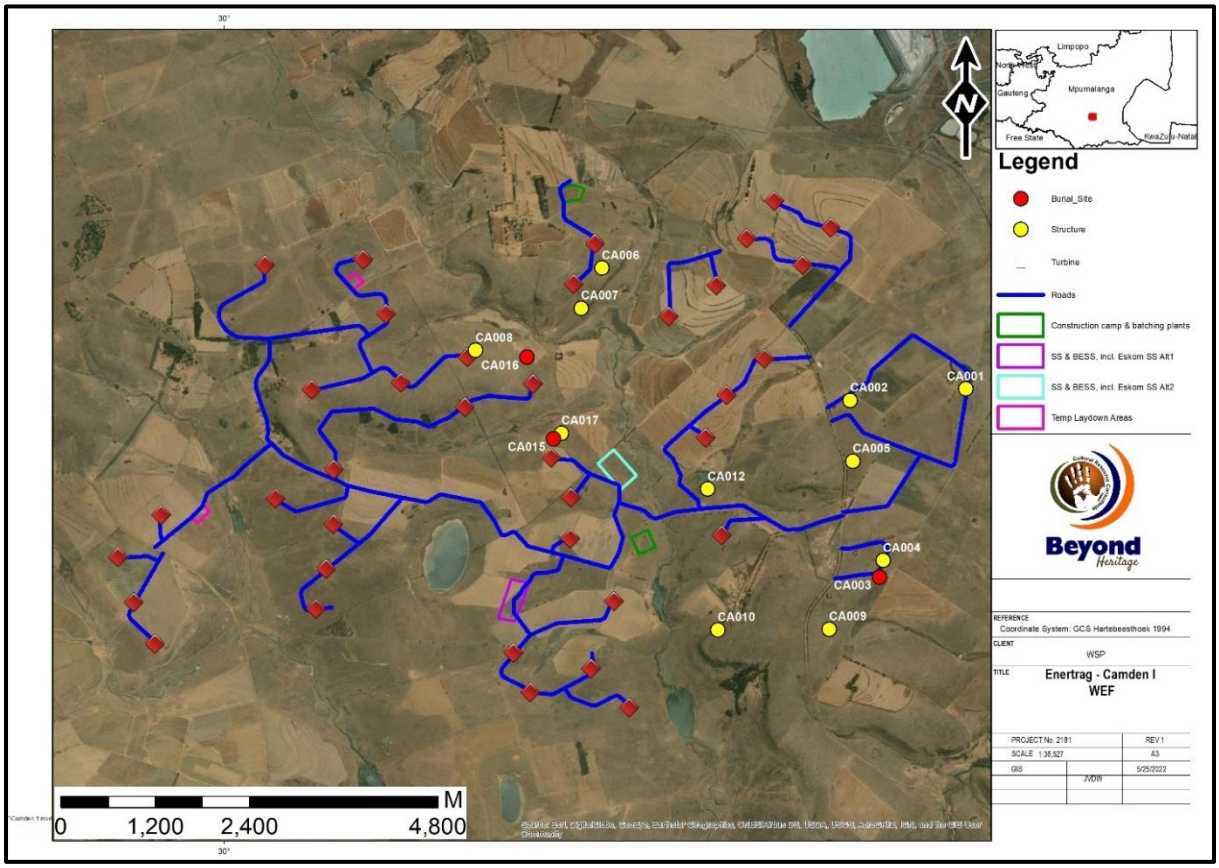


Figure 1-15: Project layout in relation to recorded features (Beyond Heritage, 2022)

1.5.7 VISUAL

In assessing visual sensitivity of the proposed WEF, consideration was given to the was given to the Landscape and Flicker Themes of the National Environmental Screening Tool. Under the Landscape Theme, as shown in **Figure 1-16** below, the tool identifies areas of Very High sensitivity in respect of WEF development on the Camden I WEF site. According to the Screening Tool, the high sensitivity rating applied to the Camden I WEF site is associated with the presence of a demarcated protected area (Langcarel Private Nature Reserve) as well as natural features such as mountain tops, high ridges and steep slopes.

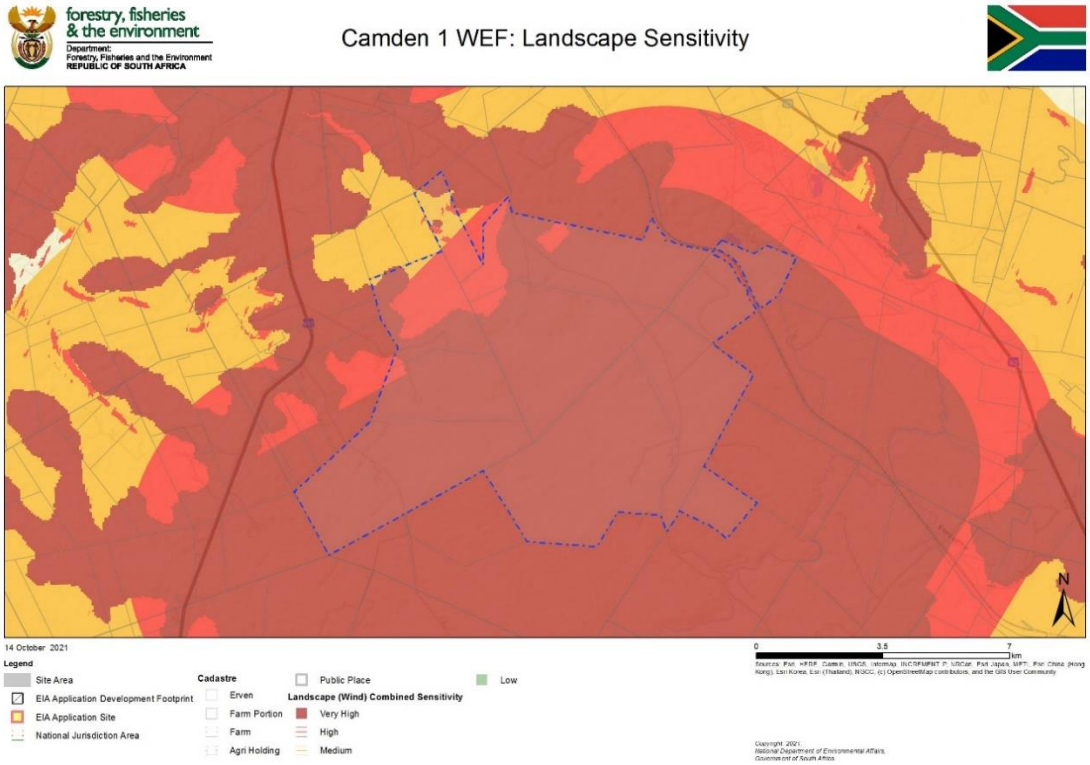


Figure 1-16: DFFE Screening Tool relative landscape sensitivity

The flicker theme demarcates areas (1 km buffers) of sensitivity around identified receptors in the area (**Figure 1-17**). Under this theme, several "receptors" have been identified on the site, the majority of which are concentrated on the western and eastern boundaries of the project area. As a result of the buffers demarcated around these receptors, a significant portion of the site has been assigned a "very high" sensitivity rating.

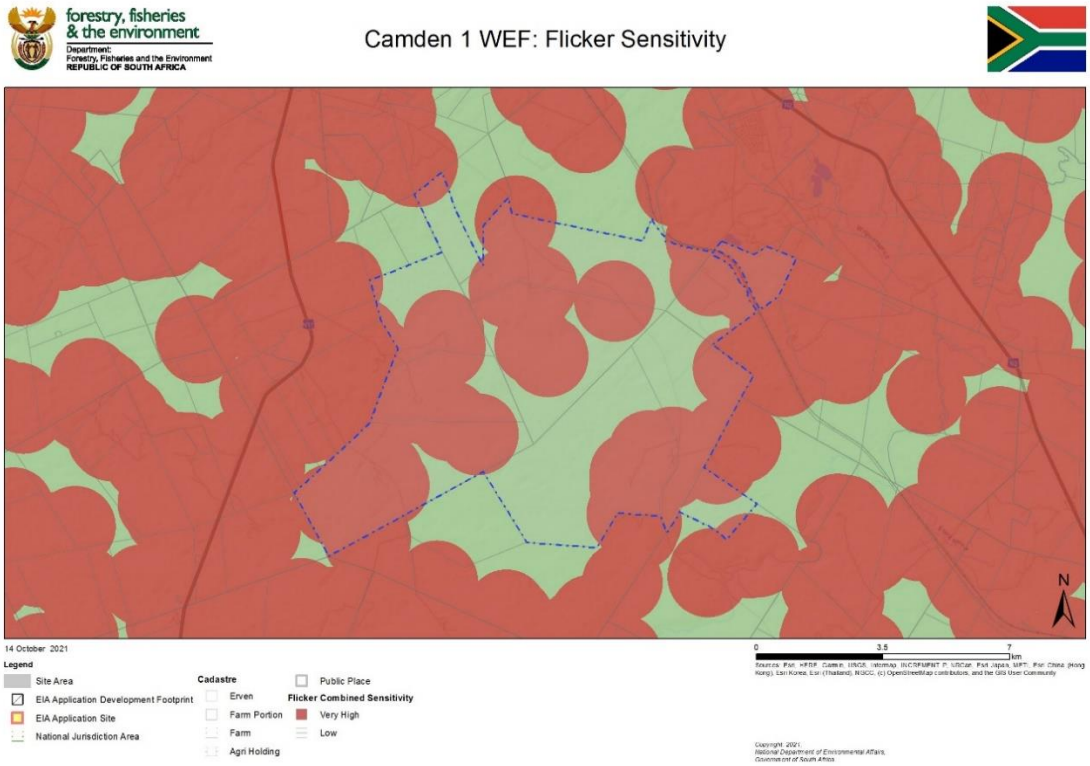


Figure 1-17: DFFE Screening Tool flicker sensitivity

The Screening Tool provides a very high level, desktop assessment and as such the results of the study must be viewed against the findings of the field investigation as well as factors affecting visual impact, such as:

- The presence of visual receptors;
- The distance of those receptors from the proposed development; and
- The likely visibility of the development from the receptor locations.

Although the Screening Tool identifies significant areas of very high landscape and flicker sensitivity, the site sensitivity verification exercise conducted in respect of this VIA found little evidence to support this sensitivity rating. The sensitivity rating for this site is heavily influenced by the Langcarel Private Nature Reserve which is identified in the South African Protected Areas Database. As stated however, the area is entirely managed for commercial agriculture with no conservation activities present and no evidence of public access to the site. Any landscape value or visual appeal has therefore been reduced. Accordingly, the site is not subject to the usual visual / landscape sensitivity associated with nature reserves.

In addition, the desktop topographic assessment of the area did not indicate the presence of mountaintops, high ridges or any significantly steep slopes. This assessment, confirmed by the field investigation, showed the presence of a few ridges in a largely undulating landscape. The sensitivity analysis above has recognised these ridges and identified the higher ridges as zones where development would be least preferred.

The presence of receptors, either within the Camden I WEF project area, or within 500m of the site boundary, was confirmed by the site sensitivity verification exercise. However, an assessment of receptor locations using Google Earth showed that there were no receptors present at some of the locations identified by the National Screening Tool. The remaining (confirmed) receptors were factored into the sensitivity analysis, together with a 500m buffer which is considered sufficient to reduce any adverse effects of shadow flicker.

Using GIS-based visibility analysis, it was possible to determine that the tip of at least one turbine blade (ie at a maximum height of 300m) would be visible from all of the identified potentially sensitive receptors in the study area and as such, no areas on the site are *significantly* more visible than the remainder of the site. It should be noted however that the visual prominence of a very tall structure such as a wind turbine would be exacerbated if located on a ridge top or a relatively high lying plateau. As such, it is recommended that wind turbines should preferably not be located on the highest ridges within the WEF development area. While these ridges could be seen as areas of potentially high visual sensitivity, the study area as a whole is rated as having a low to moderate visual sensitivity, and as such, the sensitivity rating would be reduced to "Medium-High". Hence the ridges **are not** considered to be "no go areas", but rather should be viewed as zones where turbine placement would be least preferred.

From a visual perspective, another aspect is the direct visual impact of the turbines on any farmsteads or receptors located on the application site. Accordingly, a visual sensitivity zone of 500m has been delineated around the existing residences on the application site and also around any receptors located within 500m of the site boundary. In addition, it is recommended that a 300m visual sensitivity zone is applied on either side of the district roads which traverse the WEF project area.

The preclusion of turbine development from these zones would reduce the direct impact of the turbines on the occupants of the farmsteads and on passing motorists, especially those impacts related to shadow flicker (see **Section** Error! Reference source not found. of Visual Impact Assessment Report). At this stage however, the visual sensitivity zones are ***not*** considered "no go" areas, but rather should be viewed as zones where development should be limited. It should be stressed that these zones apply to turbine development only. The visual impacts resulting from the associated on-site infrastructure are considered to have far less significance when viewed in the context of multiple wind turbines and as such the associated on-site infrastructure has been excluded from the sensitivity analysis.

The areas identified as visually sensitive to WEF development are shown in **Figure 1-18** below.

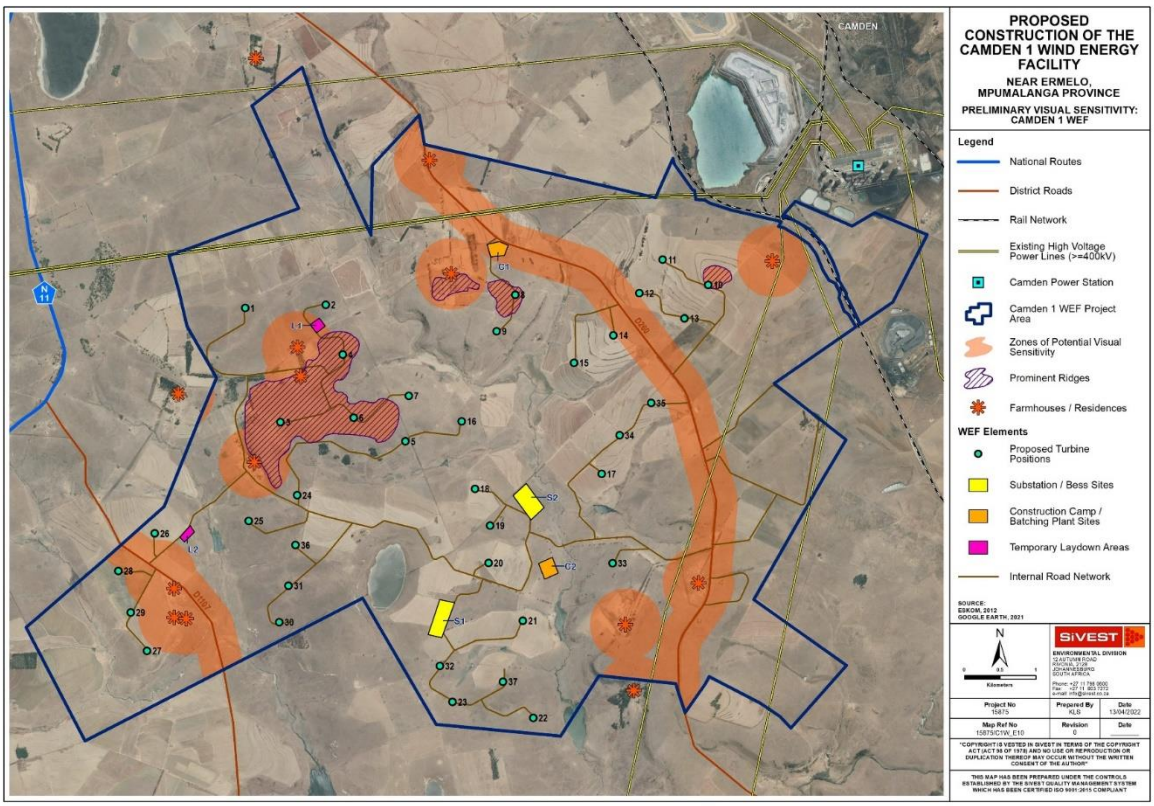


Figure 1-18: Zones of potential visual sensitivity on the Camden I WEF Site

1.5.8 SENSITIVITY MAPPING

A consolidated environmental sensitivity map (**Figure 1-19**) has been compiled based on the sensitivities and buffers outlined in the specialist studies.

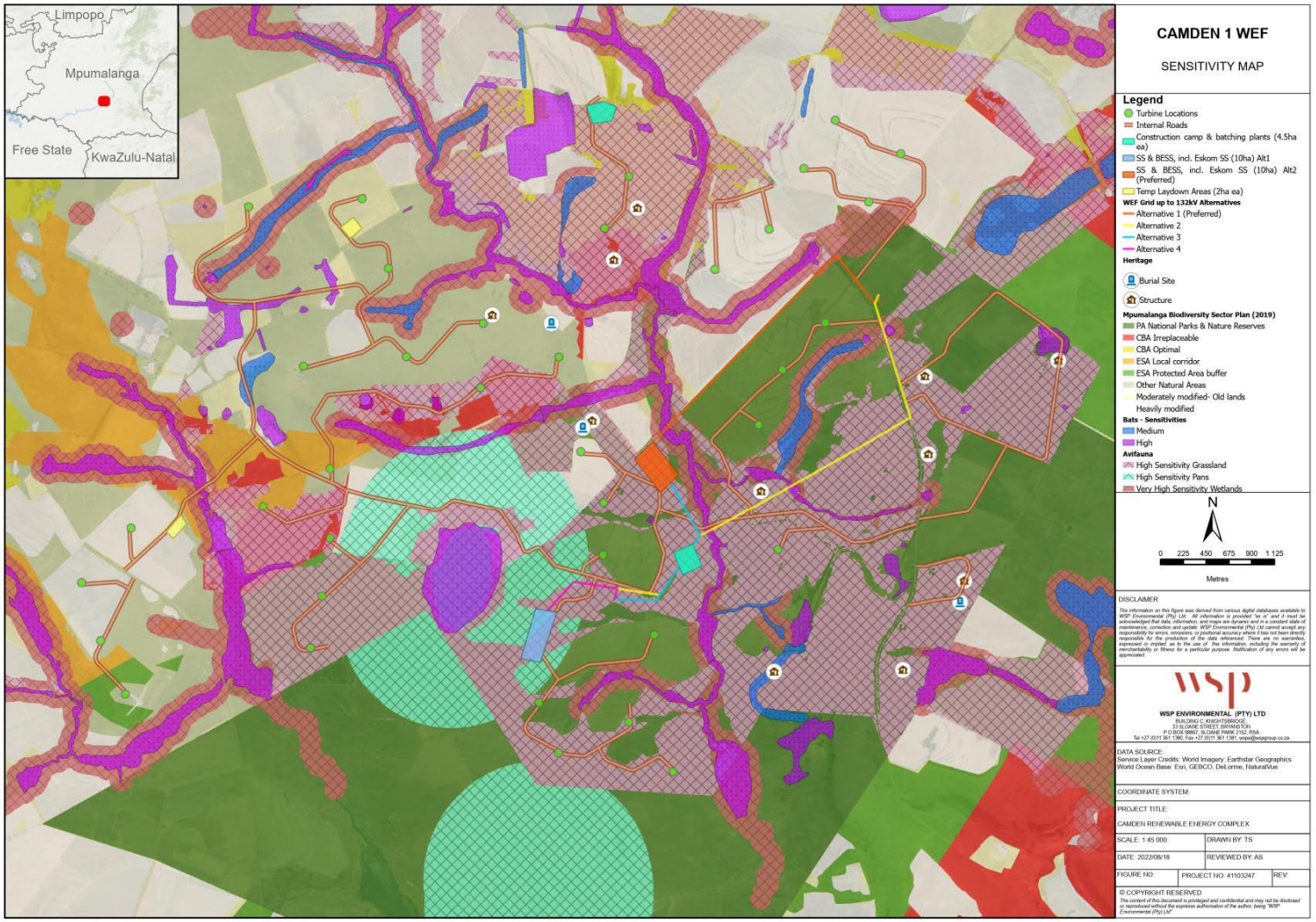


Figure 1-19: Site Layout overlain onto a Consolidated Environmental Sensitivity Map (132kV Grid Connections are subject to a separate EA process)**

1.6 FINDINGS OF THE IMPACT ASSESSMENT

A summary of the identified impacts and corresponding significance ratings for the Camden I WEF is provided in Error! Reference source not found.

Table 1-5: Impact Significance Summary

ASPECT	IMPACT DESCRIPTION	PHASE	SIGNIFICANCE (WITHOUT MITIGATION)	NATURE	SIGNIFICANCE (WITH MITIGATION)	NATURE
Air Quality	Generation of dust and PM.	Construction	**Moderate**	Negative	**Low**	Negative
Noise and Vibrations	Construction noise.	Construction	**Low**	Negative	**Very Low**	Negative
	Operational phase impacts of noise on sensitive receptors.	Operation	**Low**	Negative	**Low**	Negative
Topography & Geology	Displacement and exposure of subsoils, resulting in visual impact. Increased risk of soil erosion.	Construction	**Low**	Negative	**Low**	Negative
	Undermined areas impact on foundations.	Operation	**Low**	Negative	**Low**	Negative
Soils, Land Capability and Agricultural Potential	Loss of agricultural potential by soil degradation.	All Phase	**Very Low**	Negative	**Very Low**	Negative
Aquatic	Loss of Very High Sensitivity Systems.	Construction	**Moderate**	Negative	**Low**	Negative
	Damage or loss of riparian and/or riverine systems.		**Moderate**	Negative	**Low**	Negative
	Potential impact on localised surface water quality		**Moderate**	Negative	**Low**	Negative
	Impact on habitat change and fragmentation related to hydrological regimes.		**Moderate**	Negative	**Low**	Negative
	Impact of increased run off leading to erosion and sedimentation.	Operation	**Low**	Negative	**Very Low**	Negative

ASPECT	IMPACT DESCRIPTION	PHASE	SIGNIFICANCE (WITHOUT MITIGATION)	NATURE	SIGNIFICANCE (WITH MITIGATION)	NATURE
Biodiversity	Loss of indigenous natural vegetation.	Construction	**Moderate**	Negative	**Moderate**	Negative
	Impact on integrity of Critical Biodiversity Areas.		**Moderate**	Negative	**Moderate**	Negative
	Establishment and spread of declared weeds and alien invader plants.		**Low**	Negative	**Very Low**	Negative
	Continued disturbance to natural habitats due to general operational activities and maintenance.	Operation	**Moderate**	Negative	**Low**	Negative
	Establishment and spread of declared weeds and alien invader plants.		**Moderate**	Negative	**Very Low**	Negative
	Continued runoff and erosion.		**Moderate**	Negative	**Low**	Negative
	Loss and disturbance of natural vegetation due to the removal of infrastructure and need for working sites.	Decommissioning	**Low**	Negative	**Low**	Negative
	Establishment and spread of declared weeds and alien invader plants.		**Moderate**	Negative	**Low**	Negative
Avifauna	Displacement of priority species due to disturbance associated with the construction of the wind turbines and associated infrastructure.	Construction	**Moderate**	Negative	**Moderate**	Negative
	Displacement of priority species due to habitat transformation associated with the construction of the wind turbines and associated infrastructure.		**Moderate**	Negative	**Moderate**	Negative

ASPECT	IMPACT DESCRIPTION	PHASE	SIGNIFICANCE (WITHOUT MITIGATION)	NATURE	SIGNIFICANCE (WITH MITIGATION)	NATURE
	Displacement of priority species due to disturbance associated with the construction of the BESS.		**Low**	Negative	**Very Low**	Negative
	Displacement of priority species due to habitat transformation associated with the construction of the BESS.		**Low**	Negative	**Low**	Negative
	Mortality of priority species due to collisions with the wind turbines	Operation	**Moderate**	Negative	**Low**	Negative
	Electrocution of priority species on the medium voltage infrastructure.		**Moderate**	Negative	**Low**	Negative
	Mortality of priority species due to collisions with the medium voltage infrastructure.		**Moderate**	Negative	**Low**	Negative
	Displacement of priority species due to disturbance associated with the dismantling of the wind turbines and associated infrastructure.	Decommissioning	**Moderate**	Negative	**Low**	Negative
Bats	Loss of foraging habitat by clearing of vegetation.	Construction	**Moderate**	Negative	**Low**	Negative
	Roost destruction during earthworks.		**Moderate**	Negative	**Very Low**	Negative
	Bat mortalities during foraging.	Operation	**High**	Negative	**Moderate**	Negative
	Bat mortalities during migration.		**Moderate**	Negative	**Low**	Negative
	Increased bat mortalities due to light attraction and habitat creation.		**High**	Negative	**Low**	Negative
Visual and Landscape	Visual impact due to construction.	Construction	**Moderate**	Negative	**Low**	Negative

ASPECT	IMPACT DESCRIPTION	PHASE	SIGNIFICANCE (WITHOUT MITIGATION)	NATURE	SIGNIFICANCE (WITH MITIGATION)	NATURE
	Visual impact of wind turbines and associated infrastructure.	Operation	**Moderate**	Negative	**Moderate**	Negative
	Visual impact due to decommissioning	Decommissioning	**Moderate**	Negative	**Low**	Negative
Heritage and Cultural Resources	Destruction or damage to recorded ruins.	Construction	**Low**	Negative	**Very Low**	Negative
	Destruction or damage to recorded graves.		**High**	Negative	**Low**	Negative
Palaeontology	Loss of fossils.	Construction	**Low**	Negative	**Very Low**	Positive (Recovery of fossils)
Transport	Noise, dust & exhaust pollution due to vehicle trips on-site.	Construction	**Low**	Negative	**Very Low**	Negative
	Noise, dust & exhaust pollution due to additional trips on the national and district roads.		**Low**	Negative	**Very Low**	Negative
Social	Creation of employment and business opportunities.	Construction	**Low**	Positive	**Moderate**	Positive
	Impacts on family structures and social networks associated with the presence of construction workers.		**Moderate**	Negative	**Low**	Negative
	Influx of job seekers into local community.		**Low**	Negative	**Low**	Negative
	Risk to safety, livestock and damage to farm infrastructure.		**Moderate**	Negative	**Low**	Negative
	Noise, dust and safety impacts associated with movement of construction related activities and movement of traffic to and from the site.		**Low**	Negative	**Very Low**	Negative

ASPECT	IMPACT DESCRIPTION	PHASE	SIGNIFICANCE (WITHOUT MITIGATION)	NATURE	SIGNIFICANCE (WITH MITIGATION)	NATURE
	Loss of livestock and grazing and damage to farm infrastructure associated with increased incidence of grass fires.		**Moderate**	Negative	**Low**	Negative
	Impact on productive farmland.		**Moderate**	Negative	**Low**	Negative
	Improve energy security and support renewable sector.	Operation	**Moderate**	Negative	**Moderate**	Positive
	Creation of employment, skills development and business opportunities.		**Low**	Positive	**Moderate**	Positive
	Generation of additional income for affected farmers.		**Low**	Positive	**Moderate**	Positive
	Benefits associated with support for local community's from SED contributions.		**Moderate**	Positive	**Moderate**	Positive
	Visual impact and impact on the areas rural sense of place.		**Low**	Negative	**Low**	Negative
	Visual impact and impact on property values.		**Low**	Negative	**Very Low**	Negative
	Impact of the WEF on local tourism operations and activities.		**Very Low**	Negative	**Very Low**	Negative
Climate Change	Emissions of air pollutants	Construction	**Moderate**	Negative	**Low**	Negative
	Reduced GHGs and contribution of cleaner energy to the National grid.	Operation	**High**	Positive	**High**	Positive
Hazardous Substances and Pollutants	Soil, groundwater and surface water contamination	Construction	**Low**	Negative	**Low**	Negative

ASPECT	IMPACT DESCRIPTION	PHASE	SIGNIFICANCE (WITHOUT MITIGATION)	NATURE	SIGNIFICANCE (WITH MITIGATION)	NATURE
	Soil, groundwater and surface water contamination	Operation	**Low**	Negative	**Low**	Negative
Waste Management	Generation of general and hazardous waste	Construction	**Moderate**	Negative	**Low**	Negative
	Generation of sanitation waste		**Moderate**	Negative	**Low**	Negative
Safety, Health and Environmental Risk	Human health - chronic exposure to toxic chemical or biological agents for SSL BESS	Construction	**Moderate**	Negative	**Low**	Negative
	Human health - exposure to noise for SSL BESS	Construction	**Moderate**	Negative	**Low**	Negative
	Human health - exposure to temperature extremes and/or humidity for SSL BESS	Construction	**Low**	Negative	**Very Low**	Negative
	Human health - exposure to psychological stress for SSL BESS	Construction	**Low**	Negative	**Low**	Negative
	Human health - exposure to ergonomic stress for SSL BESS	Construction	**Low**	Negative	**Low**	Negative
	Human and equipment safety - exposure to fire radiation for SSL BESS	Construction	**Moderate**	Negative	**Low**	Negative
	Human and equipment safety - exposure to fire radiation for SSL BESS	Construction	**Moderate**	Negative	**Low**	Negative
	Human and equipment safety - exposure to explosion over pressures for SSL BESS	Construction	**Moderate**	Negative	**Low**	Negative
	Human and equipment safety - exposure to acute toxic chemical and biological agents for SSL BESS	Construction	**Moderate**	Negative	**Low**	Negative

ASPECT	IMPACT DESCRIPTION	PHASE	SIGNIFICANCE (WITHOUT MITIGATION)	NATURE	SIGNIFICANCE (WITH MITIGATION)	NATURE
	Human and equipment safety - exposure to acute toxic chemical and biological agents for SSL BESS	Construction	**Moderate**	Negative	**Low**	Negative
	Human and equipment safety - exposure to violent release of kinetic or potential energy for SSL BESS	Construction	**High**	Negative	**Low**	Negative
	Human and equipment safety - exposure to electromagnetic waves for SSL BESS	Construction	**Moderate**	Negative	**Low**	Negative
	Environment - emissions to air for SSL BESS	Construction	**Low**	Negative	**Very Low**	Negative
	Environment - emissions to water for SSL BESS	Construction	**Low**	Negative	**Low**	Negative
	Environment - emissions to earth for SSL BESS	Construction	**Low**	Negative	**Low**	Negative
	Environment - waste of resources e.g. water, power etc for SSL BESS	Construction	**Low**	Negative	**Very Low**	Negative
	Public – aesthetics for SSL BESS	Construction	**Moderate**	Negative	**Low**	Negative
	Investors – financial for SSL BESS	Construction	**Moderate**	Negative	**Low**	Negative
	Employees and investors – security for SSL BESS	Construction	**Moderate**	Negative	**Low**	Negative
	Emergencies for SSL BESS	Construction	**Moderate**	Negative	**Low**	Negative
	Investors – legal for SSL BESS	Construction	**Moderate**	Negative	**Low**	Negative
	Human health - chronic exposure to toxic chemical or biological agents for VRF BESS	Construction	**Moderate**	Negative	**Low**	Negative

ASPECT	IMPACT DESCRIPTION	PHASE	SIGNIFICANCE (WITHOUT MITIGATION)	NATURE	SIGNIFICANCE (WITH MITIGATION)	NATURE
	Human health - exposure to noise for VRF BESS	Construction	**Moderate**	Negative	**Low**	Negative
	Human health - exposure to temperature extremes and/or humidity for VRF BESS	Construction	**Low**	Negative	**Very Low**	Negative
	Human health - exposure to psychological stress for VRF BESS	Construction	**Low**	Negative	**Low**	Negative
	Human health - exposure to ergonomic stress for VRF BESS	Construction	**Low**	Negative	**Low**	Negative
	Human and equipment safety - exposure to fire radiation for VRF BESS	Construction	**Moderate**	Negative	**Low**	Negative
	Human and equipment safety - exposure to acute toxic chemical and biological agents for VRF BESS	Construction	**Moderate**	Negative	**Low**	Negative
	Human and equipment safety - exposure to violent release of kinetic or potential energy for VRF BESS	Construction	**High**	Negative	**Low**	Negative
	Human and equipment safety - exposure to electromagnetic waves for VRF BESS	Construction	**Moderate**	Negative	**Low**	Negative
	Environment - emissions to air for VRF BESS	Construction	**Low**	Negative	**Very Low**	Negative
	Environment - emissions to water for VRF BESS	Construction	**Low**	Negative	**Low**	Negative
	Environment - emissions to earth for VRF BESS	Construction	**Low**	Negative	**Low**	Negative
	Environment - waste of resources e.g. water, power etc for VRF BESS	Construction	**Low**	Negative	**Very Low**	Negative

ASPECT	IMPACT DESCRIPTION	PHASE	SIGNIFICANCE (WITHOUT MITIGATION)	NATURE	SIGNIFICANCE (WITH MITIGATION)	NATURE
	Public – aesthetics for VRF BESS	Construction	**Moderate**	Negative	**Low**	Negative
	Investors – financial for VRF BESS	Construction	**Moderate**	Negative	**Low**	Negative
	Employees and investors – security for VRF BESS	Construction	**Moderate**	Negative	**Low**	Negative
	Emergencies for VRF BESS	Construction	**Moderate**	Negative	**Low**	Negative
	Investors – legal for VRF BESS	Construction	**Moderate**	Negative	**Low**	Negative
	Human health - chronic exposure to toxic chemical or biological agents for SSL BESS	Operational	**Moderate**	Negative	**Low**	Negative
	Human health - chronic exposure to toxic chemical or biological agents for SSL BESS	Operational	**Moderate**	Negative	**Low**	Negative
	Human health - exposure to noise for SSL BESS	Operational	**Moderate**	Negative	**Low**	Negative
	Human health - exposure to temperature extremes and/or humidity for SSL BESS	Operational	**Low**	Negative	**Very Low**	Negative
	Human health - exposure to psychological stress for SSL BESS	Operational	**Low**	Negative	**Very Low**	Negative
	Human health - exposure to ergonomic stress for SSL BESS	Operational	**Moderate**	Negative	**Low**	Negative
	Human and equipment safety - exposure to fire radiation for SSL BESS	Operational	**High**	Negative	**Low**	Negative
	Human and equipment safety - exposure to fire radiation for SSL BESS	Operational	**High**	Negative	**Low**	Negative

ASPECT	IMPACT DESCRIPTION	PHASE	SIGNIFICANCE (WITHOUT MITIGATION)	NATURE	SIGNIFICANCE (WITH MITIGATION)	NATURE
	Human and equipment safety - exposure to explosion over pressures for SSL BESS	Operational	**Moderate**	Negative	**Low**	Negative
	Human and equipment safety - exposure to acute toxic chemical and biological agents for SSL BESS	Operational	**Low**	Negative	**Low**	Negative
	Human and equipment safety - exposure to acute toxic chemical and biological agents for SSL BESS	Operational	**Moderate**	Negative	**Low**	Negative
	Human and equipment safety - exposure to violent release of kinetic or potential energy for SSL BESS	Operational	**Moderate**	Negative	**Low**	Negative
	Human and equipment safety - exposure to electromagnetic waves for SSL BESS	Operational	**Moderate**	Negative	**Low**	Negative
	Environment - emissions to air for SSL BESS	Operational	**Low**	Negative	**Very Low**	Negative
	Environment - emissions to water for SSL BESS	Operational	**Low**	Negative	**Low**	Negative
	Environment - emissions to earth for SSL BESS	Operational	**Low**	Negative	**Very Low**	Negative
	Environment - waste of resources e.g. water, power etc for SSL BESS	Operational	**Low**	Negative	**Very Low**	Negative
	Public – aesthetics for SSL BESS	Operational	**Low**	Negative	**Low**	Negative
	Investors – financial for SSL BESS	Operational	**Moderate**	Negative	**Low**	Negative
	Employees and investors – security for SSL BESS	Operational	**Moderate**	Negative	**Low**	Negative

ASPECT	IMPACT DESCRIPTION	PHASE	SIGNIFICANCE (WITHOUT MITIGATION)	NATURE	SIGNIFICANCE (WITH MITIGATION)	NATURE
	Employees and investors – security for SSL BESS	Operational	**Moderate**	Negative	**Low**	Negative
	Emergencies for SSL BESS	Operational	**Moderate**	Negative	**Low**	Negative
	Investors – legal for SSL BESS	Operational	**Moderate**	Negative	**Low**	Negative
	Human health - chronic exposure to toxic chemical or biological agents for VRF BESS	Operational	**Moderate**	Negative	**Low**	Negative
	Human health - chronic exposure to toxic chemical or biological agents for VRF BESS	Operational	**Moderate**	Negative	**Low**	Negative
	Human health - exposure to noise for VRF BESS	Operational	**Moderate**	Negative	**Low**	Negative
	Human health - exposure to temperature extremes and/or humidity for VRF BESS	Operational	**Low**	Negative	**Very Low**	Negative
	Human health - exposure to psychological stress for VRF BESS	Operational	**Low**	Negative	**Very Low**	Negative
	Human health - exposure to ergonomic stress for VRF BESS	Operational	**Moderate**	Negative	**Low**	Negative
	Human and equipment safety - exposure to fire radiation for VRF BESS	Operational	**Moderate**	Negative	**Low**	Negative
	Human and equipment safety - exposure to fire radiation for VRF BESS	Operational	**Moderate**	Negative	**Low**	Negative
	Human and equipment safety - exposure to explosion over pressures for VRF BESS	Operational	**Moderate**	Negative	**Low**	Negative

ASPECT	IMPACT DESCRIPTION	PHASE	SIGNIFICANCE (WITHOUT MITIGATION)	NATURE	SIGNIFICANCE (WITH MITIGATION)	NATURE
	Human and equipment safety - exposure to acute toxic chemical and biological agents for VRF BESS	Operational	**Low**	Negative	**Low**	Negative
	Human and equipment safety - exposure to acute toxic chemical and biological agents for VRF BESS	Operational	**Moderate**	Negative	**Low**	Negative
	Human and equipment safety - exposure to violent release of kinetic or potential energy for VRF BESS	Operational	**Moderate**	Negative	**Low**	Negative
	Human and equipment safety - exposure to electromagnetic waves for VRF BESS	Operational	**Moderate**	Negative	**Low**	Negative
	Environment - emissions to air for VRF BESS	Operational	**Low**	Negative	**Very Low**	Negative
	Environment - emissions to water for VRF BESS	Operational	**Low**	Negative	**Low**	Negative
	Environment - emissions to earth for VRF BESS	Operational	**Low**	Negative	**Very Low**	Negative
	Environment - waste of resources e.g. water, power etc for VRF BESS	Operational	**Low**	Negative	**Very Low**	Negative
	Public – aesthetics for VRF BESS	Operational	**Moderate**	Negative	**Low**	Negative
	Investors – financial for VRF BESS	Operational	**Moderate**	Negative	**Low**	Negative
	Employees and investors – security for VRF BESS	Operational	**Moderate**	Negative	**Low**	Negative
	Employees and investors – security for VRF BESS	Operational	**Moderate**	Negative	**Low**	Negative
	Emergencies for VRF BESS	Operational	**Moderate**	Negative	**Low**	Negative

ASPECT	IMPACT DESCRIPTION	PHASE	SIGNIFICANCE (WITHOUT MITIGATION)	NATURE	SIGNIFICANCE (WITH MITIGATION)	NATURE
	Investors – legal for VRF BESS	Operational	**Moderate**	Negative	**Low**	Negative
	Human health - chronic exposure to toxic chemical or biological agents for both BESS types	Decommissioning	**Very Low**	Negative	**Very Low**	Negative
	Human health - exposure to noise for both BESS types	Decommissioning	**Very Low**	Negative	**Very Low**	Negative
	Human health - exposure to temperature extremes and/or humidity for both BESS types	Decommissioning	**Very Low**	Negative	**Very Low**	Negative
	Human health - exposure to psychological stress for both BESS types	Decommissioning	**Very Low**	Negative	**Very Low**	Negative
	Human health - exposure to ergonomic stress for both BESS types	Decommissioning	**Very Low**	Negative	**Very Low**	Negative
	Human and equipment safety - exposure to fire radiation for both BESS types	Decommissioning	**Very Low**	Negative	**Very Low**	Negative
	Human and equipment safety - exposure to explosion over pressures for both BESS types	Decommissioning	**Very Low**	Negative	**Very Low**	Negative
	Human and equipment safety - exposure to acute toxic chemical and biological agents for both BESS types	Decommissioning	**Very Low**	Negative	**Very Low**	Negative
	Human and equipment safety - exposure to violent release of kinetic or potential energy for both BESS types	Decommissioning	**Very Low**	Negative	**Very Low**	Negative
	Human and equipment safety - exposure to electromagnetic waves for both BESS types	Decommissioning	**Very Low**	Negative	**Very Low**	Negative

ASPECT	IMPACT DESCRIPTION	PHASE	SIGNIFICANCE (WITHOUT MITIGATION)	NATURE	SIGNIFICANCE (WITH MITIGATION)	NATURE
	Environment - emissions to air for both BESS types	Decommissioning	**Very Low**	Negative	**Very Low**	Negative
	Environment - emissions to water for both BESS types	Decommissioning	**Very Low**	Negative	**Very Low**	Negative
	Environment - emissions to earth for both BESS types	Decommissioning	**Moderate**	Negative	**Low**	Negative
	Environment - waste of resources e.g. water, power etc for both BESS types	Decommissioning	**Very Low**	Negative	**Very Low**	Negative
	Public – aesthetics for both BESS types	Decommissioning	**Very Low**	Negative	**Very Low**	Negative
	Investors – financial for both BESS types	Decommissioning	**Very Low**	Negative	**Very Low**	Negative
	Employees and investors – security for both BESS types	Decommissioning	**Very Low**	Negative	**Very Low**	Negative
	Emergencies for SSL for both BESS types	Decommissioning	**Very Low**	Negative	**Very Low**	Negative
	Investors – legal for both BESS types	Decommissioning	**Moderate**	Negative	**Low**	Negative

1.7 APPLICABLE DOCUMENTATION

The EMPr (this Report) is to be read in conjunction with following documentation:

- Draft EIR for the proposed Camden I Wind Energy Facility (August 2022);
- Generic EMPr for the Development and Expansion of Substation Infrastructure for the Transmission and Distribution of Electricity – Camden I WEF;
- Site Sensitivity Verification and Agricultural Agro-Ecosystem Specialist Assessment for the proposed Camden I Wind Energy Facility;
- Camden I Solar, Wind and Hydrogen/Ammonia Energy Projects: EIA Phase Aquatic Impact Assessment;
- Avifaunal Impact Assessment: Camden I Wind Energy Facility, Grid Connection and Battery Storage Facility;
- 12-Month Pre-construction Bast and Environmental Impact Assessment Report for the proposed Camden I Wind Energy Facility (WEF);
- Terrestrial Biodiversity Assessment: Camden I WEF near Ermelo in Mpumalanga Province;

- Geotechnical Desk Study for Camden I Renewable Energy Complex;
- Heritage Impact Assessment for the proposed Camden I Wind Energy Facility (up to 200MW), Mpumalanga Province;
- Palaeontological Impact Assessment for the proposed Camden I Wind Energy Facility (up to 200MW), west of Camden, Mpumalanga Province;
- Environmental Acoustic Impact Assessment: Camden I Wind Energy Facility;
- High Level Safety Health and Environmental Risk Assessment for the proposed development of Battery Energy Storage Systems at the Camden I Wind Energy facilities, Mpumalanga;
- Social Impact Assessment: Camden I Wind Energy Facility, Mpumalanga Province;
- Camden I Wind & Solar Energy, Green Hydrogen & Ammonia Manufacturing Facility, Mpumalanga: Transport Impact Assessment;
- Proposed Construction of the Camden I Wind Energy Facility near Ermelo, Mpumalanga Province: Visual Impact Assessment Report – EIA Phase; and
- EA (once issued by DFFE).

2 GOVERNANCE FRAMEWORK

2.1 NATIONAL LEGAL AND REGULATORY FRAMEWORK

The South African Regulatory Framework establishes well-defined requirements and standards for environmental and social management of industrial and civil infrastructure developments. Different authorities at both national and regional levels carry out environmental protection functions. The national environmental legislation applicable to the proposed project include, but not limited to, the following:

2.1.1 THE CONSTITUTION OF SOUTH AFRICA (NO. 108 OF 1996)

Since 1994 South African legislation, including environmental legislation has undergone a large transformation and various laws and policies were promulgated with a strong emphasis on environmental concerns and the need for sustainable development. The Constitution of South Africa (No. 108 of 1996) (The Constitution) provides environmental rights (contained in the Bill of Rights, Chapter 2, Section 24) and includes implications for environmental management. Environmental rights are guaranteed in Section 24 of the Constitution, which states that:

"Everyone has the right –

- *To an environment that is not harmful to their health or well-being and*
- *To have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that:*
  (1) Prevent pollution and ecological degradation;
  (2) Promote conservation and
  (3) Secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development."

The Constitution cannot manage environmental resources as a stand-alone piece of legislation hence additional legislation has been promulgated in order to manage the various spheres of both the social and natural environment. Each promulgated Act and associated Regulations are designed to focus on various industries or components of the environment to ensure that the objectives of the Constitution are effectively implemented and upheld on an on-going basis throughout the country. In terms of Section 7, a positive obligation is placed on the State to give effect to the environmental rights.

The environmental management objectives of this EMPr is to protect the ecologically sensitive areas associated with the site and to support the sustainable use of natural resources, whilst promoting justifiable socio-economic development in the Gert Sibande District Municipality.

2.1.2 NATIONAL ENVIRONMENTAL MANAGEMENT ACT (NO. 107 OF 1998)

The NEMA provides the environmental legislative framework for South Africa and requires that activities be investigated that may have a potential impact on the environment, socio-economic conditions, and cultural heritage. The results of such investigation must be reported to the relevant authority. Procedures for the investigation and communication of the potential impact of activities are contained in Section 24(7) of the Act.

The proposed development will require the consideration and implementation of environmental management practices in all stages of the project. An application for EA for the proposed project is submitted in terms of GNR 982 of the EIA Regulations promulgated under NEMA. The EIA Regulations, as amended, contain three listing notices (GNR 983, 984 and 985) which identify activities that are subject to either a BA or Scoping and Environmental Impact Assessment (S&EIA) in order to obtain an EA.

WSP undertook a legal review of the listed activities according to the proposed project description to conclude that the activities listed in in this section are considered applicable to the development: A S&EIR process must be followed. An EA is required and will be applied for with the DFFE.

This EMPr has been prepared as part of the requirements of the NEMA and the 2014 EIA Regulations and is being submitted to the DFFE as part of the Application for EA for the proposed construction of the Camden I WEF, located south of Ermelo (near Camden) in Mpumalanga.

2.1.3 NATIONAL ENVIRONMENTAL MANAGEMENT WASTE ACT (NO. 59 OF 2008)

The National Environmental Management: Waste Act, 2008 (No. 59 of 2008) (NEM:WA) is subsidiary and supporting legislation to the NEMA. The Act is a framework legislation that provides the basis for the regulation of waste management. The Act also contains policy elements and gives a mandate for further regulations to be promulgated.

On 29 November 2013 GNR 921 was promulgated (repealing GNR 718) which contains a list of waste management activities that if triggered require a Waste Management License (WML) and in turn a Basic Assessment (Category A activities) or Scoping and EIA (Category B activities) process to be undertaken in terms of the NEMA EIA Regulations. Category C activities are required to comply with the Norms and Standards for Storage of Waste 2013 (GN. 926) and do not require authorisation. There are no activities associated with the Camden I WEF that will trigger waste management activities in terms of GN 921.

Waste handling, storage and disposal during the construction and operational phases of the project must be undertaken in accordance with the requirements of this Act and the Best Practicable Environmental Options which have been incorporated into this site specific EMPr.

2.1.4 NATIONAL WATER ACT (NO.36 OF 1998)

The National Water Act, 1998 (Act No. 36 of 1998) (NWA) provides the framework to protect water resources against over exploitation and to ensure that there is water for social and economic development, human needs and to meet the needs of the aquatic environment. The Act defines water source to include watercourses, surface water, estuary or aquifer. A watercourse is defined in the Act as a river or spring, a natural channel in which water flows regularly or intermittently, a wetland, lake or dam into which or from which water flows, and any collection of water that the Minister may declare a watercourse.

Section 21 of the Act outlines a number of categories that require a water user to apply for a Water Use License (WUL) and Section 22 requires water users to apply for a General Authorisation (GA) with the Department of Water and Sanitation (DWS) if they are under certain thresholds or meet certain criteria. The list of water uses applicable to the proposed Project include:

- 21(a) Taking water from a water resource (only applicable should borehole water be utilised);
- 21(c) Impeding or diverting the flow of water in a watercourse;
- 21(i) Altering the bed, banks, course or characteristics of a watercourse;

The DWS will make the final decision on water uses that are applicable to the project through a pre-application meeting after which a Water Use Authorisation Application (WUA) as determined by the risk assessment will be undertaken in compliance with procedural regulations published by the DWS within General Notice 267 (GN267). The applicable water uses will also be confirmed at this stage, in consultation with the DWS. These regulations specify required information per water use and the reporting structure of required supporting technical information.

2.1.5 NATIONAL ENVIRONMENTAL MANAGEMENT BIODIVERSITY ACT (NO. 10 OF 2004)

The National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004) (NEMBA) was promulgated in June 2004 within the framework of NEMA to provide for the management and conservation of national biodiversity. The NEMBA's primary aims are for the protection of species and ecosystems that warrant national protection, the sustainable use of indigenous biological resources, the fair and equitable sharing of benefits arising from bioprospecting involving indigenous biological resources. In addition, the NEMBA provides for the establishment and functions of a South African National Biodiversity Institute (SANBI). SANBI was

established by the NEMBA with the primary purpose of reporting on the status of the country's biodiversity and conservation status of all listed threatened or protected species and ecosystems.

The biodiversity assessment identifies CBAs which represent biodiversity priority areas which should be maintained in a natural to near natural state. The CBA maps indicate the most efficient selection and classification of land portions requiring safeguarding in order to meet national biodiversity objectives.

Based on the preliminary desktop assessment and the terrestrial biodiversity report, a sizeable area in the south-eastern part of the site is mapped as a "CBA: Irreplaceable" area, and a sizeable area in the northern part of the site is mapped as a "CBA: Optimal" area. There is also a large wetland area adjacent and to the north of the Vaal River (near the southern part of the site) that is mapped as an Ecological Support Area (ESA).

According to the description for the MBSP Terrestrial Assessment categories, CBAs are areas that are required to meet biodiversity targets (for biodiversity pattern and ecological process features). The management approach is that they should remain in a natural state. CBAs are areas of high biodiversity value which are usually at risk of being lost and usually identified as important in meeting biodiversity targets, except for Critically Endangered Ecosystems or Critical Linkages. CBAs in the Province can be divided into two sub-categories:

- Irreplaceable (parts of the site are within this sub-category), and
- Optimal (northern parts of the site are within this sub-category).

Supplementary baseline terrestrial ecology studies were undertaken during the EIA phase to inform the assessment of impacts and include flora surveys of the project footprint to determine the presence of flora species of concern (SoC), and bird surveys of the area to define the potential risks to bird SoC.

The Conservation of Agricultural Resources Act (No. 43 of 1983) (CARA) Regulations with regards to alien and invasive species have been superseded by the National Environmental Management: Biodiversity Act, 2004 (Act no. 10 of 2004) – Alien and Invasive Species (AIS) Regulations which became law on 1 October 2014.

Specific management measures for the control of alien and invasive plants have been included in this EMPr.

2.1.6 NATIONAL ENVIRONMENTAL MANAGEMENT PROTECTED AREAS ACT (NO.57 OF 2003)

The purpose of the National Environmental Management Protected Areas Act (No. 57 of 2003) (NEMPAA) is to, inter alia, provide for the protection and conservation of ecologically viable areas representative of South Africa's biological diversity and its natural landscapes and seascapes. To this end, it provides for the declaration and management of various types of protected areas.

Section 50(5) of NEMPAA states that "*no development, construction or farming may be permitted in a nature reserve or world heritage site without the prior written approval of the management authority*."

The Facility is located in the Mpumalanga Province outside urban areas, partly within a National Protected Area Expansion Strategy Focus area and within 5km of Portion 1 & 2 of Farm No. 322 (Welgelegen), which are declared as Private Nature Reserve (Langcarel Private Nature Reserve) under the Game Ordinance, 1949 (No. 23 of 1949) and the Native Flora Protection Ordinance, 1940 (No. 9 of 1940). This reserve is noted as having farming activity present, and is currently managed and actively utilised for agriculture. The land owner further was not aware of any protected area on these properties and intends to utilise any suitable legal avenues available to continue operation of the properties for the current land use of agriculture, in conjunction with the planned Renewable Energy land use subject to this application.

The protected area and has undergone similar levels of degradation as surrounding areas due primarily to overgrazing, but also partially due to alien invasive plants. In addition, no conservation management activities were evident on site during the ecological field assessment. This pattern of over-utilization affects all grasslands on site, resulting in them being in moderate to poor condition. The habitat has been used for livestock production and is impacted by this land-use. The biodiversity specialist concluded that, on the basis of the current land use and levels of modification, the private nature reserve does not align with the objective and purpose of the protected area status.

It is important to also note that the Project Proponent is engaging with the MTPA and the Management Authority (Landowner/s) to investigate the best way forward regarding the Langcarel Nature Reserve. The MTPA has undertaken a site visit on 01 June 2022. The MTPA has submitted a letter to the Department (letter dated, 20 June

2022) of the intent to issue a notice to withdraw the declaration of the Langcarel Private Nature Reserve in terms of the Mpumalanga Nature Conservation Act (Act No. 10 of 1998). A separate process is therefore underway to have it (or part thereof) withdrawn or de-proclaimed, as part of ongoing province-wide nature reserve verification efforts by the provincial authorities. Subject to the successful conclusion of this process, a Section 50 approval is not required for this project. Available information on the Nature Reserve (i.e., de-proclamation or removal of Nature Reserve status) and/or relevant approval (i.e., Section 50 Approval where applicable) will be submitted to the Department once available, possibly together with the FEIR, to date Section 50 Approval has been received for the affected land portions.

According to the National Parks Area Expansion Strategy (NPAES), there are no areas within the study area that have been identified as priority areas for inclusion in future protected areas. The study area is therefore outside the NPAES focus area. On the basis of the Screening Tool output, which identifies "Protected Areas Expansion Strategy" as a factor within the study area, the terrestrial Biodiversity Specialist has assumed that natural areas within the study area fall within this category (Low Priority - Mpumalanga Protected Area Expansion Strategy).

2.1.7 NATIONAL HERITAGE RESOURCES ACT (NO. 25 OF 1999)

The National Heritage Resource Act (Act No. 25 of 1999) (NHRA) serves to protect national and provincial heritage resources across South Africa. The NHRA provides for the protection of all archaeological and palaeontological sites, the conservation and care of cemeteries and graves by SAHRA and lists activities which require any person who intends to undertake to notify the responsible heritage resources agency and furnish details regarding the location, nature, and extent of the proposed development.

Part 2 of the NHRA details specific activities that require a Heritage Impact Assessment (HIA) that will need to be approved by SAHRA. Parts of Section 35, 36 and 38 apply to the proposed project, principally:

- Section 35 (4) - No person may, without a permit issued by the responsible heritage resources authority-
- destroy, damage, excavate, alter, deface or otherwise disturb any archaeological or palaeontological site or any meteorite;
- destroy, damage, excavate, remove from its original position, collect or own any archaeological or palaeontological material or object or any meteorite.
- Section 38 (1) Subject to the provisions of subsections (7), (8) and (9), any person who intends to undertake a development categorised as-
- any development or other activity which will change the character of a site— (i) exceeding 5 000 m^2 in extent, must at the very earliest stages of initiating such a development, notify the responsible heritage resources authority and furnish it with details regarding the location, nature and extent of the proposed development.

In terms of Section 38(8), approval from the heritage authority is not required if an evaluation of the impact of such development on heritage resources is required in terms of any other legislation (such as NEMA), provided that the consenting authority ensures that the evaluation of impacts fulfils the requirements of the relevant heritage resources authority in terms of Section 38(3) and any comments and recommendations of the relevant resources authority with regard to such development have been taken into account prior to the granting of the consent. However, should heritage resources of significance be affected by the proposed Camden II WEF, a permit is required to be obtained prior to disturbing or destroying such resources as per the requirements of Section 48 of the NHRA, and the SAHRA Permit Regulations (GN R668).

A Heritage Impact Assessment Report (**Appendix H-7 of the EIR**) has been carried out by a suitably qualified specialist, revealing:

- No archaeological sites of significance were noted, and finds were limited to ruins, ephemeral stone packed features of farm labourer dwellings and kraals, as well as a cemetery in the Project area. Based on the current layout, the following could be impacted on by the proposed Camden 1 WEF:
  - degraded farmhouse with multiple related structures scattered around the area. (located ~ 18 meters west of a proposed road); and
  - small degraded square packed stone feature (located ~ 7 meters west of a proposed road).
- No direct impact is expected on the recorded burial sites in the Project area.

According to the SAHRA Paleontological sensitivity map the study area is of zero to very high paleontological significance and an independent study was conducted for this aspect. The Palaeontological Impact Assessment

(**Appendix H-8**) concluded that the impact on palaeontological resources is low and the project should be authorised from a paleontological point of view.

A Fossil Chance Find Protocol has been added to this EMPr. The proposed project was loaded onto the SAHRIS portal (CaseID: 18077) for comment by SAHRA and/or Mpumalanga Heritage Resources Authority. Comments received from SAHRA are included in the Stakeholder Engagement (SER) (**Appendix D of EIR**).

SAHRA grants the development an exemption from undertaking a Palaeontological Impact Assessment as the development area is located in a region mapped on the palaeomap as being of negligible palaeontological significance. The palaeomap policy does not require an assessment of impacts for zones of negligible palaeontological significance

2.1.8 MINERAL AND PETROLEUM RESOURCES DEVELOPMENT ACT (NO.28 OF 2002)

The aim of the Mineral and Petroleum Resources Development Act (No. 28 of 2002) (MPRDA) is to make provision for equitable access to and sustainable development of the nation's mineral and petroleum resources. Section 53(1) of the MPRDA provides that any person who intends to use the surface of any land in any way that may be contrary to any object of the MPRDA, or which is likely to impede any such object, must apply to the Minister of Mineral Resources (the Minister) for approval. Section 53 of the MPRDA provides a mechanism for ensuring that, inter alia, the mining of mineral resources is not detrimentally affected through the use of the surface of land, and which may, for example, result in the sterilisation of a mineral resource. A Section 53 approval will be required due to the fact that the project is located on various mining right areas. The Amendment Regulations (GNR 420 of 27 March 2020) introduced a template for section 53 applications (Form Z) and the specific information that applicants will need to provide as part of a section 53 application.

A Section 53 application has been submitted by the Applicant and is underway pending Authority review. Mineral Right Holders associated with the project area, that have been identified to date, are included on the project stakeholder database. Any comments received from these Stakeholders during the S&EIR process will be captured and responded to within the Comments and Responses Report (CRR) included in the SER (**Appendix D**) of the EIR.

2.1.9 NATIONAL ENVIRONMENTAL MANAGEMENT: AIR QUALITY ACT (ACT 39 OF 2004) (NEM: AQA)

Until 2004, South Africa's approach to air pollution control was driven by the Atmospheric Pollution Prevention Act 45 of 1965 (APPA) which was repealed with the promulgation of NEM:AQA . NEM:AQA represents a shift in South Africa's approach to air quality management, from source-based control to integrated effects-based management. The objectives of NEM:AQA are to:

- Protect the environment by providing reasonable measures for:
- The protection and enhancement of air quality;
- The prevention of air pollution and ecological degradation;
- Securing ecologically sustainable development while promoting justifiable economic and social development; and
- Give effect to everyone's right "to an environment that is not harmful to their health and well-being"

Significant functions detailed in NEM:AQA include:

- The National Framework for Air Quality Management ;
- Institutional planning matters, including:
- The establishment of a National Air Quality Advisory Committee;
- The appointment of Air Quality Officers (AQOs) at each level of government; and
- The development, implementation and reporting of Air Quality Management Plans (AQMP) at national, provincial and municipal levels;
- Air quality management measures including:

- The declaration of Priority Areas where ambient air quality standards are being, or may be, exceeded;
- The listing of activities that result in atmospheric emissions and which have the potential to impact negatively on the environment and the licensing thereof through an Atmospheric Emissions License (AEL);
- The declaration of Controlled Emitters;
- The declaration of Controlled Fuels;
- Procedures to enforce Pollution Prevention Plans or Atmospheric Impact Reporting for the control and inventory of atmospheric pollutants of concern; and
- Requirements for addressing dust and offensive odours

The proposed project may have a temporary impact on the local air quality, associated with land clearing, drilling, stockpiling activities etc. Increased dust and emissions from construction activities can be a nuisance to the nearby receptors and site workers, as such appropriate control measures recommended in this EMPr will need to be applied to reduce the impact on neighbouring sensitive receptors.

2.1.10 NOISE CONTROL REGULATIONS IN TERMS OF THE ENVIRONMENTAL CONSERVATION,1989 (ACT 73 OF 1989)

In South Africa, environmental noise control has been in place for three decades, beginning in the 1980s with codes of practice issued by the South African National Standards (formerly the South African Bureau of Standards, SABS) to address noise pollution in various sectors of the country. Under the previous generation of environmental legislation, specifically the Environmental Conservation Act 73 of 1989 (ECA), provisions were made to control noise from a National level in the form of the Noise Control Regulations (GNR 154 of January 1992). In later years, the ECA was replaced by the National Environmental Management Act 107 of 1998 (NEMA) as amended.

The National Environmental Management: Air Quality Act 39 of 2004 (NEMAQA) was published in line with NEMA and contains noise control provisions under Section 34:

- *(1) The minister may prescribe essential national standards –*
- *(a) for the control of noise, either in general or by specific machinery or activities or in specified places or areas; or*
- *(b) for determining –*
- *(i) a definition of noise; and*
- *(ii) the maximum levels of noise.*
- *(2) When controlling noise, the provincial and local spheres of government are bound by any prescribed national standards.*

Under NEMAQA, the Noise Control Regulations were updated and are to be applied to all provinces in South Africa. The Noise Control Regulations give all the responsibilities of enforcement to the Local Provincial Authority, where location specific by-laws can be created and applied to the locations with approval of Provincial Government. Where province-specific regulations have not been promulgated, acoustic impact assessments must follow the Noise Control Regulations.

Furthermore, NEMAQA prescribes that the Minister must publish maximum allowable noise levels for different districts and national noise standards. These have not yet been accomplished and as a result all monitoring and assessments are done in accordance with the South African National Standards (SANS) 10103:2008 and 10328:2008.

2.1.11 CIVIL AVIATION ACT (NO. 13 OF 2009)

Civil aviation in South Africa is governed by the Civil Aviation Act, 2009 (No. 13 of 2009). This Act provides for the establishment of a stand-alone authority mandated with controlling, promoting, regulating, supporting, developing, enforcing and continuously improving levels of safety and security throughout the civil aviation industry. This mandate is fulfilled by the South African Civil Aviation Authority (SA CAA) as an agency of the Department of Transport (DoT). The SA CAA achieves the objectives set out in the Act by complying with the Standards and Recommended Practices (SARPs) of the International Civil Aviation Organisation (ICAO), while considering the local context when issuing the South African Civil Aviation Regulations (SA CARs). All proposed

developments or activities in South Africa that potentially could affect civil aviation must thus be assessed by SACAA in terms of the SA CARs and South African Civil Aviation Technical Standards (SA CATS) in order to ensure aviation safety.

As of the 1st of May 2021, Air Traffic and Navigation Services (ATNS) has been appointed as the new Obstacle application Service Provider for Windfarms and later Solar Plants. Their responsibility would pertain to the assessments, maintenance, and all other related matters in respect to Windfarms and in due time Power Plant assessments.

The DEA Screening Tool Report identified Civil Aviation as having low sensitivity for the proposed Camden I WEF, and as being located between 8 and 15km of other civil aviation arerodrome.

An Application for the Approval of Obstacles has been submitted to ATNS and the required permits will be obtained prior to the development of the project. SACAA was included on the project stakeholder database and informed of the proposed Project. Comments received from this stakeholder to date have been captured and responded to within the CRR included in the SER (**Appendix D**) of the EIR.

2.1.12 CONSERVATION OF AGRICULTURAL RESOURCES ACT (NO.43 OF 1983)

The Conservation of Agricultural Resources Act (Act 43 of 1983) (CARA) provides for the implementation of control measures for soil conservation works as well as alien and invasive plant species in and outside of urban areas.

In terms of the amendments to the regulations under the CARA, landowners are legally responsible for the control of alien species on their properties. Various Acts administered by the DFFE and the DWS, as well as other laws (including local by-laws), spell out the fines, terms of imprisonment and other penalties for contravening the law. Although no fines have yet been placed against landowners who do not remove invasive species, the authorities may clear their land of invasive alien plants and other alien species entirely at the landowners' cost and risk.

The CARA Regulations with regards to alien and invasive species have been superseded by NEMBA Alien and Invasive Species (AIS) Regulations which became law on 1 October 2014.

According to the Agriculture Specialist rehabilitation after disturbance to agricultural land is managed by the CARA. A consent in terms of CARA is required for the cultivation of virgin land. Cultivation is defined in CARA as "any act by means of which the topsoil is disturbed mechanically". The purpose of this consent for the cultivation of virgin land is to ensure that only land that is suitable as arable land is cultivated. Therefore, despite the above definition of cultivation, disturbance to the topsoil that results from the construction of a renewable energy facility and its associated infrastructure does not constitute cultivation as it is understood in CARA. This has been corroborated by Anneliza Collett (Acting Scientific Manager: Natural Resources Inventories and Assessments in the Directorate: Land and Soil Management of the Department of Agriculture, Land Reform and Rural Development (DALRRD)). As confirmed by the Agriculture Specialist, the construction and operation of the facility will therefore not require consent from the Department of Agriculture, Land Reform and Rural.

2.1.13 OCCUPATIONAL HEALTH AND SAFETY ACT (NO. 85 OF 1993)

The Occupational Health and Safety Act (No. 85 of 1993) (OHSA) and the relevant regulations under the Act are applicable to the proposed project. This includes the Construction Regulations promulgated in 2014 under Section 43 of the Act. Adherence to South Africa's OHSA and its relevant Regulations, is essential. It is noted that adherence to the South African OHSA will also ensure adherence to the relevant occupational health and safety provisions contained within the International Finance Corporation (IFC) general Environmental, Health and Safety (EHS) Guidelines 2007, given that the South African standards either meet or exceed the relevant IFC guidelines.

Measures to promote safety awareness and ensure safety of all onsite personnel have been recommended in this EMPr.

2.2 IFC PERFORMANCE STANDARDS

The objectives and applicability of the eight International Finance Corporation (IFC) Performance Standards (PS) are detailed in **Table 2-1**.

Table 2-1: IFC Performance Standards Applicability to the Project

REFERENCE	REQUIREMENTS		PROJECT SPECIFIC APPLICABILITY
Performance Standard 1: Assessment and Management of Environmental and Social Risks and Impacts			
Overview	Performance Standard 1 underscores the importance of managing environmental and social performance throughout the life of a project. An effective Environmental and Social Management System (ESMS) is a dynamic and continuous process initiated and supported by management, and involves engagement between the client, its workers, local communities directly affected by the project (the Affected Communities) and, where appropriate, other stakeholders.		
Objectives	— To identify and evaluate environmental and social risks and impacts of the project. — To adopt a mitigation hierarchy to anticipate and avoid, or where avoidance is not possible, minimize, and, where residual impacts remain, compensate/offset for risks and impacts to workers, Affected Communities, and the environment. — To promote improved environmental and social performance of clients through the effective use of management systems. — To ensure that grievances from Affected Communities and external communications from other stakeholders are responded to and managed appropriately. — To promote and provide means for adequate engagement with Affected Communities throughout the project cycle on issues that could potentially affect them and to ensure that relevant environmental and social information is disclosed and disseminated.		
Aspects	1.1	Policy	The IFC Standards state under PS 1 (Guidance Note 23) that "*the breadth, depth and type of analysis included in an ESIA must be proportionate to the nature and scale of the proposed project's potential impacts as identified during the course of the assessment process.*" This document forms part of the draft EIR deliverable from the Scoping and EIA process undertaken for the proposed Project. The impact assessment of the EIR comprehensively assesses the key environmental and social impacts and complies with the requirements of the South African EIA Regulations. A formal project specific ESMS will be compiled in the event that the project is developed in the future. Management and monitoring plans outlined in the EMPr will serve as the basis for an ESMS for the proposed Project.
	1.2	Identification of Risks and Impacts	
	1.3	Management Programmes	
	1.4	Organisational Capacity and Competency	
	1.5	Emergency Preparedness and Response	
	1.6	Monitoring and Review	
	1.7	Stakeholder Engagement	
	1.8	External Communication and Grievance Mechanism	
	1.9	Ongoing Reporting to Affected Communities	
Performance Standard 2: Labour and Working Conditions;			
Overview	Performance Standard 2 recognises that the pursuit of economic growth through employment creation and income generation should be accompanied by protection of the fundamental rights of workers.		
Objectives	— To promote the fair treatment, non-discrimination, and equal opportunity of workers. — To establish, maintain, and improve the worker-management relationship. — To promote compliance with national employment and labour laws.		

REFERENCE	REQUIREMENTS		PROJECT SPECIFIC APPLICABILITY
	— To protect workers, including vulnerable categories of workers such as children, migrant workers, workers engaged by third parties, and workers in the client's supply chain. — To promote safe and healthy working conditions, and the health of workers. — To avoid the use of forced labour.		
Aspects	2.1	— Working Conditions and Management of Worker Relationship — Human Resources Policy and Management — Working Conditions and terms of Engagement — Workers organisation — Non- Discrimination and Equal Opportunity — Retrenchment — Grievance Mechanism	The construction activities will require contractors for completion. A safe working environment and fair contractual agreements must be in place. The operational phase will have permanent employees for day-to-day activities as well as contractors who will all need a safe working environment and fair contractual agreements. Whilst PS2 will be applicable to the Project, it is not intended to be addressed in detail at the ESIA stage. Recommendations are provided concerning development of a detailed Human Resources (HR) and Occupational Health and Safety (OHS) system by the developer and its partners as the Project moves towards implementation. In addition, measures to address the Interim Advice for IFC Clients on Supporting Workers in the Context of COVID-19 are referenced. This EMPr incorporates the requirements for compliance with local and international Labour and Working legislation and good practice on the part of the contractors.
	2.2	— Protecting the Workforce — Child Labour — Forced Labour	
	2.3	Occupational health and Safety	
	2.4	Workers Engaged by Third Parties	
	2.5	Supply Chain	
Performance Standard 3: Resource Efficiency and Pollution Prevention			
Overview	Performance Standard 3 recognises that increased economic activity and urbanisation often generate increased levels of pollution to air, water, and land, and consume finite resources in a manner that may threaten people and the environment at the local, regional, and global levels. There is also a growing global consensus that the current and projected atmospheric concentration of greenhouse gases (GHG) threatens the public health and welfare of current and future generations. At the same time, more efficient and effective resource use and pollution prevention and GHG emission avoidance and mitigation technologies and practices have become more accessible and achievable in virtually all parts of the world.		
Objectives	— To avoid or minimise adverse impacts on human health and the environment by avoiding or minimising pollution from project activities. — To promote more sustainable use of resources, including energy and water. — To reduce project related GHG emissions.		
Aspects	3.1	— Policy Resource Efficiency — Greenhouse Gases — Water Consumption	PS3-related impacts, such as the management of construction waste, hazardous substances, and stormwater are assessed in **Section 8** of the EIR. There are no material resource efficiency issues associated with the Project. This EMPr includes general resource efficiency measures (**Section 6**). The project is not GHG emissions intensive and a climate resilience study or a GHG emissions-related assessment is not deemed necessary for a project of this nature. However, the Camden I WEF seeks to facilitate resource efficiency and pollution prevention by contributing to the South African green economy. Dust air pollution in the construction phase has been adequately addressed in this EMPr (**Section 6** (**Air Quality Management**)).
	3.2	— Pollution Prevention — Air Emissions — Stormwater — Waste Management — Hazardous Materials Management	

REFERENCE	REQUIREMENTS		PROJECT SPECIFIC APPLICABILITY
		— Pesticide use and Management	The Project will not result in the release of industrial effluents. Potential pollution associated with sanitary wastewater is low and mitigation measures have been included in this EMPr. Land contamination of the site from historical land use (i.e. low intensity agricultural / grazing) is not considered to be a cause for concern. The waste generation profile of the project is not complex. Waste mitigation and management measures have been included in this EMPr. Hazardous materials are not a key issue; small quantities of construction materials (oil, grease, diesel fuel etc.) are the only wastes expected to be associated with the project. This EMPr identifies these anticipated hazardous materials and recommends relevant mitigation and management measures (**Section 6**).
Performance Standard 4: Community Health, Safety, and Security			
Overview	Performance Standard 4 recognizes that project activities, equipment, and infrastructure can increase community exposure to risks and impacts.		
Objectives	— To anticipate and avoid adverse impacts on the health and safety of the Affected Community during the project life from both routine and non-routine circumstances. — To ensure that the safeguarding of personnel and property is carried out in accordance with relevant human rights principles and in a manner that avoids or minimizes risks to the Affected Communities.		
Aspects	4.1	— Community Health and Safety — Infrastructure and Equipment Design and Safety — Hazardous Materials Management and Safety — Ecosystem Services — Community Exposure to Disease — Emergency Preparedness and Response	The requirements included in PS 4 have been addressed in the S&EIA process and the development of this EMPr. During the construction phase there will be an increase in vehicular traffic along public roads, largely due to the need for importation of construction material. Pedestrian and road safety risks have been qualitatively evaluated in the S&EIA process and the clients' standard safety and security measures, as well as potential additional measures recommended by WSP, is detailed in this EMPr (**Section 6** and **Section 7.9**).
	4.2	Security Personnel	
Performance Standard 5: Land Acquisition and Involuntary Resettlement			
Overview	Performance Standard 5 recognises that project-related land acquisition and restrictions on land use can have adverse impacts on communities and persons that use this land. Involuntary resettlement refers both to physical displacement (relocation or loss of shelter) and to economic displacement (loss of assets or access to assets that leads to loss of income sources or other means of livelihood) as a result of project-related land acquisition and/or restrictions on land use.		
Objectives	— To avoid, and when avoidance is not possible, minimise displacement by exploring alternative project designs. — To avoid forced eviction. — To anticipate and avoid, or where avoidance is not possible, minimise adverse social and economic impacts from land acquisition or restrictions on land use by (i) providing compensation for loss of assets at replacement cost and (ii) ensuring that resettlement activities are implemented with appropriate disclosure of information, consultation, and the informed participation of those affected. — To improve, or restore, the livelihoods and standards of living of displaced persons.		

REFERENCE	REQUIREMENTS		PROJECT SPECIFIC APPLICABILITY
	— To improve living conditions among physically displaced persons through the provision of adequate housing with security of tenure at resettlement sites.		
Aspects	5.1	— Displacement — Physical Displacement — Economic Displacement — Private Sector Responsibilities under Government Managed Resettlement	PS5 is not applicable to the proposed Camden I WEF as no physical or economic displacement or livelihood restoration will be required. The proposed Camden I WEF is located on privately owned land that is utilised for agriculture by the landowners. The significance of all potential agricultural impacts is kept low by the very small proportion of the land that is impacted. The Camden I WEF, including all its associated infrastructure and roads, will only excludes 0.8% of the total farmland from potential agricultural production. All agricultural activities are able to continue unaffectedly on all parts of the farmland other than this small agricultural footprint and the actual loss of production potential is therefore insignificant.
Performance Standard 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources			
Overview	Performance Standard 6 recognizes that protecting and conserving biodiversity, maintaining ecosystem services, and sustainably managing living natural resources are fundamental to sustainable development.		
Objectives	— To protect and conserve biodiversity. — To maintain the benefits from ecosystem services. — To promote the sustainable management of living natural resources through the adoption of practices that integrate conservation needs and development priorities.		
Aspects	6.1	Protection and Conservation of Biodiversity	A part of the Project Area falls within CBAs (Irreplaceable and Optimal) and a large wetland area adjacent and to the north of the Olifants River (near the southern part of the site) is mapped as an ESA. A Biodiversity Impact Assessment as well as an Avifaunal Impact Assessment and Freshwater Ecology Impact Assessment have been conducted, **Appendix H-4** and **H-2** of the EIR respectively. These specialist assessments comprise of a combination of literature review, in-field surveys and sensitivity mapping, as well as the assessment of impacts on biodiversity associated with the proposed project. This substantively complies with the PS 6 general requirements for scoping and baseline assessment for determination of biodiversity and ecosystem services issues, as well as the risks and impacts identification process requirements. The determination of habitat sensitivity was undertaken within the legal and best practice reference framework for South Africa. Specific mitigation and management measures for alien invasive species control are included in this EMPr (**Section 6** (**Biodiversity Management**) and **Section 7.2**.
Performance Standard 7: Indigenous People			
Overview	Performance Standard 7 recognizes that Indigenous Peoples, as social groups with identities that are distinct from mainstream groups in national societies, are often among the most marginalized and vulnerable segments of the population. In many cases, their economic, social, and legal status limits their capacity to defend their rights to, and interests in, lands and natural and cultural resources, and may restrict their ability to participate in and benefit from development. Indigenous Peoples are particularly vulnerable if their lands and resources are transformed, encroached upon, or significantly degraded.		
Objectives	— To ensure that the development process fosters full respect for the human rights, dignity, aspirations, culture, and natural resource-based livelihoods of Indigenous Peoples.		

REFERENCE	REQUIREMENTS		PROJECT SPECIFIC APPLICABILITY
	— To anticipate and avoid adverse impacts of projects on communities of Indigenous Peoples, or when avoidance is not possible, to minimize and/or compensate for such impacts. — To promote sustainable development benefits and opportunities for Indigenous Peoples in a culturally appropriate manner. — To establish and maintain an ongoing relationship based on Informed Consultation and Participation (ICP) with the Indigenous Peoples affected by a project throughout the project's life-cycle. — To ensure the Free, Prior, and Informed Consent (FPIC) of the Affected Communities of Indigenous Peoples when the circumstances described in this Performance Standard are present. — To respect and preserve the culture, knowledge, and practices of Indigenous Peoples.		
Aspects	7.1	General — Avoidance of Adverse Impacts — Participation and Consent	As per the international instruments under the United Nations (UN) Human Rights Conventions, no indigenous peoples are present within the study area. The Project does not involve displacement. PS7 will not be triggered.
	7.2	Circumstances Requiring Free, Prior, and Informed Consent — Impacts on Lands and Natural Resources Subject to Traditional Ownership or Under Customary Use — Critical Cultural Heritage — Relocation of Indigenous Peoples from Lands and Natural Resources Subject to Traditional Ownership or Under Customary Use	
	7.3	Mitigation and Development Benefits	
	7.4	Private Sector Responsibilities Where Government is Responsible for Managing Indigenous Peoples Issues	
Performance Standard 8: Cultural Heritage			
Overview	Performance Standard 8 recognizes the importance of cultural heritage for current and future generations.		
Objectives	— To protect cultural heritage from the adverse impacts of project activities and support its preservation. — To promote the equitable sharing of benefits from the use of cultural heritage.		
Aspects	8.1	Protection of Cultural Heritage in Project Design and Execution	A Heritage Impact Assessment Report (**Appendix H-7 of the EIR**) has been carried out by a suitably qualified specialist, revealing that no archaeological sites of significance were noted, and finds were limited to several ruins and graves recorded in the Project area. Based on the current layout, none of the recorded sites will be directly impacted on. A Chance Find Procedure has been included in this EMPr.

2.3 OTHER GUIDELINES AND BEST PRACTICE RECOMMENDATIONS

2.3.1 WORLD BANK GROUP ENVIRONMENTAL HEALTH AND SAFETY GUIDELINES

EHS GENERAL GUIDELINES

The Environmental, Health, and Safety (EHS) Guidelines are technical reference documents with general and industry-specific examples of GIIP. They contain the performance levels and measures that are generally considered to be achievable in new facilities by existing technology at reasonable costs.

The EHS General Guidelines contain information on cross-cutting environmental, health and safety issues potentially applicable to all industry sectors, used together with the relevant industry sector guideline(s), to guide the development of management and monitoring strategies for various project-related impacts.

EHS GUIDELINES FOR ELECTRIC POWER TRANSMISSION AND DISTRIBUTION

The EHS Guidelines for Electric Power Transmission and Distribution include information relevant to power transmission between a generation facility and a substation located within an electricity grid, in addition to power distribution from a substation to consumers located in residential, commercial, and industrial areas.

The Guidelines includes industry-specific impacts and management, provides a summary of EHS issues associated with electric power transmission and distribution that occur during the construction and operation phases of a facility, along with recommendations for their management. Additionally, it includes performance indicators and monitoring related to the environment an occupational health and safety.

These Guidelines have been considered in the impact assessment and formulation of mitigation measures in this EMPr.

2.3.1 GENERIC EMPR RELEVANT TO AN APPLICATION FOR SUBSTATION AND OVERHEAD ELECTRICITY TRANSMISSION AND DISTRIBUTION INFRASTRUCTURE

NEMA requires that an EMPr be submitted where an EIA has been identified as the environmental instrument to be utilised as the basis for a decision on an application for environmental authorisation. The content of an EMPr must either contain the information set out in Appendix 4 of the EIA Regulations, 2014, as amended, or must be a generic EMPr relevant to an application as identified and gazetted by the Minister in a government notice. Once the Minister has identified, through a government notice, that a generic EMPr is relevant to an application for EA, that generic EMPr must be applied by all parties involved in the EA process, including, but not limited to, the applicant and the CA.

GN 435 of 22 March 2019 identified a generic EMPr relevant to applications for substations and overhead electricity transmission and distribution infrastructure which require authorisation in terms of Section 42(2) of NEMA. Applications for overhead electricity transmission and distribution infrastructure and applications for the development or expansion of substation infrastructure for the transmission and distribution of electricity that trigger Activity 11 or 47 of Listing Notice 1 or Activity 9 of Listing Notice 2 and any other listed or specified activities must use the generic EMPrs.

The objective of the generic EMPr is to prescribe and pre-approve generally accepted impact management outcomes and impact management actions, which can commonly and repeatedly be used for the avoidance, management and mitigation of impacts and risks associated with the development or expansion of overhead electricity transmission and distribution infrastructure and the development or expansion of substation

infrastructure for the transmission and distribution of electricity. The use of a generic EMPr is intended to reduce the need to prepare and review individual EMPrs for applications of a similar nature.[3]

The generic EMPr for substations have been used as a basis for this EMPr. The *Generic Environmental Management Programme (EMPr) for the Development and Expansion of Substation Infrastructure for the Transmission and Distribution of Electricity* is attached as **Appendix D**.

The Generic EMPr relevant to applications for the development or expansion of overhead electricity transmission and distribution infrastructure is not applicable for the Camden I WEF project. A separate Environmental Assessment Process will be undertaken for the Camden I Wind Grind Connection, and a separate EMPr which complies with the Generic EMPr for overhead powerline infrastructure will be compiled.

2.3.2 EQUATOR PRINCIPLES

The Equator Principles (EPs) is a risk management framework, adopted by financial institutions, for determining, assessing, and managing environmental and social risk in projects and is primarily intended to provide a minimum standard for due diligence to support responsible risk decision-making.

The EPs apply globally to all industry sectors and to five financial products 1) Project Finance Advisory Services, 2) Project Finance, 3) Project-Related Corporate Loans, 4) Bridge Loans and 5) Project-Related Refinance and Project-Related Acquisition Finance. The relevant thresholds and criteria for application is described in detail in the Scope section of the EP. Currently 125 Equator Principles Financial Institutions (EPFIs) in 37 countries have officially adopted the EPs, covering the majority of international project finance debt within developed and emerging markets. EPFIs commit to implementing the EPs in their internal environmental and social policies, procedures and standards for financing projects and will not provide Project Finance or Project-Related Corporate Loans to projects where the client will not, or is unable to, comply with the EPs.

While the EPs are not intended to be applied retroactively, EPFIs apply them to the expansion or upgrade of an existing project where changes in scale or scope may create significant environmental and social risks and impacts, or significantly change the nature or degree of an existing impact. The EPs have greatly increased the attention and focus on social/community standards and responsibility, including robust standards for indigenous peoples, labour standards, and consultation with locally affected communities within the Project Finance market.

The EPs have also helped spur the development of other responsible environmental and social management practices in the financial sector and banking industry and have supported member banks in developing their own Environmental and Social Risk Management Systems.

The requirements and applicability of the EPs are outlined in **Table 2-2**.

It should be noted that Principles 8 and 10 relate to a borrower's code of conduct and are therefore not considered relevant to the S&EIA process and have not been included in this discussion.

Table 2-2: Requirements and Applicability of the Equator Principles

REQUIREMENT	PROJECT SPECIFIC APPLICABILITY
Principle 1: Review and Categorisation	

[3] DEA (2019) *Generic Environmental Management Programme (EMPr) for the Development and Expansion of Substation Infrastructure for the Transmission and Distribution of Electricity*

REQUIREMENT		PROJECT SPECIFIC APPLICABILITY
Overview	When a project is proposed for financing, the EPFI will, as part of its internal social and environmental review and due diligence, categorise such project based on the magnitude of its potential impacts and risks in accordance with the environmental and social screening criteria of the IFC. Using categorisation, the EPFI's environmental and social due diligence is commensurate with the nature, scale, and stage of the Project, and with the level of environmental and social risks and impacts. The categories are: – Category A: Projects with potential significant adverse environmental and social risks and/or impacts that are diverse, irreversible or unprecedented; – Category B: Projects with potential limited adverse environmental and social risks and/or impacts that are few in number, generally site-specific, largely reversible and readily addressed through mitigation measures; and – Category C: Projects with minimal or no adverse environmental and social risks and/or impacts.	Based upon the significance and scale of the Project's environmental and social impacts, the proposed project is regarded as a Category B project i.e. a project with potential limited adverse environmental or social risks and/or impacts that are few in number, generally site-specific, largely reversible, and readily addressed through mitigation measures.
Principle 2: Environmental and Social Assessment		
Overview	For all Category A and Category B Projects, the EPFI will require the client to conduct an appropriate Assessment process to address, to the EPFI's satisfaction, the relevant environmental and social risks and scale of impacts of the proposed Project (which may include the illustrative list of issues found in Exhibit II). The Assessment Documentation should propose measures to minimise, mitigate, and where residual impacts remain, to compensate/ offset/ remedy for risks and impacts to Workers, Affected Communities, and the environment, in a manner relevant and appropriate to the nature and scale of the proposed Project. The Assessment Documentation will be an adequate, accurate and objective evaluation and presentation of the environmental and social risks and impacts, whether prepared by the client, consultants or external experts. For Category A, and as appropriate, Category B Projects, the Assessment Documentation includes an Environmental and Social Impact Assessment (ESIA). One or more specialised studies may also need to be undertaken. For other Category B and potentially C Projects, a limited or focused environmental or social assessment may be appropriate, applying applicable risk management standards relevant to the risks or impacts identified during the categorisation process. The client is expected to include assessments of potential adverse Human Rights impacts and climate change risks as part of the ESIA or other Assessment, with these included in the Assessment Documentation.	This document (EMPr) forms part of the draft EIR from the S&EIA process undertaken for the proposed Project. The assessment (including this EMPr) appropriately and comprehensively assessed the key environmental and social impacts and complies with the requirements of the South African EIA Regulations and this Principle. A formal project specific ESMS will be compiled in the event that the project is developed in the future. Management and monitoring plans outlines in the EMPr will serve as the basis for an ESMS for the proposed Project.
Principle 3: Applicable Environmental and Social Standards		

REQUIREMENT		PROJECT SPECIFIC APPLICABILITY
Overview	The Assessment process should, in the first instance, address compliance with relevant host country laws, regulations and permits that pertain to environmental and social issues. The EPFI's due diligence will include, for all Category A and Category B Projects globally, review and confirmation by the EPFI of how the Project and transaction meet each of the Principles. For Projects located in Non-Designated Countries, the Assessment process evaluates compliance with the then applicable IFC PS and WBG EHS Guidelines. For Projects located in Designated Countries, compliance with relevant host country laws, regulations and permits that pertain to environmental and social issues.	As South Africa has been identified as a non-designated country, the reference framework for environmental and social assessment is based on the IFC PS. In addition, this S&EIA process has been undertaken in accordance with NEMA (the host country's relevant legislation).
Principle 4: Environmental and Social Management System and Equator Principles Action Plan		
Overview	For all Category A and Category B Projects, the EPFI will require the client to develop or maintain an Environmental and Social Management System (ESMS). Further, an Environmental and Social Management Plan (ESMP) will be prepared by the client to address issues raised in the Assessment process and incorporate actions required to comply with the applicable standards. Where the applicable standards are not met to the EPFI's satisfaction, the client and the EPFI will agree on an Equator Principles Action Plan (EPAP). The EPAP is intended to outline gaps and commitments to meet EPFI requirements in line with the applicable standards.	A formal project specific ESMS will be compiled in the event that the project is developed in the future. Management and monitoring plans outlined in the this EMPr will serve as the basis for an ESMS for the proposed Project.
Principle 5: Stakeholder Engagement		

REQUIREMENT		PROJECT SPECIFIC APPLICABILITY
Overview	EPFI will require the client to demonstrate effective Stakeholder Engagement as an ongoing process in a structured and culturally appropriate manner with Affected Communities Workers and, where relevant, Other Stakeholders. For Projects with potentially significant adverse impacts on Affected Communities, the client will conduct an Informed Consultation and Participation process. To accomplish this, the appropriate assessment documentation, or non-technical summaries thereof, will be made available to the public by the borrower for a reasonable minimum period in the relevant local language and in a culturally appropriate manner. The borrower will take account of and document the process and results of the consultation, including any actions agreed resulting from the consultation. Disclosure of environmental or social risks and adverse impacts should occur early in the Assessment process, in any event before the Project construction commences, and on an ongoing basis. All Projects affecting Indigenous Peoples will be subject to a process of Informed Consultation and Participation, and will need to comply with the rights and protections for Indigenous Peoples contained in relevant national law, including those laws implementing host country obligations under international law.	The S&EIA process includes an extensive stakeholder engagement process which complies with the South African EIA Regulations. The process includes consultations with local communities, nearby businesses, and a range of government sector stakeholders (state owned enterprises, national, provincial and local departments). The stakeholder engagement process solicits interest from potentially interested parties through the placement of site notices and newspaper advertisements as well as written and telephonic communication. The stakeholder engagement process is detailed in **Section 4.3 of the EIR.**
Principle 6: Grievance Mechanism		
Overview	For all Category A and, as appropriate, Category B Projects, the EPFI will require the client, as part of the ESMS, to establish effective grievance mechanisms which are designed for use by Affected Communities and Workers, as appropriate, to receive and facilitate resolution of concerns and grievances about the Project's environmental and social performance. The borrower will inform the Affected Communities and Workers about the grievance mechanism in the course of the stakeholder engagement process and ensure that the mechanism addresses concerns promptly and transparently, in a culturally appropriate manner, and is readily accessible, at no cost, and without retribution to the party that originates the issue or concern.	This EMPr includes a *Grievance Mechanism Process for Public Complaints and Issues* (**Section 7.15.1**). This procedure effectively allows for external communications with members of the public to be undertaken in a transparent and structured manner.
Principle 7: Independent Review		
Overview	For all Category A and, as appropriate, Category B Projects, an Independent Environmental and Social Consultant, not directly associated with the client, will carry out an Independent Review of the Assessment Documentation including the ESMPs, the ESMS, and the Stakeholder Engagement process documentation in order to assist the EPFI's due diligence, and assess Equator Principles compliance.	This principle will only become applicable in the event that that the project is developed in the future.
Principle 9: Independent Monitoring and Reporting		

REQUIREMENT		PROJECT SPECIFIC APPLICABILITY
Overview	To assess Project compliance with the Equator Principles after Financial Close and over the life of the loan, the EPFI will require independent monitoring and reporting for all Category A, and as appropriate, Category B projects. Monitoring and reporting should be provided by an Independent Environmental and Social Consultant; alternatively, the EPFI will require that the client retain qualified and experienced external experts to verify its monitoring information, which will be shared with the EPFI in accordance with the frequency required.	This principle will only become applicable in the event that the project is developed in the future.

3 ENVIRONMENTAL MANAGEMENT OBJECTIVES

An EMPr is defined as "an environmental management tool used to ensure that undue or reasonably avoidable adverse impacts of the construction, operation and decommissioning of a project are prevented or mitigated, and that the positive benefits of the projects are enhanced."

This EMPr has been compiled in accordance with Appendix 4 of GNR 982, in compliance with section 24N of NEMA, with the purpose of ensuring that negative impacts are reduced, and positive effects are enhanced through a process of continual improvement, during both the construction and operational phases of Camden I WEF.

To facilitate compliance to the EMPr by appointed contractors and sub-contractors, it is required that all onsite personnel are aware of the requirements of the EMPr as well as the prescribed penalties should a non-conformance be identified during the construction, operation and decommissioning activities.

Further to the above, appointed contractors and sub-contractors will also be required to comply with all relevant legislation and standards.

3.1 EMPR OBJECTIVES

The EMPr has the following objectives:

- Identify mitigation measures and environmental specifications which are required to be implemented for the planning, construction and rehabilitation, operation, and decommissioning phases of the project in order to manage and minimise the extent of potential environmental impacts associated with the facility;
- Ensure that all the phases of the proposed project do not result in undue or reasonably avoidable adverse environmental impacts, and ensure that any potential environmental benefits are enhanced;
- Identify entities responsible for the implementation of the measures and outline functions and responsibilities;
- Create management structures that address the concerns and complaints of interested and affected parties (I&APs) with regards to the proposed project;
- Propose mechanisms and frequency for monitoring compliance, and preventing long-term or permanent environmental degradation; Comply with all applicable laws, regulations, standards and guidelines for the protection of the environment;
- Train onsite personnel with regard to their environmental obligations; and
- Facilitate appropriate and proactive responses to unforeseen events or changes in project implementation that was not considered in the EIA process.

3.2 ENVIRONMENTAL OBJECTIVES AND TARGETS

To facilitate compliance with the EMPr, the Proponent must comply with all relevant legislation and standards and make all personnel aware of the requirements of the EMPr, as well as the prescribed penalties should a non-conformance be identified during the different phases of the proposed Project.

It is recommended that environmental objectives (as outlined in this document) be emphasised to the Proponent as minimum requirements. Objectives include:

- Encourage good management practices through planning and commitment to environmental issues; and
- Provide rational and practical environmental guidelines to:
  - Minimise disturbance of the natural environment;
  - Minimise fugitive emissions;
  - Minimise impact of added traffic into the area;
  - Ensure surface and groundwater resource protection;
  - Prevent or minimise all forms of pollution;

- Protect indigenous flora and fauna;
- Prevent soil erosion;
- Promote sustainable use of resources;
- Adopt the best practical means available to prevent or minimise adverse environmental impacts;
- Comply with all applicable laws, regulations, standards and guidelines for the protection of the environment;
- Promote the reduction, reuse, recycling and recovery of waste;
- Develop waste management practices based on prevention, minimisation, recycling, treatment or disposal of waste;
- Describe all monitoring procedures required to identify impacts on the environment;
- Define how the management of the environment is reported and performance evaluated; and
- Train onsite personnel with regard to their environmental obligations.

4 MANAGEMENT PROCEDURES AND ADMINISTRATIVE REQUIREMENTS

4.1 ORGANISATIONAL STRUCTURE AND RESPONSIBILITIES

Formal responsibilities are necessary to ensure that key management measures/procedures are executed. The Proponent (via the appointed EPC contractor/principal contractor) will be responsible for the overall control of the project site during the pre-construction, construction, operation, decommissioning and rehabilitation phases of the project. The Proponent's responsibilities (via the appointed EPC contractor/principal contractor) will include the following:

- Appointing an independent environmental control officer (ECO) for the duration of the Contract during construction and as specified by the DFFE during operation;
- Being fully familiar with the EIR, EA conditions and the EMPr;
- Applying for an amendment of the EA from the DFFE as and when required in line with the prevailing legislation
- The overall implementation of the EMPr;
- Ensuring compliance, by all parties, and the imposition of penalties for noncompliance;
- Implementing corrective and preventive actions, where required;
- Ensuring that any other necessary permits or licences are obtained and complied with;
- Preventing pollution and actions that will harm or may cause harm to the environment;
- Notifying the DFFE within 30 days that construction activity will commence;
- Notifying the DFFE in writing within 24 hours if any condition in the EA cannot be or is not adhered to; and
- Notifying the DFFE 14 days prior to commencement of the operational phase

A high level outline of the various roles and responsibilities of this project are as defined in **Table 4-1**.

Table 4-1: Roles and Responsibilities

DESIGNATION	ROLES AND RESPONSIBILITY
Proponent / Holder of the EA	— The Proponent (holder of the EA) shall take overall responsibility for the adherence to the EMPr and EA conditions.
Project Manager	— Ensure the Proponent and the relevant contractor/s are aware of all specifications, legal constraints pertaining to the project during construction, specifically with regards to the environment. — Ensure that all stipulations within the EMPr and conditions of the environmental authorisation are communicated and adhered to by the Proponent and its contractor(s). — Monitor the implementation of the EMPr and conditions of the environmental authorisation throughout the project by means of site inspections and meetings. This will be documented as part of the site meeting minutes. — Be fully conversant with the EIR for the project, the conditions of environmental authorisation and all relevant environmental legislation.
Site Manager **(EPC Contractor)**	— Be fully conversant with the EIR, the conditions of environmental authorisation and the EMPr.

DESIGNATION	ROLES AND RESPONSIBILITY
	— Approve method statements. — Provide support to the ECO. — Be fully conversant with all relevant environmental legislation and ensure compliance thereof. — Have overall responsibility for the implementation of the EMPr and conditions of the environmental authorisation — Ensure that audits are conducted to ensure compliance to the EMPr and conditions of the environmental authorisation. — Liaise with the Project Manager or his delegate, the ECO and others on matters concerning the environment — Prevent actions that will harm or may cause harm to the environment, and take steps to prevent pollution and unnecessary degradation onsite. — Confine construction activities to demarcated areas.
Environmental Officer (EO) **(EPC Contractor)**	The EO must be appointed by the Contractor and is responsible for managing the day-to-day onsite implementation of the EMPr, and for the compilation of weekly environmental monitoring reports during construction. During the operational phase environmental monitoring reports may be as specified by the DFFE (such as annually) by the external EO or ECO. In addition, the EO must act as liaison and advisor on all environmental and related issues, seek advice from the ECO when necessary, and ensure that any complaints received from I&APs are duly processed and addressed and that conflicts are resolved in an acceptable manner and timely manner. The EO shall be a full time dedicated member of the Contractor's team and must be approved by Proponent (Project Company). The following qualifications, qualities and experience are recommended for the individual appointed as the EO: — A relevant environmental diploma or degree in natural sciences, as well as a minimum of three years' experience in construction site monitoring, excluding health and safety; — A level-headed and firm person with above-average communication and negotiating skills. The ability to handle and address conflict management situations will be an advantage; and — Relevant experience in environmental site management and EMPr compliance monitoring. The EO's responsibilities include,but not limited to: — Monitoring, on a daily basis, environmental specifications on site and compliance with the conditions of the EA, environmental legislation and EMPr; — Keeping a register of compliance / non-compliance with the environmental specifications; — Identifying and assessing previously unforeseen, actual or potential impacts on the environment; — Ensuring that a brief weekly environmental monitoring report is submitted to the ECO; — Conducting site inspections during the defects liability period, and bringing any environmental concerns to the attention of the ECO and Contractor; — Advising the Contractor on the rectification of any pollution, contamination or damage to the construction site, rights of way and adjacent land; — Attending site meetings (scheduled and ad hoc); — Presenting the environmental awareness training course to all staff, Contractors and Sub contractors, and monitoring the environmental awareness training for all new personnel on-site, as undertaken by the Contractor; — Ensuring that a copy of the EA and the latest version of the EMPr are available on site at all times, and maintaining a records-keeping system of all compliance and environmental documentation;

DESIGNATION	ROLES AND RESPONSIBILITY
	— Ensuring that the Contractor is made aware of all applicable changes to the EMPr that are approved by the DFFE; — Assisting the Contractor in drafting environmental method statements and/or the Environmental Policy where such knowledge/expertise is lacking; — Undertaking daily environmental monitoring to ensure the Contractor's activities do not impact upon the receiving environment. Such monitoring shall include dust, noise and water monitoring; and — Maintaining the following on site: — A weekly site diary. — A non-conformance register (NCR). — An I&AP communications register, — A register of audits, and — Records of all communication received in relation to compliance actions. The EO will remain employed until all rehabilitation measures, as required for implementation due to construction damage, are completed and the site is handed over to the Operator.
Independent Environmental Control Officer (ECO)	A suitably qualified ECO must be appointed by the Holder of the EA to monitor the project compliance with the EMPr and conditions of the environmental authorisation on a monthly basis during construction. During the operational phase environmental monitoring may be undertaken as specified by the DFFE (such as annually) by the external ECO. Proof of external ECO appointment must be maintained onsite. Responsibilities of the ECO include: — Be fully conversant with the EIR, the conditions of environmental authorisation and the EMPr; — Be fully conversant with all relevant environmental legislation and ensure compliance thereof; — Approve method statements; — Remain employed until the completion of the construction activities; and — Report to the Project Manager, including all findings identified onsite. In addition, the ECO will: — Undertake independent monthly inspections of the site and surrounding areas in order to audit compliance with the EMPr and conditions of the environmental authorisation; — Take appropriate action if the specifications contained in the EMPr and conditions of the environmental authorisation are not followed; — Monitor and verify that environmental impacts are kept to a minimum, as far as possible; and — Ensure that activities onsite comply with all relevant environmental legislation.
Contractors, Staff and Service Providers	— Prepare Method Statements as per the EMPr, and ensure all activities are conducted as per the approved Method Statements. — Complying with the Holder of the EA's environmental management specifications. — Be conversant with all EMPr and conditions of the EA, and ensure compliance thereto. — Adhering to any environmental instructions issued by the Site Manager/Project Manager on the advice of the ECO.Completion of the appropriate training requirements as specified in the training program.

Refer to: Table 1 (Part A, Section 3) of the Generic EMPr for the development and expansion of substation infrastructure for the transmission and distribution of electricity, attached as Appendix D.

4.2 ENVIRONMENTAL AWARENESS PLAN

Legislation requires that the Proponent (via the appointed EPC contractor/principal contractor) must develop an environmental awareness plan that describes the manner in which they intend to inform employees of any environmental risks which may result from their work and the manner in which the risks must be dealt with in order to avoid pollution or the degradation of the environment. In recognition of the need to protect our environment, environmental management should not only be seen as a legal obligation but also as a moral obligation.

It is important to ensure that all relevant personnel have the appropriate level of environmental awareness and competence to ensure continued environmental due diligence and ongoing minimisation of environmental degradation and harm.

To achieve effective environmental management, it is important that employees, contractors (including subcontractors) are aware of the responsibilities in terms of the relevant environmental legislation and the contents of the EMPr, conditions of the environmental authorisation.

The Proponent will provide appropriate resources to facilitate social and environmental awareness training during the construction, operational and decommissioning phases of the project. The Proponent will require that all managers associated with the project adhere to the mitigation/management measures detailed in the EMPr and identify, evaluate, and minimise risks to the social, physical and biophysical environments. This will be implemented by educating employees in social and environmental matters and responsibilities relating to performance of their assigned tasks. Furthermore, employees will be entrusted to maintain the necessary level of environmental performance for their activities. Contractors, and their associated sub-contractors, will also need to demonstrate compliance to mitigation/ management measures included in the EMPr.

The following methodology described must be used to implement and ensure environmental and social awareness and competence:

4.2.1 INTERNAL COMMUNICATION

Internal Communication of environmental issues to ensure environmental awareness will be achieved by using any combination of the following means:

- Meetings;
- Memos;
- Notice boards;
- Briefs;
- Reports;
- Monthly themes;
- Daily operational bulletins;
- Newsletter;
- E-mail;
- Telephone; and
- Induction training.

4.2.2 STANDARD MEETINGS

The following standard meetings will be held at specific times to ensure that environmental and social awareness; potential problems; complaints etc. are heard and addressed proactively:

- Safety, Health and Environmental Meetings will be held monthly by the Senior Management;

- Safety, Health and Environmental Meetings will be held weekly (during construction) and monthly (during operation) by the relevant personnel, environmental and social issues will form part of the agenda;
- Communication between all personnel and Senior Management will be facilitated through the appropriate reporting lines, or by using complaint and incident forms.

4.2.3 ENVIRONMENTAL AND SOCIAL TALK TOPICS

Monthly environmental and social talk topics must be compiled and distributed/shared to relevant personnel and must be displayed on appropriate notice boards or shared by whatever means established on site. As a minimum, the following topics must be considered during the course of the construction phase:

- Water Quality;
- Water Use and Consumption;
- Air Quality i.e. dust;
- Power Consumption and Energy Efficiency;
- Waste Management;
- Fauna and Flora;
- Emergency Procedures;
- Incidents Reporting;
- Systems;
- Noise;
- Heritage Impacts;
- Landowner Etiquette;
- Speed Limits;
- Health Risks (such as HIV/ Aids); and
- General Awareness (e.g. World Environment Day, National Arbour Day).

4.2.4 GENERAL COMMUNICATIONS

Communication to the community, government, landowners, neighbouring farmers, environmental groups, non-government organisations and other stakeholders will be communicated to ensure environmental and social awareness by means of the following:

- Fax or E-mail;
- Telephone; or
- Formal meetings.

4.2.5 TRAINING

It is important to ensure that all personnel, contractors and their sub-contractors have the appropriate level of environmental awareness and competence to ensure continued environmental due diligence and on-going minimisation of environmental harm. As a minimum environmental training must include the following:

- Employees must have a basic understanding of the key environmental features of the site and the surrounding environment.
- Employees will be thoroughly familiar with the requirements of the EMPr and the environmental specifications as they apply to the project.
- Employees must undergo training for the operation and maintenance activities associated with project and have a basic knowledge of the potential environmental impacts that could occur and how they can be minimised and mitigated.
- Awareness of any other environmental matters, which are deemed to be necessary by the Environmental Officer.

- Training must include the environment, health and safety as well as basic HIV/AIDS education.

The following facets to training form part of this Environmental and Social Awareness Plan:

- **Induction**: Environmental and social awareness training will be given at induction when personnel join the company and/or return from leave. Induction training will also be given to visitors entering the site. Induction training will include, inter alia:
  - A discussion on the environment concept, what does it comprise of and how do we interact with it;
  - A description on the components and phases of the specific renewable power generation facility;
  - A general account of how the facility and its associated activities can affect the environment, giving rise to what are called environmental impacts;
  - A discussion on what staff can do in order to help prevent the negative environmental impacts from degrading the environment i.e. environmental impact management.
- **Job Specific Training**: Job specific training programmes will be developed as and when required. The programs will be based on the significant environmental and social aspects/ impacts that are identified during regular audits and site inspections. Supervisory staff will be equipped with the necessary knowledge and information to guide their employees on environmental and social aspects applicable to performing a specific task.
- **Competency Training**: The Environmental Officer will be responsible for the environmental and social competency and awareness training of Middle Management and supervisors. This training will be performed both on a one-on-one basis and through workshops and presentations. Competence and the effectiveness of training and development initiatives will be determined through the following methods:
  - Trend analysis of incidents reported; and
  - Analysis of work areas during visits and audits.

  The process to declare competency of personnel is documented in the ISO9001:2000 procedure. This plan will be amended periodically in light of operational changes, learning experienced during its implementation and other activities that can affect the risk profiles.
- **Training Records**: Training can be done either in a written or verbal format but will be in an appropriate format for the receiving audience. Persons having received training must indicate in writing that they have indeed attended a training session and have been notified in detail of the contents and requirements of the EMPr. The attendance registers must be kept on file.

4.3 ENVIRONMENTAL DOCUMENTATION REPORTING AND COMPLIANCE

To ensure accountable and demonstrated implementation of the EMPr, a number of reporting systems, documentation controls and compliance mechanisms must be in place. **Table 4-2** indicates the minimum requirements as set out in the generic EMPrs for the development of overhead transmission and distribution infrastructure and for the development and expansion of substation infrastructure for the transmission and distribution of electricity.

Table 4-2: Documentation Reporting and Compliance Requirements as per the generic EMPrs

ASPECT	REFER TO GENERIC EMPR (PART A)
Document control/Filing system	Section 4.1
Documentation to be available	Section 4.2
Weekly Environmental Checklist	Section 4.3
Environmental site meetings	Section 4.4
Required Method Statements	Section 4.5

ASPECT	REFER TO GENERIC EMPR (PART A)
Environmental Incident Log (Diary)	Section 4.6
Non-compliance	Section 4.7
Corrective action records	Section 4.8
Photographic record	Section 4.9
Complaints register	Section 4.10
Claims for damages	Section 4.11
Interactions with affected parties	Section 4.12
Environmental audits	Section 4.13
Final environmental audits	Section 4.14

Refer to: Part A, Section 4 of the Generic EMPr for the development and expansion of substation infrastructure for the transmission and distribution of electricity, attached as Appendix D.

4.4 MONITORING

The EPC Contractor EO will monitor the day-to-day site activities on an ongoing basis and will produce weekly monitoring reports during construction. The independent external ECO will undertake monthly audits to ensure compliance with the EMPr and conditions of the environmental authorisation during the construction activities and will report to the Site Manager should any non-compliance be identified or corrective action deemed necessary.

During the operational phase, The Proponent (via the appointed EPC contractor/principal contractor) will establish, implement and maintain a procedure to monitor and measure, on a regular basis, the key characteristics of the operations that may have a significant environmental impact. The procedure shall include the documenting of information to monitor performance, applicable operational controls and conformity with the operation's environmental objectives and targets.

The Proponent will ensure that all instruments and devices used for the measurement or monitoring are calibrated and appropriately operated and maintained. Calibration records must be kept on site or in close proximity to the equipment for ease of availability.

All the conditions outlined in the EMPr will be subject to required internal day-to-day monitoring and external compliance monitoring. Where required, any specific additional monitoring has been outlined in the EMPr.

4.5 NON-CONFORMANCE AND CORRECTIVE ACTION

The auditing of the construction and operational activities may identify non-conformances to the EMPr and conditions of the EA. Non-conformances may also be identified through incidents, emergencies or complaints recorded. In order to correct non-conformances, the source must be determined, and corrective actions must be identified and implemented.

4.5.1 COMPLIANCE WITH THE EMPR AND CONDITIONS OF THE ENVIRONMENTAL AUTHORISATION

- A copy of the EMPr and conditions of the environmental authorisation will be available onsite at all times for the duration of the construction and operational activities;
- All persons employed by a contractor or their sub-contractors will abide by the requirements of the EMPr and conditions of the environmental authorisation;
- Any members of the workforce found to be in breach of any of the specifications contained within the EMPr and conditions of the environmental authorisation may be ordered by the Site Manager to leave the site. A contractor will not direct a person to undertake any activity which would place them in contravention of the specifications contained within the EMPr and conditions of the environmental authorisation;
- Should a contractor be in breach of any of the specifications contained in the EMPr and conditions of the environmental authorisation, the Site Manager will, in writing, instruct the contractor responsible for the incident of non-compliance regarding corrective and/or remedial action required, specify a timeframe for implementation of these actions, implement a penalty and/or indicate that work will be suspended should non-compliance continue;
- Should non-compliance continue, further written notification will be forwarded to the contractor responsible for the incident of non-compliance outlining the required corrective and/or remedial action, the timeframe for implementation, penalties and/or work will be suspended as specified previously; and
- Departmental officials will be given access to the property referred to in the EIAR and EMPr for the purpose of assessing and/or monitoring compliance with the EMPr and conditions of the environmental authorisation, at all reasonable times.

4.5.2 DUTY OF CARE

Under Section 28 of the NEMA, all personnel involved with the construction and operational activities onsite will be responsible for implementing measures to prevent pollution or degradation of the environment from occurring, continuing or recurring. Failure to comply with the above conditions is a breach of the duty of care. If such harm is unavoidable, steps must be taken to minimise and rectify such pollution or degradation of the environment.

4.6 DOCUMENTATION AND REPORTING

The following documentation must be kept onsite in order to record compliance with the EMPr and conditions of the environmental authorisation:

- Record of complaints; and
- Record of emergencies and incidents.

The contractor will be required to report on the following:

- Environmental incidents involving contractor/ employees and/or the public;
- Environmental complaints and correspondence received from the public; and
- Incidents that cause harm or may cause harm to the environment.

The above records will form an integral part of the ECO's reports and records thereof maintained for the duration of the project. These records will be kept with the EMPr and conditions of the EA, and will be made available for scrutiny if so requested by the Site Manager or his delegate and the ECO.

The contractor will ensure that the following information is recorded for all environmental complaints/incidents/emergencies:

- Date of complaint/incident/emergency;
- Location of complaint/incident/emergency;
- Nature of complaint/incident/emergency;
- Causes of complaint/incident/emergency;

- Party/parties responsible for causing complaint/incident/emergency;
- Immediate actions undertaken to stop/reduce/contain the causes of the complaint/incident/emergency;
- Additional corrective or remedial action taken and/or to be taken to address and to prevent reoccurrence of the complaint/incident/emergency;
- Timeframes and the parties responsible for the implementation of the corrective or remedial actions;
- Procedures to be undertaken and/or penalties to be applied if corrective or remedial actions are not implemented; and
- Copies of all correspondence received regarding complaints/incidents/emergency.

4.7 PUBLIC COMPLAINTS

A signboard must be erected at the entrance to the project site, informing the public of the construction activities taking place. The signboard must include the following information:

- The name of the contractor; and
- The name and contact details of the site representative to be contacted in the event of emergencies or the location of the complaint registration.

5 GENERIC ENVIRONMENTAL CONTROLS

This section refers to construction related activities that are common to the development of substation infrastructure projects as defined within the pre-approved generic EMPrs. For each activity, a set of prescribed environmental controls and associated management actions have been identified. Contractors shall implement these controls as a minimum requirement for mitigating the impact of particular construction related activities.

These control measures are defined within Part B: Section 1 of the pre-approved generic EMPr (attached as **Appendix D**). The format of a general environmental control is shown below, see **Table 5-1**. The boxes shaded in green are predefined and represent minimum standards for the management of that particular aspect. The Contractor will be required to adhere to all impact management actions (where applicable to the construction related activity) for the Project. The boxes shaded in red assign responsibility for the implementation and monitoring of the impact management actions. This implementation and monitoring information is project specific and shall be completed by the Contractor prior to commencement of construction.

Table 5-1: Format of a general environmental control illustrating aspects which are predefined versus those which still need to be completed by the contractor

Management Objective:	Predefined as part of Generic EMPr					
Management Outcome:	Predefined as part of Generic EMPr					
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
Predefined as part of Generic EMPr	To be completed by Contractor	To be completed by Contractor	To be completed by Contractor	To be completed by Contractor	To be completed by Contractor	To be completed by Contractor

The completed template must be signed and dated on each page by both the contractor and the holder of the EA prior to commencement of the activity. The method statements must prepared and agreed to by the holder of the EA, prior to commencement, and must be appended to the template. Each method statement must also be duly signed and dated on each page by the contactor and the holder of the EA. This template, once signed and dated, is legally binding. The holder of the EA will remain responsible for its implementation.

The construction related activities addressed within Part B: Section 1 of the pre-approved generic EMPrs are as follows:

Table 5-2: Activities and management measures as per generic EMPr (Part B: Section 1)

ACTIVITY	REFER TO GENERIC EMPR FOR THE DEVELOPMENT AND EXPANSION OF SUBSTATION INFRASTRUCTURE, ATTACHED AS APPENDIX D (PART B: SECTION 1)
Environmental awareness training	5.1
Site Establishment development	5.2
Access restricted areas	5.3
Access roads	5.4
Fencing and Gate installation	5.5
Water Supply Management	5.6

ACTIVITY	REFER TO GENERIC EMPR FOR THE DEVELOPMENT AND EXPANSION OF SUBSTATION INFRASTRUCTURE, ATTACHED AS APPENDIX D (PART B: SECTION 1)
Storm and wastewater management	5.7
Solid and hazardous waste management	5.8
Protection of watercourses and estuaries	5.9
Vegetation clearing	5.10
Protection of fauna	5.11
Protection of heritage resources	5.12
Safety of the public	5.13
Sanitation	5.14
Prevention of disease	5.15
Emergency procedures	5.16
Hazardous substances	5.17
Workshop, equipment maintenance and storage	5.18
Batching plants	5.19
Dust emissions	5.20
Blasting	5.21
Noise	5.22
Fire prevention	5.23
Stockpiling and stockpile areas	5.24
Finalising tower positions	5.25
Civil works	5.25
Excavation (and Installation) of foundations	5.26
Installation of foundations, cable trenching and drainage systems	5.27
Assembly and erecting towers	
Installation of equipment (circuit breakers, current Transformers, Isolators, Insulators, surge arresters, voltage transformers, earth switches)	5.28
Steelwork Assembly and Erection	5.29

ACTIVITY	REFER TO GENERIC EMPR FOR THE DEVELOPMENT AND EXPANSION OF SUBSTATION INFRASTRUCTURE, ATTACHED AS APPENDIX D (PART B: SECTION 1)
Cabling and Stringing	5.30
Testing and Commissioning (all equipment testing, earthing system, system integration)	5.31
Socio-economic	5.32
Temporary closure of site	5.33
Dismantling of old equipment	5.34
Landscaping and rehabilitation	5.35

Refer to: Part B – Section 1 of the Generic EMPr for the development and expansion of substation infrastructure for the transmission and distribution of electricity, attached as Appendix D.

6 SITE SPECIFIC ENVIRONMENTAL CONTROLS

The EMPr contains guidelines, operating procedures, rehabilitation and pollution control requirements which will be binding to the onsite personnel working for, or on behalf of the Proponent. It is essential that the EMPr be carefully studied, understood, implemented and adhered to at all times.

In instances where the method statements provided by the contractor conflict with the EMPr, such conflicts will be discussed between the Site Manager, ECO and contractor and if unresolved the EMPr will take precedent.

The EMPr identifies various actions which are undertaken throughout the construction and operational phases of the Camden I WEF. Not every action will be required during the entire course of activities. Therefore, the actions identified in the EMPr have been given priority timeframes for proposed implementation. The columns in the structure of the EMPr have been described **Table 6-1** below.

Table 6-1: Structure of EMPr

COLUMN	DESCRIPTION
Activity/Aspect	Highlights the various activities/aspects associated with the project i.e. the contractors' activities that will interact with the environment.
Impact Management Outcome	The desired outcomes from effectively minimising negative impacts and/or enhancing positive impacts.
Impact Management Actions/Measures	Indicates the actions required to prevent and /or minimise the potential impacts on the environment that are associated with the project.
Indicator and Compliance Management	Items that will assist with determining compliance against management actions.
Responsibility	Indicates the party responsible for implementing the environmental measures and action plans laid out in the EMPr. Please note that the Site Manager will have authority to stop works if/as necessary.
Priority Timeframe	Indicates when the actions for the specific aspect must be implemented and/or monitored.

The following assumptions have been made in the development of the environmental specification in this site specific EMPr:

- An environmental file containing the information/documentation required by this site specific EMPr is to remain onsite and to be made available at the request of the auditor or similar monitoring body; and
- For ease of reference, any person(s) employed to assist in the Project (i.e. contractors, sub-contractor and permanent and temporary staff) will be collectively referred to as 'onsite personnel'.

It should be noted that at this point of the Project planning process, the necessity for and timing of the decommissioning phase is unknown. Before decommissioning, the holder of the EA will need to follow the related legal permitting process in terms of NEMA and other legislation applicable at the time. The future associated permitting process will further supplement any commitments made within this document.

Table 6-2 outlines the site specific EMPr for the proposed Project.

Table 6-2: Environmental Management Programme Mitigation and Management Measures

ACTIVITY/ASPECT	IMPACT MANAGEMENT ACTIONS/MEASURES	RESPONSIBLE PERSON	PRIORITY TIMEFRAME
CONTRACTOR LAYDOWN AREA AND SITE ACCESS			
Impact Management Outcome: — To implement measures to minimise impacts on the environment from the initiation of construction activities through planning, careful site access route selection and implementation of mitigation measures.			
Indicator and Compliance Mechanism: — Health, safety, environmental and community incident and complaints management system register. — Close-out on incidents. — Monitoring and audit reports. — Inductions training and register. — Environmental awareness programme/toolbox talks.			
Project Initiation of Construction Activities	Prior to commencement of onsite activities, appoint an ECO to manage and verify compliance with the EA and EMPr.	Project Manager ECO Contractor (Site Manager)	Construction Decommissioning
	The development footprint must be demarcated to ensure that only the demarcated areas are impacted upon. Any no-go areas identified must be demarcated before the construction or decommissioning commences.		
	All personnel and contractors to undergo Environmental Awareness Training, including awareness of the surrounding area and sensitive environmental receptors within the project area, to inform contractors and site staff of the importance of these areas and their conservation. A signed register of attendance must be kept for proof.		Construction Operation
	Site clearing must be limited to the footprint of the infrastructure requirements.		Construction

ACTIVITY/ASPECT	IMPACT MANAGEMENT ACTIONS/MEASURES	RESPONSIBLE PERSON	PRIORITY TIMEFRAME
	Locate firefighting measures at laydown areas and vehicles, such as fire extinguishers, and make personnel aware of fire prevention and firefighting measures.		
	Firefighting equipment must be securely placed and inspected monthly.		
VEHICLE, EQUIPMENT AND MACHINERY MANAGEMENT			
Impact Management Outcome: — To implement measures to minimise impacts on the environment from poorly maintained equipment, machinery and vehicles onsite.			
Indicator and Compliance Mechanism: — Vehicle and Equipment maintenance programme. — Health, safety, environmental and community incident and complaints management system register. — Close-out on incidents. — Monitoring and audit reports. — Transport route delineation. — Daily equipment, machinery and vehicle checklists. — Incident classification and reporting procedure.			
Operation of Equipment, Machinery and Vehicles	Ensure that the equipment, machinery and vehicles are adequately maintained so as to: — Reduce the potential for spillages of oil, diesel, fuel or hydraulic fluid. — Ensure road-worthiness. — Reduce emissions. Evidence of such maintenance must be recorded and maintained onsite for verification.	EO Contractor	Construction Operation Decommissioning
	The movement of vehicles into and out of the site must be managed to ensure the impact on public areas is minimised, such as ensuring that abnormal loads are moved outside of peak traffic hours, and reasonable measures are taken to ensure that public and staff safety is managed adequately.		

ACTIVITY/ASPECT	IMPACT MANAGEMENT ACTIONS/MEASURES	RESPONSIBLE PERSON	PRIORITY TIMEFRAME
FUEL AND CHEMICAL MANAGEMENT			
Impact Management Outcome: — To ensure the correct storage, handling and disposal of fuels and chemicals in order to prevent impacts to the surrounding environment.			
Indicator and Compliance Mechanism: — Maintenance records. — Safe disposal certificates (if applicable) — Material safety data sheets (MSDS). — Health, safety, environmental and community incident and complaints management system register. — Chemicals management procedure (to be developed). — Monitoring and audit reports. — Training records.			
Fuel and Chemical Management	Provide secure storage for fuel, oil, chemicals and other hazardous materials. Securely fence and lock the storage areas to accommodate all hazardous substances such as fuel, oils and chemicals. The storage area must be roofed and the floor must be an impermeable surface and suitably bunded as per the requirements outlined in SANS 10089-1 (2008). Ensure that the total combined storage capacity on site does not exceed 500 cubic metres. If storage capacity triggers licencing, those must be acquired.	EO Contractor	Construction Operation
	Indicate the location of the fuel and chemical storage area on the layout plans.		
	Label all liquids (chemicals and hydrocarbons) stored onsite for easy identification. MSDS for onsite chemicals, hydrocarbon materials and hazardous substances must be readily available. MSDS must include mitigation measures to ameliorate potential environmental impacts which may result from a spill, incorporating health and safety mitigation measures.		
	A spill management plan must be in place to ensure that should there be any chemical spill out or over that it does not run into the surrounding areas. Drip trays or any form of oil		

ACTIVITY/ASPECT	IMPACT MANAGEMENT ACTIONS/MEASURES	RESPONSIBLE PERSON	PRIORITY TIMEFRAME
	absorbent material must be placed underneath vehicles/machinery and equipment when not in use.		
	No servicing of equipment on site unless necessary. All contaminated soil / yard stone shall be treated in situ or removed and be placed in containers for safe disposal.		
	In cases where a surface leak occurs during loading and off-loading activities, the spill material will be cleaned using a spill kit.		
	Leaking equipment and vehicles must be repaired immediately or be removed from project area to facilitate repair		
Health and Safety	Display “no smoking” and “no naked flame” signs in and around the project area, as well as near the hazardous material store.	EO Contractor	Construction Operation
	Strategically place the correct types of fire extinguishers onsite and near the hazardous material store. Train key personnel on basic firefighting skills		
	Frequently inspect and maintain containment facilities and retain records onsite.		
WASTE MANAGEMENT			
Impact Management Outcome: — To ensure the correct handling, storage, transportation and disposal of general waste and hazardous waste.			
Indicator and Compliance Mechanism: — Induction training and records. — Waste Management Plan (WMP). — Relevant SANS Codes of Practice. — Waste manifests and safety disposal certificates (all waste streams).			

ACTIVITY/ASPECT	IMPACT MANAGEMENT ACTIONS/MEASURES	RESPONSIBLE PERSON	PRIORITY TIMEFRAME
— Emergency preparedness and response procedure. — Incident classification and reporting management procedure (to be developed). — Health, safety, environmental and community incident and complaints management system register. — Monitoring and audit reports.			
General Waste Management	General waste generated as a result of construction and operational activities must be managed in accordance with a WMP (see Section 7.1 of this EMPr). The procedure must be reviewed to ensure compliance with legislative amendments.	EO Contractor	Construction Operation Decommissioning
	Train and inform all onsite personnel regarding general waste minimisation, management and disposal as per the WMP.		
	Prohibit littering and burning of waste onsite.		
	Place an adequate number of labelled or colour coded general waste bins around the laydown area and at the construction sites during construction activities in order to minimise littering. The bins must be removed from the site on a regular basis for disposal at a registered or licensed disposal facility.		
	Waste management must be a priority and all waste must be collected and stored adequately. It is recommended that all waste be removed from site on a weekly basis to prevent rodents and pests entering the site. Including preventing livestock access to waste. — Refuse bins will be emptied and secured. — Temporary storage of domestic waste shall be in covered waste skips. — Maximum domestic waste storage period will be 10 days.		
	Retain records such as waybills and waste manifests associated with waste removal, transportation and disposal (safe disposal certificates).		
	Prohibit the mixing of general waste with hazardous waste. Should general waste be mixed with hazardous waste, it will be considered hazardous waste.		

ACTIVITY/ASPECT	IMPACT MANAGEMENT ACTIONS/MEASURES	RESPONSIBLE PERSON	PRIORITY TIMEFRAME
	There will need to be waste segregation (e.g. electronic equipment, chemicals, oil contaminated rags, paper, plastic) and management on the site.		
	Recover, recycle and reuse waste of general waste as far as possible.		
Hazardous Waste Management	Appropriate ablution facilities should be provided for construction workers during construction and decommissioning and on-site staff during the operation of the facility. These must be situated outside of any delineated watercourses and pans/depressions or the buffers provided.	ECO EO Contractor	Construction Operation Decommissioning
	Hazardous waste generated as a result of construction, operational and decommissioning activities must be managed in accordance with a WMP.		
	The WMP must include a procedure for handling spillages.		
	Strict use and management of all hazardous materials used on site.		
	Strict management of potential sources of pollution (e.g. litter, hydrocarbons from vehicles & machinery, cement during construction, etc.) within demarcated / bunded areas		
	Train and inform all onsite personnel regarding hazardous waste minimisation, management and disposal as per the WMP.		
	Any recyclable material which is considered hazardous is to be collected and transferred by a permitted/trained waste contractor in accordance with the SANS 10228 for transport to the approved recycling/recovery facility.		
	A designated and appropriately demarcated and covered hazardous waste storage area must be established on a hard standing area.		

ACTIVITY/ASPECT	IMPACT MANAGEMENT ACTIONS/MEASURES	RESPONSIBLE PERSON	PRIORITY TIMEFRAME
	Ensure that all hazardous wastes temporarily stored on site are stored in a covered skip and are placed on a hard standing		
	Clean areas where hazardous waste spills have occurred and dispose of the hazardous material appropriately. Key personnel must be trained on handling spillages.		
	Retain records of appropriate safety disposal certificates associated with hazardous waste removal, transportation and disposal.		
	The emergency preparedness and response plan (Section 7.6 of this EMPr or the site specific one developed) must be implemented. The plan must be placed in key locations around the site, visible to all employees.		
	Ensure that waste manifest documentation (as per the Waste Classification and Management Regulations – GNR 634) is prepared and maintained for the generation, transportation and disposal of waste.		
	Report any major spill incidents[4] that causes or may cause environmental pollution to the Department within 24 hours of occurrence.		
	Should Redox-flow batteries energy systems be implemented, process controls in place for the BESS to prevent contamination and deterioration of electrolyte leading to excessive purging.	EO Operator	Operation

[4] "Incident" means an unexpected, sudden and uncontrolled release of a hazardous substance, including from a major emission, fire or explosion, that causes, has caused or may cause significant harm to the environment, human life or property. For example, a large oil spill into storm water systems. An incident is reportable if the environment outside the boundaries of your operation is likely to be impacted by the incident i.e., water pollution or radiation.

ACTIVITY/ASPECT	IMPACT MANAGEMENT ACTIONS/MEASURES	RESPONSIBLE PERSON	PRIORITY TIMEFRAME
SOIL, LAND AND AGRICULTURAL MANAGEMENT			
Impact Management Outcome: — To prevent any disturbance, erosion or contamination of soil resources.			
Indicator and Compliance Mechanism: — Induction training and records. — WMP. — Incident classification and reporting management procedure (to be developed). — Health, safety, environmental and community incident and complaints management system register. — Monitoring and audit reports. — Stormwater Management Plan (SWMP) (to be developed).			
Soil and Land Management	Develop and implement a system of storm water management, which will prevent erosion, as part of the road engineering on site. As part of this system, the integrity of the existing contour bank systems of erosion control on croplands, where they occur on steeper slopes, must be kept in tact.	EO Contractor Site Manager	Construction Operation
	Land clearance must only be undertaken in accordance with the construction programme and only within the development footprint. Unnecessary land clearance must be avoided.		
	Access roads must have gradients or surface treatment to limit erosion, and road drainage systems must be accounted for.		
	Implement an effective system of storm water run-off control, in line with the SWMP (to be developed).		
	Any occurrences of erosion must be attended to immediately and the integrity of the erosion control system at that point must be amended to prevent further erosion from occurring there.		Construction

ACTIVITY/ASPECT	IMPACT MANAGEMENT ACTIONS/MEASURES	RESPONSIBLE PERSON	PRIORITY TIMEFRAME
	Any excavations done during the construction phase, in areas that will be re-vegetated at the end of the construction phase, must separate the upper 30 cm of topsoil from the rest of the excavation spoils and store it in a separate stockpile. When the excavation is back-filled, the topsoil must be back-filled last, so that it is at the surface.	EO Contractor	
	Topsoil should only be stripped in areas that are excavated. On areas that are only cleared, like construction lay down areas, it is much better to leave the topsoil in place.		
	Ensure soil stockpiles (from road construction) and concrete / building sand are sufficiently safeguarded against rain wash.		
	Landscape and re-vegetate all unnecessarily denuded areas as soon as possible.	Contractor Site Manager	
	Water erosion action is considered limited, however backfilling with soil and use of gabions or Reno Mattresses must be used where evidence of erosion is present.	Contractor Site Manager	Construction Operation
	Due to the potential for soil compaction due to vehicles, traffic must be limited to existing or proposed roadways as far as possible.	Contractor Site Manager	
	The construction of roads must be limited in width and length as far as is practical to limit impacts.	EO Contractor	Construction
	Where an impact to the vegetation outside of the development footprint occurs, rehabilitation measures must be undertaken to maintain the baseline vegetation population and health.		
	Machinery must be regularly checked to ensure hydrocarbon leaks (including fuel and hydraulic fluids) are not occurring. Drip trays must be used where necessary. Fuels and oils must be stored within bunded areas.	Contractor/Operator	Construction Operation

ACTIVITY/ASPECT	IMPACT MANAGEMENT ACTIONS/MEASURES	RESPONSIBLE PERSON	PRIORITY TIMEFRAME
	Sufficient on-site ablutions must be made available during site construction and decommissioning. If portable toilets can be installed for the construction phases, ensure that they in accordance with Occupational Health and Safety Act, (No 85 of 1993).	EO Contractor	Construction Decommissioning
WATER MANAGEMENT			
Impact Management Outcome: — To implement measures to prevent the contamination on surface and groundwater resources. — To prevent erosion.			
Indicator and Compliance Mechanism: — Induction training and records. — WMP. — Water Use Licence (or General Authorisation as applicable). — Incident classification and reporting management procedure (to be developed). — Environmental awareness programme/toolbox talks. — SWMP (to be developed).			
Surface Water Management	Investigate feasibility of construction activities being conducted during the dry season to avoid possible wetland contamination from storm water runoff (as well as soil erosion) that may be experienced during wet seasons, as far as practically possible.	Site Manager EO	Pre-Construction
	A stormwater management plan must be developed in the preconstruction phase, detailing the stormwater structures and management interventions that must be installed to manage the increase of surface water flows directly into any natural systems. Effective stormwater management will include effective stabilisation (gabions and Reno mattresses) of exposed soil and the re-vegetation of any disturbed riverbanks.		

ACTIVITY/ASPECT	IMPACT MANAGEMENT ACTIONS/MEASURES	RESPONSIBLE PERSON	PRIORITY TIMEFRAME
	The stormwater control systems must be inspected on an annual basis to ensure these are functional. Effective stormwater management must include effective stabilisation (gabions and Reno mattresses) of exposed soil and the re-vegetation of any disturbed riverbanks.		
	In the instances where facility roads are required on the present road / track crossings already installed by local landowners / public works entities, install properly sized culverts with erosion protection measures.		
	To appropriately manage storm water, the SWMP needs to be implemented.	Site Manager Contractor EO	Pre- construction Construction Operation
	It is recommended that a comprehensive rehabilitation / monitoring plan be implemented from the project onset i.e. during the detailed design phase prior to construction, to ensure a net benefit to the environment within all areas that will remain undisturbed.		
	The effectiveness of the stormwater / energy dissipation structures will then be inspected on an annual basis and maintained / improved as required during this the operational phase, especially where any erosion or sedimentation has become evident in the operational phase.	Site Manager EO	Operation
	Ensure proposed locations of the BESS facilities are a suitable distance from the closest water course, that is outside the demarcated water resources as per the Aquatic specialist delineation.	Site Manager Contractor Operator/Developer	Construction
	The site must be prepared/managed/contoured as according to the SWMP (to be developed) to allow for surface water to readily drain away and to prevent ponding of water anywhere within the site.	Site Manager Contractor EO	Construction
	Containment of all contaminated water by means of careful run-off management on site.		
	Install properly sized culverts with erosion protection measures at the present road / track crossings where already installed by local landowners / public works entities.		

ACTIVITY/ASPECT	IMPACT MANAGEMENT ACTIONS/MEASURES	RESPONSIBLE PERSON	PRIORITY TIMEFRAME
	Working protocols incorporating pollution control measures (including approved method statements by the contractor) should be clearly set out for the project and strictly enforced.		
	No runoff may be discharged or directed into the Pans, as these are not tolerant of excessive / regular volumes of water and would then change in nature and attributes. Suitable measures must be implemented to prevent such runoff, i.e. stormwater detention pond (or similar appropriate measure).		
Groundwater Management	Areas with the potential to contaminate the groundwater must be underlain by hardstanding of suitable integrity.	Site Manager Contractor EO	Construction
	Acquire spill kits to clean up any hydrocarbon or chemical spills during construction, operation and closure to prevent seepage. All spillage incidents must be reported to the responsible site officer as soon as they occur.		Construction Operation
	Oils, greases, diesel and other chemicals must be stored in the prescribed manner and within bunded areas to prevent groundwater contamination.		Construction
	Any cement mixing shall be completed on impervious hardstanding surfaces to prevent spillage to the environment.		
	Concrete spilled outside of the demarcated area must be promptly removed and taken to a suitably licensed waste disposal site.		
Potable Water Management	Onsite staff are to be provided with an appropriate potable water supply, safe and healthy sanitary facilities and protection against exposure to environmentally dangerous or unhealthy situations or conditions.	Contractor/Operator EO	Construction Operation
	Onsite staff must be made aware and encouraged to use water sparingly such that there is no water wastage.		

ACTIVITY/ASPECT	IMPACT MANAGEMENT ACTIONS/MEASURES	RESPONSIBLE PERSON	PRIORITY TIMEFRAME
BIODIVERSITY MANAGEMENT			
Impact Management Outcome: — Prevent the unnecessary destruction of, and fragmentation, of the vegetation community. — Prevent the loss of the faunal community associated with these vegetation communities. — Prevent the loss of the bat community associated with these vegetation communities.			
Indicator and Compliance Mechanism: — Induction training and records. — Incident classification and reporting management procedure (to be developed). — Environmental awareness programme/toolbox talks. — Monitoring and audit reports.			
Vegetation and Habitats Management	Prior to commencement of construction, compile a Rehabilitation Plan including monitoring specifications, to be implemented from the onset of the project.	Project Manager EO Contractor	Pre-Construction
	Prior to commencement of construction, compile an Alien Plant Management Plan, to be included into the EMPr during final approval.		
	Prior to commencement of construction, compile and implement an alien management plan, which highlights control priorities and areas and provides a programme for long-term control, including monitoring specifications.		
	Prior to construction commencing, a Plant Rescue Plan must be compiled to be approved by the appropriate authorities as part of the EMPr approval.		
	It is a legal requirement to obtain permits for specimens or protected species that will be lost due to construction of the project.		

ACTIVITY/ASPECT	IMPACT MANAGEMENT ACTIONS/MEASURES	RESPONSIBLE PERSON	PRIORITY TIMEFRAME
	The development footprint must be demarcated to ensure that only the demarcated areas are impacted upon (including fencing off the defined project area).		
	A detailed terrestrial biodiversity pre-construction walk-through survey will be required during a favourable season where possible, to locate any individuals of protected plants, as well as for any populations of threatened plant species. This survey must cover the footprint of all approved infrastructure, including internal service roads and footprints of tower structures (final infrastructure layout). The best season is early to late Summer if possible, taking administrative processes into account, but will be influenced by recent rainfall and vegetation growth.		
	For any plants that are transplanted, annual monitoring should take place to assess survival. This should be undertaken as per the frequency specified in the management plan and be undertaken by a qualified botanist. The monitoring programme must be designed prior to translocation of plants and should include control sites (areas not disturbed by the project) to evaluate mortality relative to wild populations.	EO	Construction Operation Decommissioning
	No collecting or poaching of any plant species.		
	Areas of indigenous vegetation, even secondary communities outside of the direct project footprint, must under no circumstances be fragmented or disturbed further.	EO Contractor	Construction Operation Decommissioning
	Vegetation clearing should occur in a phased manner in accordance with the construction programme to minimise erosion and/or run-off. Large tracts of bare soil will either cause dust pollution or quickly erode and then cause sedimentation in the lower portions of the catchment. Suitable dust and erosion control mitigation measures should be put in place to mitigate these impacts.	EO Contractor	Construction Operation Decommissioning
	Monitor surfaces for erosion, repair and/or upgrade, where necessary.	EO Contractor	Construction Operation

ACTIVITY/ASPECT	IMPACT MANAGEMENT ACTIONS/MEASURES	RESPONSIBLE PERSON	PRIORITY TIMEFRAME
			Decommissioning
	Areas that are denuded during construction need to be re-vegetated to prevent erosion during flood events. This will also reduce the likelihood of encroachment by alien invasive plant species	Contractor EO	Post-Construction
	All disturbed areas outside the direct footprint to be rehabilitated and landscaped after the development is complete. Rehabilitation of the disturbed areas existing in the project area must be made a priority. Topsoil must also be utilised, and any disturbed area must be re-vegetated with plant and grass species which are endemic to this vegetation type. Progressive rehabilitation of construction areas or cleared areas will enable topsoil to be returned more rapidly, thus ensuring more recruitment from the existing seedbank		
	Restrict impact to development footprint only and limit disturbance in surrounding areas.	Contractor/Operator EO	Construction Operation
	All construction/operational access must make use of the existing roads where possible.		
	It must be made an offence for any staff to /take bring any plant species into/out of any portion of the project area. No plant species whether indigenous or exotic should be brought into/taken from the project area, to prevent the spread of exotic or invasive species or the illegal collection of plants.	EO Contractor	Construction Operation
	A fire management plan needs to be complied and implemented to restrict the impact fire might have on the rehabilitated areas.	EO Contractor	Construction Operation
	All alien plant re-growth must be monitored and should these alien plants reoccur these plants should be re-eradicated.	EO Project Manager Contractor/Operator	Construction Operation Decommissioning

ACTIVITY/ASPECT	IMPACT MANAGEMENT ACTIONS/MEASURES	RESPONSIBLE PERSON	PRIORITY TIMEFRAME
	Rehabilitate disturbed areas in accordance with the specifications of a Rehabilitation Plan.	EO Contractor	Operation Decommissioning
Fauna Management	A qualified environmental control officer must be on site when construction begins. The area must be walked though prior to construction to ensure no faunal species remain in the habitat and get killed. Should animals not move out of the area on their own, relevant specialists must be contacted to advise on how the species can be relocated.	ECO EO Contractor	Construction
	The areas to be developed must be specifically demarcated to prevent movement of staff or any individual into highly sensitive areas and the surrounding environments, i.e the wetlands. Signs must be put up to enforce this		Construction Operation
	No trapping, killing, or poisoning of any wildlife is to be allowed. Signs must be put up to enforce this.	EO Contractor	Construction Operation
	No driving of vehicles off-road outside of construction areas.	ECO EO Contractor	Construction Operation Decommissioning
	It is a legal requirement to obtain permits for specimens or protected species that will be lost due to construction of the project.	EO Project Manager	Construction
	Personnel on site should undergo environmental induction training, including the need to abide by speed limits, the increased risk of collisions with wild animals on roads in rural areas.	ECO EO Contractor	Construction Operation Decommissioning
	Personnel to be educated about protection status of species, including distinguishing features, to be able to identify protected species.	EO Contractor	Construction Operation

ACTIVITY/ASPECT	IMPACT MANAGEMENT ACTIONS/MEASURES	RESPONSIBLE PERSON	PRIORITY TIMEFRAME
			Decommissioning
	The duration of the construction must be minimized to as short term as possible, to reduce the period of disturbance on fauna	Project Manager EO Contractor	Construction
	Outside lighting must be designed and limited to minimize impacts on fauna. Fluorescent and mercury vapour lighting must be avoided and sodium vapour (yellow) lights must be used wherever possible.	Project Manager EO	Construction Operation
	All construction and maintenance motor vehicle operators must undergo an environmental induction that includes instruction on the need to comply with speed limits, to respect all forms of wildlife. Speed limits must still be enforced to ensure that road killings and erosion is limited.	EO Contractor/Operator	Construction Operation
	Only use lights with low sensitivity motion sensors that switch off automatically when no persons are nearby, to prevent the creation of regular insect gathering pools.	Project Manager EO Contractor/Operator	Construction Operation
	Appropriate lighting should be installed to minimize impacts on nocturnal animals, as per visual specialist assessment.		
	For buildings, avoid tin roofs and roof structures that offer entrance holes into the roof cavity.	Project Manager EO Contractor/Operator	Construction Operation
	Adhere to the bat sensitivity map criteria.	Project Manager EO Contractor/Operator	Construction Operation

ACTIVITY/ASPECT	IMPACT MANAGEMENT ACTIONS/MEASURES	RESPONSIBLE PERSON	PRIORITY TIMEFRAME
	Rehabilitate cleared vegetation where possible at areas such as laydown yards	Project Manager EO Contractor/Operator	Construction Operation
	All lights on substation and/or Operations and Management (O&M) buildings, should be down-hooded and connected to motion sensors (where safe to do so), to minimise light pollution.	Project Manager EO Contractor/Operator	Construction Operation
	Access to the remainder of the site should be strictly controlled to prevent unnecessary disturbance of priority species	EO Contractor	Construction Operation Decommissioning
	Any holes/excavations need to be sealed to ensure that no fauna species can fall in.	EO Contractor	Construction
	Proper waste management must be implemented, ensuring no toxic or dangerous substances are accessible to wildlife. This should also apply to stockpiles of new and used materials to ensure that they do not become a hazard.	EO Contractor	Construction Operation Decommissioning
AVIFAUNA MANAGEMENT			
Impact Management Outcome: — To minimise impacts to avifauna and their habitat.			
Indicator and Compliance Mechanism: — Induction training and records.			

ACTIVITY/ASPECT	IMPACT MANAGEMENT ACTIONS/MEASURES	RESPONSIBLE PERSON	PRIORITY TIMEFRAME
— Incident classification and reporting management procedure (to be developed). — Environmental awareness programme/toolbox talks. — Monitoring and audit reports.			
Avifauna and Habitat Management	The results of the pre-construction monitoring must guide the lay-out of the turbines, especially as far as proposed no-turbine zones are concerned. No turbines must be constructed in the buffer zones which were identified based on the results of the pre-construction monitoring, with a specific view to limiting the risk of collisions to a variety of birds, including several Red Data species.	Project Manager EO Contractor	Pre-construction
	Design the facility with underground cabling as far as possible.		
	Where the use of overhead lines is unavoidable due to technical reasons, the Avifaunal Specialist must be consulted to ensure that a raptor friendly pole design is used, and that appropriate mitigation is implemented pro-actively for complicated pole structures e.g. insulation of live components to prevent electrocutions on terminal structures and pole transformers. Consult with Avifaunal Specialist during the design phase of the overhead lines.		
	Development in the remaining high sensitivity grassland must be limited as far as possible (limited infrastructure zone). Where possible, infrastructure must be located near margins, with shortest routes taken from the existing roads. The grassland is vital breeding, roosting and foraging habitat for a variety of SCC. These include Blue Crane (SA status near-threatened), Blue Korhaan (Global status near -threatened), White-bellied Bustard (SA Status Vulnerable), Denham's Bustard (SA Status Vulnerable).	EO Contractor	Pre-construction Construction
	A 100m all infrastructure exclusion zone must be implemented around drainage lines and associated wetlands (except essential road, pipeline and gridline crossings). Wetlands are important breeding, roosting and foraging habitat for a variety of SCC, most notably for African Grass Owl (SA status Vulnerable), Grey Crowned Crane (SA status Endangered) and African Marsh Harrier (SA status Endangered). Where unavoidable, road and grid line crossings across these features should be restricted to the immediate footprint of the infrastructure only.		

ACTIVITY/ASPECT	IMPACT MANAGEMENT ACTIONS/MEASURES	RESPONSIBLE PERSON	PRIORITY TIMEFRAME
	Where possible, existing access routes and walking paths must be made use of.		
	Conduct a pre-construction inspection to identify SCC that may be breeding within the project footprint to ensure that the impacts on breeding species (if any) are adequately managed.		Pre-construction
	Construction activity should be restricted to the immediate footprint of the infrastructure as far as possible.		Construction
	Areas that are denuded during construction need to be re-vegetated with indigenous vegetation to prevent erosion during flood and wind events. This will also reduce the likelihood of encroachment by alien invasive plant species.	EO Contractor	Post Construction
	A site-specific Construction EMPr (CEMPr) must be implemented, which gives appropriate and detailed description of how construction activities must be conducted. All contractors are to adhere to the CEMPr and must apply good environmental practice during construction. The CEMPr must specifically include the following: — No off-road driving. — Maximum use of existing roads. — Measures to control noise and dust according to latest best practice. — Restricted access to the rest of the property. — Strict application of all recommendations in the terrestrial biodiversity specialist report pertaining to the limitation and rehabilitation of the footprint.	Contractor ECO	Construction Decommissioning
	Develop a Habitat Rehabilitation Plan (HRP) and ensure that it is approved.	Project Manager	Post-Construction Operation
	Monitor rehabilitation via site audits and site inspections to ensure compliance. Record and report any non-compliance.	Site Manager Contractor EO	
	Vehicle and pedestrian access to the site to be controlled and restricted to the facility footprint as much as possible to prevent unnecessary destruction of vegetation.		

ACTIVITY/ASPECT	IMPACT MANAGEMENT ACTIONS/MEASURES	RESPONSIBLE PERSON	PRIORITY TIMEFRAME
	Formal live-bird monitoring and carcass searches to be implemented at the start of the operational phase, as per the most recent edition of the Best Practice Guidelines at the time (Jenkins *et al.*, 2015), to assess collision rates. The exact time when operational monitoring is to commence, will depend on the construction schedule, and must commence when the first turbines start operating. The Best Practice Guidelines require that, as an absolute minimum, operational monitoring is to be undertaken for the first two years of operation, and then repeated again in year 5, and again every five years thereafter for the operational lifetime of the facility.	Project Manager / Site Manager	Operation
	Appoint Avifaunal Specialist to compile operational monitoring plan, including live bird monitoring and carcass searches. Implement operational monitoring plan.		
	If estimated annual collision rates indicate unacceptable mortality levels of priority species, i.e., if it exceeds the pre-determined threshold determined by the avifaunal specialist, implement shut down on demand or other proven measures.		
	Compile quarterly and annual progress reports detailing the results of the operational monitoring and progress with any recommended mitigation measures.		
	Conduct regular inspections, under the supervision of the Avifaunal Specialist, of the overhead sections of the internal reticulation network to look for carcasses		
	The areas to be developed must be specifically demarcated to prevent movement of staff or any individual into the surrounding environments. Signs must be put up to enforce this.	EO ECO Contractor	Construction Operation
	All personnel must undergo environmental induction with regards to avifauna and in particular awareness about not harming, collecting, or hunting terrestrial species (e.g., guineafowl and francolin), and owls, which are often persecuted out of superstition. Signs must be put up to enforce this.		

ACTIVITY/ASPECT	IMPACT MANAGEMENT ACTIONS/MEASURES	RESPONSIBLE PERSON	PRIORITY TIMEFRAME
BAT MANAGEMENT			
Impact Management Outcome: To minimise impacts to bats and their habitat.			
Indicator and Compliance Mechanism: — Induction training and records. — Incident classification and reporting management procedure (to be developed). — Environmental awareness programme/toolbox talks. Monitoring and audit reports.			
Bat and Habitat Management	Adhere to the bat sensitivity map during all phases of the facility's operation, thus avoiding all bat sensitive areas. This also applies to temporary activities such as storage yards and construction offices.	Project Manager EO Contractor	Pre-construction Construction Operation Decommissioning
	All lights on substation and/or Operations and Management (O&M) buildings, should be down-hooded and connected to motion sensors (where safe to do so), to minimise light pollution.		
	For buildings, avoid tin roofs and roof structures that offer entrance holes into the roof cavity.	Site Manager EO	
	Rehabilitate cleared vegetation where possible at areas such as laydown yards.	Project Manager EO Contractor	Construction Post-construction
	Vegetation should be allowed to recover where it was cleared after the construction and decommissioning of the facility.		Construction Operation Decommissioning

ACTIVITY/ASPECT	IMPACT MANAGEMENT ACTIONS/MEASURES	RESPONSIBLE PERSON	PRIORITY TIMEFRAME
	Turbine layout adjustments to adhere to the sensitivity maps, and where needed reducing blade movement at selected turbines and high-risk bat activity times/weather conditions as informed by operational monitoring results.	Project Manager Contractor	Construction Operation
	Bat mortality impact during operation should be measured and ensure that the WEF impacts remain within sustainable levels.	Project Manager	Operation
	Curtailment may be implemented during operation if the results of the operational bat mortality monitoring indicate that bats are being killed above sustainable thresholds. These thresholds are advised on during the operational study.		
	Only use lights with low sensitivity motion sensors that switch off automatically when no persons are nearby while still adhering to safety and security requirements, to prevent the creation of regular insect gathering pools. This will be at turbine bases (if applicable, and other infrastructure buildings).		
AIR QUALITY MANAGEMENT			
Impact Management Outcome: — To ensure that impacts to air quality of the surrounding environment are minimised.			
Indicator and Compliance Mechanism: — Complaints register. — Incident reporting system. — Health, safety, environmental and community incident and complaints management system register. — Incident classification and reporting management procedure (to be developed). — Equipment, machinery and vehicle maintenance.			
Dust Management	Before the commencement of any site works and during the operation, as much vegetation as possible must be retained, including patches and strips to minimise dust.	EO	Construction

ACTIVITY/ASPECT	IMPACT MANAGEMENT ACTIONS/MEASURES	RESPONSIBLE PERSON	PRIORITY TIMEFRAME
		Contractor	Operation
	Activities with high dust-causing potential, such as grading and moving of soil, must not be carried out in sensitive areas during adverse wind conditions.		Construction
	All stockpiles (if any) must be restricted to designated areas and may not exceed a height of two (2) metres;		
	Earth-moving works have the potential to generate large amounts of dust. Pre-planning of earth-moving works can reduce dust emissions by limiting the time the site is exposed. Options for dust control can include the following: — Plan earth-moving works so that they are completed just prior to the time they are needed — Observe weather conditions and do not commence or continue earth moving works if conditions are unsuitable e.g., under conditions of strong winds — Reduce off-site hauling via balanced cut and fill operations — Pre-water areas to be disturbed		
	Cover and/or maintain appropriate freeboard on trucks hauling any loose material that could produce dust when travelling. Minimise transfer points.		
	All materials transported to, or from, site must be transported in such a manner that they do not fly or fall off the vehicle. This may necessitate covering or wetting friable materials.		
	Re-vegetate disturbed areas as soon as possible to prevent excessive dust from occurring.		
	Once construction is complete, initiate rehabilitation (e.g. re-vegetation) procedures to reduce wind speed across exposed surfaces.		
	Dust-reducing mitigation measures must be put in place and must be strictly adhered to, for all roads and soil/material stockpiles especially. This includes wetting of exposed soft soil		

ACTIVITY/ASPECT	IMPACT MANAGEMENT ACTIONS/MEASURES	RESPONSIBLE PERSON	PRIORITY TIMEFRAME
	surfaces and not conducting activities during high wind periods which will increase the likelihood of dust being generated.		
	Dust suppression measures must be implemented on un-surfaced roads, such as wetting on a regular basis and ensuring that vehicles used to transport building materials are fitted with tarpaulins or covers.		
	Where possible, minimise speed limits, vehicle weights and the number of vehicles using unpaved roads.		
Exhaust emissions and Other Emissions Management	All equipment, machinery and vehicles must be fitted with appropriate emission control equipment, are maintained frequently and serviced to the manufacturers' specifications.	EO Contractor / Operator	Construction Operation Decommissioning
	Ensure incident and complaint registers are established and maintained		
	Prohibit burning of waste or vegetation onsite.		
	Conduct training of the workforce at all levels (i.e. workers, foremen, managers) in awareness of air emissions. This can be included in site induction courses and should focus on promoting understanding as to why operational controls are in place and should be adhered to.	EO Contractor / Operator	Construction Operation
NOISE MANAGEMENT			
Impact Management Outcome: To ensure that noise impacts to the surrounding environment are minimal or mitigated.			
Indicator and Compliance Mechanism: — Complaints register. — Incident reporting system. — Health, safety, environmental and community incident and complaints management system register.			

ACTIVITY/ASPECT	IMPACT MANAGEMENT ACTIONS/MEASURES	RESPONSIBLE PERSON	PRIORITY TIMEFRAME
— Incident classification and reporting management procedure (to be developed). — Equipment, machinery and vehicle maintenance.			
Noise	Plan construction activities in consultation with local communities so that activities with the greatest potential to generate noise are planned during periods of the day that will result in least disturbance. Information regarding construction activities should be provided to identified and nearby receptors likely to be affected. Such information includes: — Proposed working times. — Anticipated duration of activities. — Explanations on activities to take place and reasons for activities. — Contact details of a responsible person on site should complaints arise.	Project Manager	Pre-construction
	Design the system to ensure continuous noise does not exceed 85dB within the facilities or at any other location on site or 61 dB at the site boundary, e.g. emergency generator, air compressor etc.		
	When working near a potential sensitive receptor, limit the number of simultaneous activities to a minimum, as far as possible.	Contractor/Operator	Construction
	Fit equipment, machinery and vehicles generating excessive noise with appropriate noise abatement measures and undergo regular maintenance to ensure optimum efficiency during operation	EO Contractor/Operator	Construction Operation
	Select equipment with the lowest possible sound power levels, where possible, whilst still being suitable for the specific task.		
	Provide a complaints register to report any excessive noise incidents. Manage all complaints as per the Incident Classification and Reporting Management Procedure		
	Regular maintenance of equipment to reduce the generation of additional unwanted noise		

ACTIVITY/ASPECT	IMPACT MANAGEMENT ACTIONS/MEASURES	RESPONSIBLE PERSON	PRIORITY TIMEFRAME
	Avoid noisy activities at night-time and outside of normal weekend working hours where possible.		
	Due to the rural nature of site, construction is unlikely to continue after sunset, however if required to work afterhours, sensitive receptors must be informed accordingly.		
	Employees / contractors are to be provided with appropriate hearing protection when undertaking noisy activities.	EO ECO Contractor/Operator	Construction Operation
	A health risk assessment must be undertaken to determine if equipment continuous noise exceeds 85dB at workstation and 61dB at the boundary of the site.	EO ECO Contractor/Operator	Construction Operation
	Employees to be provided with hearing protection if working near equipment that exceeds the noise limits.	EO ECO Contractor/Operator	Construction Operation
SITES OF CULTURAL OR HERITAGE SIGNIFICANCE			
Impact Management Outcome: — To ensure that sites/artefacts of heritage value are identified and protected.			
Indicator and Compliance Mechanism: — Reporting as per Chance Find Procedure. — Monitoring and audit reports.			

ACTIVITY/ASPECT	IMPACT MANAGEMENT ACTIONS/MEASURES	RESPONSIBLE PERSON	PRIORITY TIMEFRAME
Cultural and/or Heritage Site and Palaeontological Material	The recorded cemeteries (CA009, CA013, CA014 and CA018) must be avoided with a 30 m buffer zone. The sites must be demarcated and access for family members must be ensured.	Project Manager/Site Manager Contractor EO ECO	Pre-construction Construction Operation
	Recorded heritage features should be indicated on development plans and avoided with a 30 m buffer.		
	Prior to construction commencing, the final layout should be subjected to a heritage walkthrough.		Pre-construction
	The study area should be monitored by the ECO during construction.		Construction
	The ECO should familiarise him- or herself with the fossiliferous formations and its fossils. The Evolutionary Studies Institute, University of the Witwatersrand has good examples of Ecca Group Fossils.	ECO	Pre-Construction Construction
	Implementation of a Chance Find Procedure (provided in Section 7.13) for the Project during construction. Construction crews must be properly inducted to ensure they are fully aware of the procedures regarding chance finds.	Project Manager EO Contractor	Construction
VISUAL IMPACT MANAGEMENT			
Impact Management Outcome: — To ensure that the changes to the landscape character of the area are mitigated to minimise the negative impact.			
Indicator and Compliance Mechanism: — Health, safety, environmental and community incident and complaints management system register. — Incident classification and reporting management procedure (to be developed). — Monitoring and audit reports.			

ACTIVITY/ASPECT	IMPACT MANAGEMENT ACTIONS/MEASURES	RESPONSIBLE PERSON	PRIORITY TIMEFRAME
Visual	Plan the placement of laydown areas and temporary construction equipment camps in order to minimise vegetation clearing (i.e. in already disturbed areas) wherever possible.	Project Manager Contractor EO	Pre-Construction Construction
	Where possible, the operation and maintenance buildings should be consolidated to reduce visual clutter.		
	Plan all roads, ancillary buildings and ancillary infrastructure in such a way that clearing of vegetation is minimised. Consolidate infrastructure and make use of already disturbed sites rather than undisturbed areas.		
	Carefully plan to minimise the construction period and avoid construction delays.		
	Where possible, restrict construction activities to daylight hours in order to negate or reduce the visual impacts associated with lighting.		
	Inform receptors within 1km of the WEF development area of the construction programme and schedules.		
	Minimise vegetation clearing and rehabilitate cleared areas as soon as possible.		
	Position storage / stockpile areas in unobtrusive positions in the landscape, where possible.		
	Make use of existing roads wherever possible and plan the layout and construction of roads and infrastructure with due cognisance of the topography to limit cut and fill requirements.		
	Maintain a neat construction site by removing litter, rubble and waste materials regularly.		
	Limit the number of vehicles and trucks travelling to and from the construction site, where possible.		

ACTIVITY/ASPECT	IMPACT MANAGEMENT ACTIONS/MEASURES	RESPONSIBLE PERSON	PRIORITY TIMEFRAME
	Ensure that dust suppression techniques are implemented: — on all access roads; — in all areas where vegetation clearing has taken place; — on all soil stockpiles.	EO Contractor	Construction Decommissioning
	Turbine colours should adhere to CAA requirements. Bright colours and logos on the turbines should be kept to a minimum.	Project Manager Contractor	Pre-Construction Construction
	Inoperative turbines should be repaired promptly, as they are considered more visually appealing when the blades are rotating (or at work) (Vissering, 2011).	Project Manager Operator	Operation
	If turbines need to be replaced for any reason, they should be replaced with turbines of similar height and scale to lessen the visual impact.		
	As far as possible, limit the amount of security and operational lighting present on site whilst adhering to relevant safety standards.	EO ECO	Operationa
	Light fittings for security at night should reflect the light toward the ground and prevent light spill.	EO Contractor Operator	Construction Operation Decommissioning
	Lighting fixtures should make use of minimum lumen or wattage whilst adhering to safety and security requirements.	EO Contractor Operator	Construction Operation Decommissioning
	Mounting heights of lighting fixtures should be limited, or alternatively foot-light or bollard level lights should be used	EO Contractor Operator	Construction Operation Decommissioning

ACTIVITY/ASPECT	IMPACT MANAGEMENT ACTIONS/MEASURES	RESPONSIBLE PERSON	PRIORITY TIMEFRAME
	If economically and technically feasible, make use of motion detectors on security lighting.	EO Contractor Operator	Construction Operation Decommissioning
	The buildings should not be illuminated at night and should be painted in natural tones that fit with the surrounding environment.	EO Contractor Operator	Construction Operation Decommissioning
	Non-reflective surfaces should be used where possible.	EO Contractor Operator	Construction Operation Decommissioning
	Remove infrastructure not required for the post-decommissioning use of the site.	Project Manager EO Contractor	Decommissioning
	Carefully plan to minimize the decommissioning period and avoid delays.		
	Maintain a neat decommissioning site by removing rubble and waste materials regularly.		
	Rehabilitated areas should be monitored post-decommissioning and remedial actions implemented as required in compliance with the regulatory requirements at the time of decommissioning	Project Manager EO	Post-decommissioning
HEALTH AND SAFETY			
Impact Management Outcome: — To ensure communication with members of the public to promote safety awareness. — To prevent public access to construction sites and storage areas.			

ACTIVITY/ASPECT	IMPACT MANAGEMENT ACTIONS/MEASURES	RESPONSIBLE PERSON	PRIORITY TIMEFRAME
— To ensure safety for all onsite personnel.			
Indicator and Compliance Mechanisms: — Induction training and records. — Health, safety, environmental and community incident and complaints management system register. — Monitoring and audit reports. — Incident classification and reporting management procedure (to be developed). — PPE Register. — Occupational health and safety plan (to be developed). — Health and safety protocol (to be developed). — MHI (to be developed)			
Health and Safety	The construction and operation phase must be managed according to all the requirements of the Occupational Health and Safety Act 85 of 1993.	Site Manager Contractor EO	Construction Operation
	The appointed contractor will be responsible for the development of a comprehensive health and safety protocol, as well as safe work instruction method statements, that are to be used by employees in completing their tasks and which must be adhered to throughout the construction phase.	Contractor EO	Construction
	The Contractor is to appoint a health and safety officer to monitor safety conditions during construction activities.		
	All onsite personnel are required to undergo induction training and regular toolbox talks in order to raise awareness of health and safety.		Construction Operation
	The contractor is to ensure all employees are properly trained to use specific equipment or machinery and provide all staff with appropriate PPE and ensure they are trained in proper use thereof.		

ACTIVITY/ASPECT	IMPACT MANAGEMENT ACTIONS/MEASURES	RESPONSIBLE PERSON	PRIORITY TIMEFRAME
	Train all onsite personnel handling chemical or hazardous substances in the use of such substances and the environmental, health and safety consequences of incidents.		
	Provide onsite personnel with sufficient potable water for drinking.		
	Develop and implement a fall protection program that includes training in climbing techniques and use of fall protection measures; inspection, maintenance, and replacement of fall protection equipment; and rescue of fall-arrested workers, among others.		
	Restrict public access by ensuring fenced areas with gate access must remain locked after hours, during weekends and on holidays if staff is away from site.		
	All visitors to active work areas are to undergo site induction and be made aware of the risks associated with the site.		Construction
	Contractor's safety files must be in place and kept up to date.		
	All necessary health controls/ practices must be in place, e.g. ventilation of welding and painting areas.	Contractor/Operator Site Manager	Construction Operation
	An emergency response plan must be compiled prior to construction, which must include aspects such as appointment of emergency controller, provision of first aid, first responder contact numbers.	Contractor/Operator EO	
	Construction site facilities, as well as building and container facilities to comply with Occupational Health and Safety Act 85 of 1993, specifically the thermal, humidity, lighting and ventilation requirements of the Environmental Regulations for Workplaces.	Contractor/Operator Site Manager	
	Fuels stored on site must be situated in dedicated, demarcated and bunded areas.		

ACTIVITY/ASPECT	IMPACT MANAGEMENT ACTIONS/MEASURES	RESPONSIBLE PERSON	PRIORITY TIMEFRAME
	All normal procedures for working at heights, hot work permits, confined space entry, cordon off excavations etc to be in place before construction begins.	Contractor/Operator Site Manager	Construction Operation
	Suitable lighting to be provided including emergency lighting for safe building exit in the event of power failure.		
	All necessary good hygiene practices to be in place, e.g. provision of toilets, eating areas, infectious disease controls.	Site Manager Contractor EO	Construction Operation
	Policies and practice for dealing with known vectors of disease such as Aids, TB, COVID 19 and others and others must be developed and implemented.		
	Conduct awareness training for persons on site, safety induction to include animal hazards.		
	First aid and emergency response to consider the necessary anti-venom, anti-histamines, topical medicines etc.		
	Outside work must be stopped during thunderstorms. Lighting conductors may be required for the final installation, to be confirmed during design phase.		
	Fencing around the electrical infrastructure to adhere to SANS standard and Eskom Guidelines.		Pre-construction Construction
	Civil works and building structures must adhere to the National Building Regulations and building Standards Act 103 of 1977 SANS 10400 and other relevant codes		
	Civil design to take seismic activity into account.		
	Adhere to Eskom Operating Regulations for high voltage systems including access control, permit to work, safe work procedures, live work, abnormal and emergency situations, keeping records.	Site Manager Contractor	Pre-construction Construction

ACTIVITY/ASPECT	IMPACT MANAGEMENT ACTIONS/MEASURES	RESPONSIBLE PERSON	PRIORITY TIMEFRAME
		EO Operator	Operation
Facility emergencies	Emergency response plan for full operation and maintenance phase to be in place prior to beginning commissioning and to include aspects such as: – appointment of emergency controller, – emergency isolation systems for electricity, – emergency isolation and containment systems for electrolyte, – provision of PPE for hazardous materials response, – provision of emergency facilities for staff at the main office building, – provision of first aid facilities, – first responder contact numbers etc	Operator	Operation
	A detailed risk assessment of all normal operating and maintenance activities on site to be compiled, and form the basis of operating instructions, prior to commencing commissioning. .	Operator	Operation
	Material Safety Data Sheets (MSDSs) must be made available for all chemicals and substances on site	Site Manager Contractor Operator EO	Construction Operation
Fire risk	Suitable fire-fighting equipment must be available on site near source of fuel, e.g. diesel tank, generators, mess, living quarters, workshops etc	Site Manager Contractor Operator EO	Construction Operation
	Contractor should ensure that open fires on the site for cooking or heating are not allowed except in designated areas.		
	Smoking on site should be confined to designated areas.		

ACTIVITY/ASPECT	IMPACT MANAGEMENT ACTIONS/MEASURES	RESPONSIBLE PERSON	PRIORITY TIMEFRAME
	Contractor should ensure that construction related activities that pose a potential fire risk, such as welding, are properly managed and are confined to areas where the risk of fires has been reduced. Measures to reduce the risk of fires include avoiding working in high wind conditions when the risk of fires is greater. In this regard special care should be taken during the high risk dry, windy summer months.		
	Contractor should provide fire-fighting training to selected construction staff.		
	Grass cutting and fire breaks must be maintained around the BESS installations to prevent veld fires.	Site Manager Contractor Operator EO	Construction Operation
	No combustible materials to be stored in or near the batteries or electrical infrastructure. Ensure separation of site diesel tank, transformers from BESS and vice versa.		
	If persons are decanting fuels or dealing with other highly flammable materials care should be taken regarding possible static discharge, installations to be suitably designed and maintained.		
	A detailed Failure Modes and Effects Analysis (FMEA) / (Hazard and Operability Analysis (HAZOP) / Bowtie methodology must be developed during design at the component level and system levels.		
	An emergency response plan must be in place as referred to above and employee training on the plan must be provided.		
Risk associated with the BESS	Undertake adequate research during the planning and design phase to select the supplier and/contractor with the best technology that is internationally recognized and proven.	Project Manager	Pre-construction
	Solid state battery design must include abuse tests such as drop test, impact, rapid discharge etc. Propagation tests for systems, e.g. heat insulating materials between cells/modules must be conducted. Factory acceptance test prior to leaving manufacture must be conducted. Batteries are usually stored at 50% charge to prolong life but may be shipped fully discharged. This level of detail should be understood so as to assess the risk during transport and storage.		

ACTIVITY/ASPECT	IMPACT MANAGEMENT ACTIONS/MEASURES	RESPONSIBLE PERSON	PRIORITY TIMEFRAME
	The Facility to comply with prescribed design standards such as the BESS design codes from the USA and standards of practice that (e.g. UL9540, NFPA 855 and DNV GL RP 43).		
	The developer should ensure suitably competent transport companies are appointed. The company responsible for transportation should ensure: — Compliance with National Road Traffic Act Regulation 8 – dangerous goods.	Project Manager Contractor	Pre-construction
	Port Authorities should be alerted to the overall project and the hazardous nature of the contents of battery containers being imported. Note. If, as per one of the typical suppliers (Tesla) indications, the containers are classified as IMDG Class 9 – the containers will not receive any special care in the ports and may be stored next to flammables. Port emergency response in particular need training on mitigating battery hazards.	Project Manager Site Manager Contractor EO	Pre-construction
	Prior to bringing any containers into the country a full Emergency response plan should be in place for the full route from the ship to the site. Drivers must be trained in the hazards of containerized batteries. The emergency plan to determine and address: — What gases would be released in a fire and are there inhalation hazards. — Extinguishing has two important elements, put out fire and to provide cooling. Different approaches may be needed for small fire – e.g. put out, and for large fires e.g. cool with copious quantities of water. Note inert gases and foam may put out the initial fire but fail to control thermal runaway or to cool the batteries resulting in reignition. — What initial fire extinguishing medium should be used? — Are there any secondary gases or residues from use of extinguishers? — If water is appropriate, may need outside connections to inside sprinklers. — First responders need to know what media to use, especially if water totally unsuitable and if there are no connection points for water etc. — PPE to be specified including possible exposure to chemicals and fumes as well as radiate heat. — Containment of residues/water/damaged equipment.		
	Compile and implement a disposal plan that manages the handling of partially and/or fully charged damaged units, contaminated surfaces (e.g. HF residues) and other associated dangerously charged components.		

ACTIVITY/ASPECT	IMPACT MANAGEMENT ACTIONS/MEASURES	RESPONSIBLE PERSON	PRIORITY TIMEFRAME
	Develop and implement an emergency response plan that deals with all emergency responses applicable to the BESS, including during transportation.		
	For simplicity one transport route would be preferable. The route needs to be assessed in terms of responding local services, rest places for drivers, refuelling if required, break down services available etc.		
	Once an import route has been chosen, e.g. Richards Bay or Durban and along N2/N3/N11 etc, then the appointed transport company should ensure key emergency services on route could be given awareness training in battery fire/accident response.		
	SSL BESS must be transported in sealed packages that are kept upright, protected from movement damage etc.		
	The company in charge of the containers at each stage in the transport process needs to be very clear so that responsibility for the integrity of the load and protection of the persons involved in transfer and coordination of emergency response on-route. E.g. if purchased from Tesla where does hand over occur to the South African contractor / owner, at the factory door in USA, at the port in RSA, at the site fence. For example, who will be accountable if there's thermal runway event on a truck with a container that stops in a small town for driver refreshments.		
	Route selection to consider possible incidents along the way and suitable response, e.g. satellite tracking, mobile communication, 24/7 helpline response.		
	Standard dangerous goods requirements for Hazmat labels must be adhered to, Transport Emergency Card (Trem cards) must be carried/held, and the driver/s must be trained on the hazards of the load.		
	Handling protocols must be provided by the battery supplier.		
	Avoid stacking battery containers as physical space is not a constraint and therefore stacking of containers would not be required.	Site Manager Contractor Operator	Construction
	The hazardous nature of the electrical and battery equipment should be clearly indicated – e.g. Skull and Cross Bones or other signs.		Construction

ACTIVITY/ASPECT	IMPACT MANAGEMENT ACTIONS/MEASURES	RESPONSIBLE PERSON	PRIORITY TIMEFRAME
	BESS units should not be stored any closer to each other than they would be in the final installation so that propagation is prevented, i.e. laydown area needs to be considered.	EO	Operation
	Training of staff on general hazards on site must be conducted.		
	Ensure PPE for handling battery parts and other equipment on site is specified and worn when required.		
	Install a leak detection system with local alarms if regulated occupational exposure limits are exceeded etc prior to entry for inspection of battery containers.		
	Confined space entry procedures must be developed and adhered to when entering tanks and possibly battery containers.		
	Operating manuals must be provided including start-up, shut-down, steady state, monitoring requirements. Maintenance manuals with make safe, decontamination and repair procedures must also be in place. A maintenance schedule must be developed and implemented to include the required daily, weekly, monthly, annual etc maintenance.		
	Grass cutting and fire breaks must be maintained around the BESS installations to prevent veld fires.		
	Fire resistant barrier between the batteries and the PCS side if in the same container, or separate containers must form part of the design.		
	Drivers must be trained in the hazards of containerized batteries.		
	PPE to be specified including possible exposure to chemicals and fumes as well as radiate heat.		

ACTIVITY/ASPECT	IMPACT MANAGEMENT ACTIONS/MEASURES	RESPONSIBLE PERSON	PRIORITY TIMEFRAME
	Batteries to be packaged in a manner that ensures no short-circuiting during transport.		
	Consideration must be taken to prevent excessive vibration as battery internal may be damaged leading to thermal run-away during commissioning.		
	Suitable ingress protection level to be provided for electrical equipment, e.g. IP55 - 66. If air cooling into container, suitable dust filters to be provided.		
	An Emergency plan, from transport and construction phase, must be extended to operational phase. The plan must include the hazards of the electrically live system. This Plan must include procedures to address solid state container fires - extinguishing, ventilating, entering as appropriate or not.		
	PPE for container firefighting must include fire retardant, chemically resistant, nitrile gloves, antistatic acid resistant boots, fill face shields, BA sets.		
	A planned fire response to prevent escalation to an explosion or an environmental event must be developed.		
	Suitable supply of fire extinguishing medium and cooling medium must be provided. Consider fire water for cooling adjacent equipment for BESS units. Fogging nozzles can be used to direct smoke.		
	Ensure procedures in place for clean up after event Lingering HF and other toxic residues in the soil and on adjacent structures.		
	Procedures to be in place for Infrared (IR) scanning (or other suitable method) to determine if batteries are still smouldering / are sufficient cooled to handle as batteries may still be active some weeks after an event.		

ACTIVITY/ASPECT	IMPACT MANAGEMENT ACTIONS/MEASURES	RESPONSIBLE PERSON	PRIORITY TIMEFRAME
	Smoke or gas detector systems that are not part of the original battery container package, need to be linked to the main control panel for the entire system so that issues can be detected and responded to rapidly.		
	Consider modern lithium container design - put the PCS in another part of the container with a fire rated wall separating it from the battery. Alternately the PCS is another container altogether.		
	Suitable training of selected emergency responders who may be called out to the facility must be undertaken.		
	Acid resistant PPE (e.g. overalls, gloves, eyeglasses) to be specified for all operations in electrolyte areas.		
	Low voltage equipment (e.g. batteries) to be separated from high voltage (e.g. transmission to grid).		
	Personnel to be trained in line with IEE 1657 – 2018 (Recommended Practice for Personnel Qualifications for Installation and Maintenance of Stationary Batteries).		
	Consideration should be given, where required, for remote isolation devices or switching measures on equipment, plant and machinery to ensure the ability to shut off power to systems in use on site.		
	There needs to be careful thought given to procedures to be adopted before entering into the BESS or a container under normal circumstances (confined space) but particularly after a BMS shut down where there may be flammable or toxic gases present, a fire etc. Any situation could await those entering.		
	Effects of battery aging to be considered. Solid state battery life starts to be impacted above 40 deg C and significant impacts above 50 deg C with thermal run away starting at 65-70 deg		

ACTIVITY/ASPECT	IMPACT MANAGEMENT ACTIONS/MEASURES	RESPONSIBLE PERSON	PRIORITY TIMEFRAME
	C. BMS trips system at 50 deg C. Temperature monitoring to be in place. Regular infrared scanning. Data needs to be stored for trend analysis.		
	Provided portable equipment for calibration and for testing/verification of defective equipment, e.g. volt/current meters, infrared camera	Project Manager Site Manager Contractor EO	Operation
	Undertake a hazardous area classification of the inside of the container to confirm the rating of electrical equipment. Might be zone 2 due to possible leaks of electrolyte or generation of flammable gases under thermal run away.	Project Manager Site Manager Contractor EO	Operation
	Electrolyte areas to be fully bunded to 110% of largest tank, or more.	Site Manager Contractor	Operation
Decommissioning of facility	Develop and implement End of Life shutdown procedure including a risk assessment of the specific activities involved.	Operator EO	Decommissioning
	Re-purpose the solid-state batteries / containers and equipment with associated Environmental impact considered.	Operator EO	Decommissioning
	Undertake disposal according to local regulations and other directives such as the European Batteries Directive.	Operator EO	Decommissioning
	Applicants should seek the opinion from a waste consultant on how to correctly dispose of hazardous waste.	Operator EO	Decommissioning

ACTIVITY/ASPECT	IMPACT MANAGEMENT ACTIONS/MEASURES	RESPONSIBLE PERSON	PRIORITY TIMEFRAME
SOCIO-ECONOMIC ENVIRONMENT			
Impact Management Outcome: — To ensure that the negative socio-economic impacts are mitigated and managed. — To ensure that the positive socio-economic impacts are enhanced.			
Indicator and Compliance Mechanisms: — Induction training and records. — Health, safety, environmental and community incident and complaints management system register. — Monitoring and audit reports. — Incident classification and reporting management procedure (to be developed). — PPE Register. — Occupational health and safety plan (to be developed). — Health and safety protocol (to be developed). — Employment records and community engagement local enterprise development records.			
Socio-economic	Preparation and implementation of a Stakeholder Engagement Plan (SEP) prior to and during the construction phase.	Project Manager Contractor Operator	Pre-construction Construction Operation Decommissioning
	Where reasonable and practical, the proponent should appoint local contractors and implement a 'locals first' policy, especially for semi and low-skilled job categories. However, due to the low skills levels in the area, the majority of skilled posts are likely to be filled by people from outside the area.		
	Where feasible, efforts should be made to employ local contactors that are compliant with Broad Based Black Economic Empowerment (BBBEE) criteria.		
	Before the construction phase commences the proponent should meet with representatives from the Municipality to establish the existence of a skills database for the area. If such as database exists, it should be made available to the contractors appointed for the construction phase.		

ACTIVITY/ASPECT	IMPACT MANAGEMENT ACTIONS/MEASURES	RESPONSIBLE PERSON	PRIORITY TIMEFRAME
	The local authorities, community representatives, and organisations on the interested and affected party database should be informed of the final decision regarding the project and the potential job opportunities for locals and the employment procedures that the proponent intends following for the construction phase of the project.		
	Where feasible, training and skills development programmes for locals should be initiated prior to the initiation of the construction phase.		
	The proponent should implement a policy that no employment will be available at the gate.		
	The recruitment selection process should seek to promote gender equality and the employment of women wherever possible.		
	The proponent should liaise with the Municipality with regards the establishment of a database of local companies, specifically BBBEE companies, which qualify as potential service providers (e.g., construction companies, catering companies, waste collection companies, security companies etc.) prior to the commencement of the tender process for construction service providers. These companies should be notified of the tender process and invited to bid for project-related work.		
	Preparation and implementation of a Community Health, Safety and Security Plan (CHSSP) prior to and during the construction phase.		
	The SEP and CHSSP should include a Grievance Mechanism that enables stakeholders to report resolve incidents.		
	Where possible, the proponent should make it a requirement for contractors to implement a 'locals first' policy for construction jobs, specifically for semi and low-skilled job categories.		
	The proponent and contractor should develop a Code of Conduct (CoC) for construction workers. The code should identify which types of behaviour and activities are not acceptable. Construction workers in breach of the code should be subject to appropriate disciplinary action and/or dismissed. All dismissals must comply with the South African labour legislation. The CoC should be signed by the proponent and the contractors before the contractors move onto site. The CoC should form part of the CHSSP.		

ACTIVITY/ASPECT	IMPACT MANAGEMENT ACTIONS/MEASURES	RESPONSIBLE PERSON	PRIORITY TIMEFRAME
	The proponent and the contractor should implement an HIV/AIDS, COVID-19 and Tuberculosis (TB) awareness programme for all construction workers at the outset of the construction phase. The programmes should form part of the CHSSP.		
	The loss of high-quality agricultural land should be avoided and or minimised by careful planning of the final layout of the proposed WEF facilities, where possible.		
	The proponent should enter into an agreement with the local farmers in the area whereby damages to farm property etc. during the construction phase will be compensated for.	Project Manager Contractor	Pre-construction Construction
	Contractors appointed by the proponent must ensure that all workers are informed at the outset of the construction phase of the conditions contained in the Code of Conduct, specifically consequences of stock theft and trespassing on adjacent farms.		
	Contractors appointed by the proponent must ensure that construction workers who are found guilty of stealing livestock and/or damaging farm infrastructure are dismissed and charged. This should be contained in the CoC. All dismissals must be in accordance with South African labour legislation.		
	The proponent should implement a Grievance Mechanism that provides local farmers with an effective and efficient mechanism to address issues related to report issues related to damage to farm infrastructure, stock theft and poaching, construction related impacts, including damage to local gravel farm roads.		
	All farm gates must be closed after passing through.	Contractor	Construction
	No construction workers, with the exception of security personnel, should be permitted to stay over-night on the site.		
	As per the conditions of the Code of Conduct, in the advent of a fire being caused by construction workers and or construction activities, the appointed contractors must compensate farmers for any damage caused to their farms. The contractor should also compensate the fire-fighting costs borne by farmers and local authorities.		

ACTIVITY/ASPECT	IMPACT MANAGEMENT ACTIONS/MEASURES	RESPONSIBLE PERSON	PRIORITY TIMEFRAME
	The proponent should hold contractors liable for compensating farmers and communities in full for any stock losses and/or damage to farm infrastructure that can be linked to construction workers. This should be contained in the Code of Conduct to be signed between the proponent, the contractors, and neighbouring landowners. The agreement should also cover loses and costs associated with fires caused by construction workers or construction related activities	Project Manager Contractor	Construction
	Contractors appointed by the proponent should provide daily transport for low and semi-skilled workers to and from the site.	Contractor	Construction Post-construction
	Affected landowners should be notified about the timing of construction related activities in advance.	Project Manager Contractor ECO	Construction Decommissioning
	Timing of construction activities should be planned to avoid / minimise impact on access to the silos at Ermelo and Overvaal, specifically access along the De Emigratie Road and Overvaal Road. The critical period is from May to August.		
	The footprint associated with the construction related activities (access roads, construction platforms, workshop etc.) should be minimised.		
	An Environmental Control Officer (ECO) should be appointed to monitor the establishment phase of the construction phase.		
	All areas disturbed by construction related activities, such as access roads on the site, construction platforms, workshop area etc., should be rehabilitated at the end of the construction phase.		
	The implementation of a rehabilitation programme should be included in the terms of reference for the contractor/s appointed. The specifications for the rehabilitation programme should be drawn up by the Environmental Consultants appointed to manage the EIA.		

ACTIVITY/ASPECT	IMPACT MANAGEMENT ACTIONS/MEASURES	RESPONSIBLE PERSON	PRIORITY TIMEFRAME
	The implementation of the Rehabilitation Programme should be monitored by the ECO.		
	Ongoing communication with land owners and road users during construction period. This should be outlined in the SEP.		
	Maximise the number of employment opportunities for local community members.	Project Manager	Operation
	Implement training and skills development programs for members from the local community.		
	Maximise opportunities for local content and procurement.		
	The proponent should investigate providing training and skills development to enable locally based service providers to provide the required services for the operational phase.		
	Implement agreements with affected landowners.		
	To maximise the benefits and minimise the potential for corruption and misappropriation of funds the following measures should be implemented: — The proponents should liaise with the LM and GSDM to identify projects that can be supported by SED contributions. — Clear criteria for identifying and funding community projects and initiatives in the area should be identified. The criteria should be aimed at maximising the benefits for the community as a whole and not individuals within the community. — Strict financial management controls, including annual audits, should be instituted to manage the SED contributions.		
TRAFFIC MANAGEMENT			
Impact Management Outcome: — To ensure that the traffic impacts of the project are mitigated and managed.			
Indicator and Compliance Mechanisms:			

ACTIVITY/ASPECT	IMPACT MANAGEMENT ACTIONS/MEASURES	RESPONSIBLE PERSON	PRIORITY TIMEFRAME
— Induction training and records. — Health, safety, environmental and community incident and complaints management system register. — Monitoring and audit reports. — Incident classification and reporting management procedure (to be developed). — PPE Register. — Occupational health and safety plan (to be developed). — Health and safety protocol (to be developed). — Traffic and transportation management plan			
Traffic Management	The transport route/s between the origin of the turbine components and the facility may be National, Provincial or Local roads; and each authority will be required to provide the necessary permits for the transportation of any oversized or abnormally heavy components. It is recommended that an abnormal vehicle route management plan be undertaken when the port/s of entry of the tower components (masts, blades, rotor nacelles, generators, etc.) are known. These plans should include all aspects such as horizontal and vertical requirements along the routes, bridges along the route, speed limits, etc. These plans and the application for the abnormal permits is normally the responsibility of the logistics company that will transport the components to site. The following recommendations are made to improve the safety of the access intersections off the N11 and N2 during the construction phase. **N11 / D260** Should approval be granted by the relevant authority, provide additional warning signs as follows: — Install a Stop Signs (R1.1) on the D260 at the intersection with the N11 — Install a side road junction warning signs (W108) on the southern approach of the N11, located approximately 100m from the intersection. — Install truck crossing warning sign (W345) with the W108 sign. — Install truck crossing warning sign (W345) with the staggered junction warning sign located on the northern approach of the N11. **N2 / D1264**	Project Manager Contractor	Pre-Construction Construction

ACTIVITY/ASPECT	IMPACT MANAGEMENT ACTIONS/MEASURES	RESPONSIBLE PERSON	PRIORITY TIMEFRAME
	Should approval be granted by the relevant authority, provide additional warning signs as follows: — Install a Stop Signs (R1.1) on the D1264 at the intersection with the N2 — Install a truck crossing warning sign (W345) with the W108 sign located on the northern approach of the N2. — Install a truck crossing warning sign (W345) with the W107 junction warning sign located on the southern approach of the N2.		
	A permit must be obtained from the Mpumalanga Department of Public Works, Road and Transport for any abnormal loads transported.		
	Develop a Road Maintenance Plan to address any road quality impacts along the gravel access roads to/along the site. The repairs, if required, should be the responsibility of the Contractor and the Provincial road authority.		
	All drivers must adhere to all speed limits applicable to the roads used and made aware of the potential road safety issues.		Construction Decommissioning
	All unsurfaced roads must be regularly sprayed with water to prevent dust generation	Project Manager Contractor	Construction Decommissioning
	All vehicles that travel on-site must be roadworthy to ensure noise and emissions levels comply to national vehicle standards, thereby minimising noise/exhaust pollution.		
	All vehicles that travel on-site must not be overloaded, and abnormal vehicles must comply to relevant legislation for overweight loads, to ensure lowest possible road surface damage.		
	The delivery of components to and from the site can be staggered and trips can be scheduled to occur outside of peak traffic periods.		

7 MANAGEMENT PLANS

A number of generic management plans have been included in the EMPr. The plans included below provide an indication of the requirements that must be followed on the proposed construction and operation of the Camden I WEF. It must be noted that many of these plans can be updated at any stage depending on any changes that may occur on the site.

The following specific plans have been compiled:

- Waste Management Plan
- Alien Invasive Plant Management Plan
- Plant Rescue and Protection Plan
- Re-vegetation and Habitat Rehabilitation Plan
- Fire Management Plan
- Emergency Response Plan (ERP)
- Stormwater Management Plan
- Erosion Management Plan
- Traffic and Transport Management Plan
- Fauna Management Plan
- Avifaunal Management Plan
- Soil Management Plan
- Closure and Decommissioning management plan
- Hazardous Substance Management Plan
- Heritage and Palaeontological Management Plan
- HIV/AIDS Management Plan
- Grievance Mechanism
- Covid-19 Management

7.1 WASTE MANAGEMENT PLAN

7.1.1 WASTE HIERARCHY

A waste is any solid, liquid or contained gaseous material that is being discarded by, disposal, recycling, burning or incineration. Waste management options for a particular waste need to be considered according to the Waste Management Hierarchy (**Figure 7-1**) which reflects the relative sustainability of each of the options. One of the key principles underlying the waste management hierarchy is to ensure that waste is dealt with as high up the waste hierarchy as possible. Since all waste disposal options have some impact on the environment, the only way to avoid impact is not to produce waste in the first place, and waste reduction is therefore at the top of the hierarchy. Re-use, followed by recovery techniques (recycling, composting and generating energy from waste) follow, while disposal to landfill or by incineration (the worst options) are at the bottom of the hierarchy.

In deciding on the most appropriate disposal route, both environmental and economic costs and benefits need to be considered. This decision must be reached taking into account all the costs and impacts associated with waste disposal, including those associated with the movement of waste.

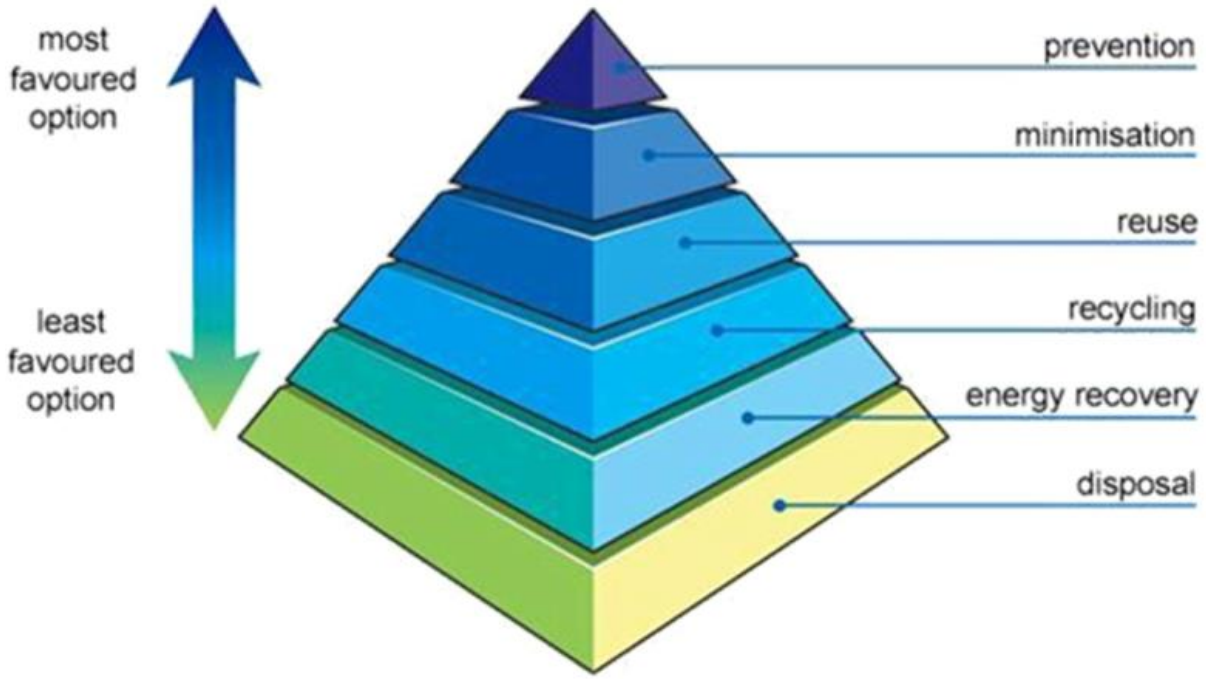


Figure 7-1: Waste Hierarchy

7.1.2 PROJECT STAGES

The purpose of this section is to assess the construction, operational processes of the proposed Camden I WEF in order to identify short comings, like raw materials procurement, infrastructure, employee training, health and safety, transportation, storage, compliance with legislative requirements, emergency preparedness and waste streams arising from an operation and its related activities, as well as the current waste management practices per waste stream. The assessment serves as the baseline against which any problem areas or gaps in waste management practises, process technology and environmental authorisations are identified and against which future performance objectives, activities and targets can be set.

The project stages are described below with the waste generation and management methods described in the corresponding tables below them including:

- Details on how waste will be managed during the construction and operational phases taking into consideration the waste management hierarchy;
- Details of the procedure for the separation of non-recyclable and recyclable waste;
- Details of the management of non-recyclable waste i.e. how waste will be stored on site during construction and operational phases, including the frequency for the removal of waste from the site and an indication of the landfill site where it will be disposed;
- Details for the management of recyclable waste e.g. the type of waste materials that will be recycled on site and the details pertaining to the offloading, sorting, handling, storage and collection procedures for the waste types (e.g. compaction and bailing, breaking of glass etc.); and
- The frequency for the removal of waste from the proposed development to where it will be finally managed must be included.

Waste Management at the project site will be undertaken in line with the EMPr to consider the correct disposal of general and hazardous waste generated on the project. **Table 7-1** describes the different waste products that the proposed project will produce, as well as the various options to dispose of them. Waste will mainly be generated during the construction phase. During operation, contractors are only on the site for limited amount of time as and when maintenance is required.

Table 7-1: Waste Management Options

WASTE	TYPE OF WASTE	MANAGEMENT OPTIONS
Hydrocarbons (Contaminated soil)	Hazardous	Fuel and oil spillages can be a source of contamination of water sources and the soil. Management options include: — Using spill kits to clean any spillages; — Ensure storage facilities are maintained and meet industry regulations; — Transportation and storage of fuel must be regulated and correctly managed according to the EMPr; — All hazardous waste is to be disposed of at a registered hazardous landfill (safe disposal certificates must be obtained).
Contaminated Personal Protective Equipment (PPE)	Hazardous	PPE can be contaminated during handling of hydrocarbons. Management options include: — Store contaminated PPE in hazardous waste skips along the servitude; — Ensure contaminated PPE is disposed of at a registered hazardous landfill (safe disposal certificates must be obtained).
General waste	General	General waste (inorganic matter) can be disposed of as per normal and form part of the municipal waste management system. Management options include: — Ensure waste is stored securely in refuse bins; and — Co-ordinate waste removal with the general removal of waste from the contractor laydown area .
Food waste	General	Food waste is generated as site personnel take their meals on the construction site. Management options include: — Store any waste and packaging into a labelled food waste bin; — Co-ordinate waste removal with the removal of waste from the contractor laydown area; and — Co-ordinate waste removal with the general removal of waste.

7.2 ALIEN INVASIVE PLANT MANAGEMENT PLAN

The purpose of this Plan is to provide a framework for the management of alien and invasive plant species during the construction and operation of the project within the areas affected by construction and operation activities. The broad objectives of the plan include the following:

- Ensure alien plants do not become dominant in parts or the whole site through the control and management of alien and invasive species presence, dispersal and encroachment.
- Managing and maintaining the ecosystem in a near-natural state and restoring and/or rehabilitating the ecosystems to such a state.
- Develop and implement a monitoring and eradication programme for alien and invasive species.
- Promote the natural re-establishment and planting of indigenous species in order to retard erosion and alien plant invasion.

Mitigation and management measures include, but are not limited to the following:

- Monitor for early detection, to find species when they first appear on site. This should be as per the frequency specified in the management plan, and should be conducted by an experienced botanist. Early detection should provide a list of species and locations where they have been detected. Summer (vegetation maximum growth period) is usually the most appropriate time, but monitoring can be adaptable, depending on local conditions.

- Monitor for the effect of management actions on target species, which provides information on the effectiveness of management actions. Such monitoring depends on the management actions taking place. It should take place after each management action.
- Monitor for the effect of management actions on non-target species and habitats.
- Stockpiles must be kept clear of weeds and alien vegetation growth by regular weeding.
- Alien vegetation and the spread of exotic species on the site will need to be controlled.
- The contractor must be responsible for implementing a programme of weed control (particularly in areas where soil has been disturbed); and grassing of any remaining stockpiles to prevent weed invasion.
- Herbicide use shall only be allowed according to contract specifications. The application shall be according to set specifications and under supervision of a qualified technician. The possibility of leaching into the surrounding environment shall be properly investigated and only suitable herbicides shall be used.
- The use of pesticides and herbicides on the site must be discouraged as these can impact on important pollinator species of indigenous vegetation. Use of these should only be permitted where absolutely necessary.
- Six monthly inspections of the development area must take place for the emergence of invader species.
- Correct rehabilitation with locally indigenous species.
- Monitoring programme to ensure that rehabilitation efforts are successful to ensure that risks such as erosion, spread of exotic species and the edge effect are avoided.
- Constant maintenance of the area to ensure re-colonisation of floral species.
- Ensure regular removal of alien species, which may otherwise jeopardise the proliferation of indigenous species.

7.3 PLANT RESCUE AND PROTECTION PLAN

The purpose of the plant rescue and protection plan is to implement avoidance and mitigation measures, in addition to the mitigation measures included in the EMPr to reduce the impact of the development of the project on listed and protected plant species and their habitats, and to provide guidance on search and rescue of species of conservation concern.

Mitigation and management measures include, but are not limited to the following:

- The location of all transplanted rescued plants must be recorded, along with the identity of the plant.
- As a scientific control, an equal number of non-transplanted individuals of the same species, within similar habitats, should be monitored in the same way as the transplanted specimens. This will provide comparative data on the survival of wild populations relative to transplanted plants.
- If populations of threatened plant species are found to occur on site, annual monitoring of population health should take place. This should be appropriate to the species concerned.
- Vegetation clearing must only commence after a walk down has been conducted by a suitably qualified person and the necessary permits obtained.
- Vegetation clearing to be kept to a minimum. No unnecessary vegetation to be cleared.
- Vegetation removal must be limited to the construction site and must be removed only as it becomes necessary rather than removing all the vegetation throughout the site at once.
- Materials must not be delivered to the site prematurely which could result in additional areas being cleared or affected.
- No vegetation to be used for firewood.
- Gathering of firewood, fruit, medicinal plants, or any other natural material onsite or in areas adjacent to the site is prohibited unless with prior approval of the ECO.
- Construction site office and laydown areas must be clearly demarcated and no encroachment must occur beyond demarcated areas.
- All natural areas impacted during construction must be rehabilitated with locally indigenous plant species or grassed accordingly.

- Soil stockpiles must not become contaminated with oil, diesel, petrol, garbage or any other material, which may inhibit the later growth of vegetation in the soil. Spillage can result in a loss of soil functionality thus limiting the re-establishment of flora.
- It is a legal requirement to obtain permits for specimens or protected species that will be lost due to construction of the project.
- A detailed pre-construction walk-through survey will be required during a favourable season where possible, to locate any individuals of protected plants, as well as for any populations of threatened plant species. This survey must cover all footprint areas, including final road alignments (final infrastructure layout). The best season is early to late Summer if possible, taking administrative processes into account, but will be influenced by recent rainfall and vegetation growth.
- It is possible that some plants lost to the development can be rescued and planted in appropriate places in rehabilitation areas, but the description and appropriateness of such measures must be included in a Plant Rescue Plan. Any such measures will reduce the irreplaceable loss of resources as well as the cumulative effect. Note that Search and Rescue is only appropriate for some species and that a high mortality rate can be expected from individuals of species that are not appropriate to transplant.
- Prior to construction commencing, a Plant Rescue Plan must be compiled to be approved by the appropriate authorities as part of the EMPr approval.
- For any plants that are transplanted, annual monitoring should take place to assess survival. This should be undertaken as per the frequency specified in the management plan and be undertaken by a qualified botanist. The monitoring programme must be designed prior to translocation of plants and should include control sites (areas not disturbed by the project) to evaluate mortality relative to wild populations.
- No collecting or poaching of any plant species.

RESCUED PLANTS

- The location of all transplanted rescued plants must be recorded, along with the identity of the plant.
- The health / vigour of each transplanted individual should be monitored as per the frequency and duration specified in the management plan.
- As a scientific control, an equal number of non-transplanted individuals of the same species, within similar habitats, should be monitored in the same way as the transplanted specimens. This will provide comparative data on the survival of wild populations relative to transplanted plants.

THREATENED SPECIES

- If populations of threatened plant species are found to occur on site, annual monitoring of population health should take place. This should be appropriate to the species concerned

FOR PERMITTING PURPOSES, THE FOLLOWING FLORA SURVEY IS REQUIRED PRIOR TO CONSTRUCTION ACTIVITIES TAKING PLACE:

- Detailed floristic walk-through survey of all footprint areas in order to document composition, especially of protected species. It is suggested this be undertaken after an appropriate time-period after rainfall, where possible, to allow emergence of any species of potential concern. The survey must also cover all footprint areas, including final road alignments. Renewable energy projects similar to the one assessed here tend to have high fluidity in terms of layout and technology, due to the current rapid evolution of the technology, which allows more efficient deployment of infrastructure. However, this means that “final” layouts regularly change. The walk-through survey:
  - must assess the footprint that will be constructed – if this changes then the new footprint areas must be subject to a walk-through survey in full.
  - must be undertaken in the correct season, if possible, taking administrative processes into account.
  - must be adequately resourced to ensure it is done properly.
  - must be undertaken by a competent botanist with knowledge of the area.

7.4 RE-VEGETATION AND HABITAT REHABILITATION PLAN

The purpose of the rehabilitation plan is to ensure that areas cleared or impacted during construction activities are rehabilitated with a plant cover that reduces the risk or erosion from these areas as well as restores some ecosystem function. The purpose of the rehabilitation plan for the site can be summarised as follows:

- Achieve long-term stabilisation of all disturbed areas to minimise erosion potential.
- Re-vegetate all disturbed areas with suitable local/indigenous plant species or grass/crop.
- Minimise visual impact of disturbed areas.
- Ensure that disturbed areas are safe for future uses.

Mitigation and management measures include, but are not limited to the following:

- Rehabilitation Plan must be compiled by an approved ecologist prior to achieving COD and prior to the start of decommissioning.
- All management actions associated with rehabilitation must be recorded after each management action has taken place.
- All rehabilitated areas should be monitored to assess vegetation recovery. This should be for a minimum of three years after post-construction rehabilitation but depends on the assessed trajectory of rehabilitation (whether it is following a favourable progression of vegetation establishment or not – this depends on the total vegetation cover present, and the proportion that consists of perennial growth of desired species). For each monitoring site, an equivalent comparative site in adjacent undisturbed vegetation should be similarly monitored. Monitoring data collection should include the following:
  - total vegetation cover and height, as well as for each major growth form;
  - species composition, including relative dominance;
  - soil stability and/or development of erosion features;
  - representative photographs should be taken at each monitoring period.
- Monitoring of rehabilitated areas should take place at the frequency and for the duration determined in the rehabilitation plan, or until vegetation stability has been achieved.
- Re-vegetation must aim to accelerate the natural succession processes so that the plant community develops in the desired way, i.e. promote rapid vegetation establishment.
- Re-vegetation of disturbed surfaces must occur immediately after construction activities are completed. This must be done through seeding with suitable crop or locally indigenous species typical of the representative botanical unit.
- Re-vegetation of the disturbed site is aimed at approximating as near as possible the existing vegetative conditions prevailing prior to construction.
- Seeds from surrounding seed banks can be used for re-seeding.
- Rehabilitation must be executed in such a manner that surface run-off will not cause erosion of disturbed areas.
- Planting of indigenous tree species in areas not to be cultivated or built on must be encouraged.
- Habitat destruction must be limited to what is absolutely necessary for the construction of the infrastructure, including the construction of new roads. In this respect, the recommendations from the Biodiversity Assessment must be applied strictly. Personnel must be adequately briefed on the need to restrict habitat destruction, and must be restricted to the actual construction area.
- Monitoring programme to ensure that rehabilitation efforts are successful to ensure that risks such as erosion, spread of exotic species and the edge effect are avoided.

7.5 FIRE MANAGEMENT PLAN

The purpose of this plan is to address firefighting requirements throughout the construction of the project and to preserve and protect human life as well as tangible goods and equipment in the event of a fire.

Mitigation and management measures include, but are not limited to the following:

- All construction camps shall be provided with portable fire extinguishing equipment, in accordance with all relevant legislation and must be readily accessible.
- The Contractor shall take specific measures to prevent the spread of veld fires, caused by activities at the campsites. These measures must include appropriate instruction of employees about fire risks and designated smoking areas.

- Fire prevention facilities must be present at all storage facilities. No open fires shall be allowed on site under any circumstance. No cooking on open fires shall be done onsite to prevent runaway fires.
- The Contractor shall have operational fire-fighting equipment available on site at all times. The level of firefighting equipment must be assessed and evaluated through a typical risk assessment process.
- Emergency numbers for local police and fire department etc. must be placed in a prominent area.
- Firefighting equipment must be placed in prominent positions across the site where it is easily accessible. This includes fire extinguishers, a fire blanket as well as a water tank.
- All construction staff must be trained in fire hazard control and firefighting techniques. Translators are to be used where necessary.
- All flammable substances must be stored in dry areas which do not pose an ignition risk to the said substances.
- Smoking must only be conducted in demarcated areas.
- Firefighting equipment must be regularly maintained by a suitable service provider.

7.6 EMERGENCY RESPONSE PLAN

Appropriate resources must be provided to respond to accidental and emergency situations for operations and activities during construction and operation phases. The procedures will include plans for addressing training, resources, responsibilities, communication and all other aspects required to effectively respond to emergencies associated with their respective hazards.

This Emergency Response Plan (ERP) is intended as a practical working document for the proposed Camden I WEF. The purpose of this document is to provide the basic guidelines on how to respond to potential emergency situations that may arise during project activities. These potential emergency situations include medical emergencies and fires.

All activities associated with the project will require site-specific emergency response plans to mitigate impacts, which meet or exceed all applicable regulations.

The objectives of this plan are as follows:

- Protect the communities and the environment through the development of emergency response strategies and capabilities.
- Set out the framework for hazard identification in order to define procedures for response to the situations including the development of contingency measures.
- Structure a process for rapid and efficient response to and manage emergency situations during the construction and operational phases of the project.
- Assign responsibilities for responding to emergency situations.

The ERP must take the incident procedures referred to in Section 30 of the NEMA into account.

7.6.1 ROLES AND RESPONSIBILITIES

Roles, responsibility and authority shall be defined, documented and communicated in order to facilitate effective emergency response through implementation of the EPRP.

The table below outlines roles and responsibilities related to each position.

Emergency Response representative(s)
— Actively participate in the facilities planning, implementation and reviewing of the sites EPRP. — Ensure all staff members are aware of the procedures outlined in the EPRP. — Setting up regular practical training schedules (drills) to ensure that all staff are prepared encase of an emergency. — Report any incidents that occur to senior management staff and/or the relevant authorities. — Appoint an Emergency Response (ER) team which includes an appropriate first aid representative and a fire warden. — Ensure that the appointed ER team undergo the correct training. — Appoint an appropriate Emergency Coordinator.
First Aid representative(s)

— Ensuring the first aid box is properly stocked to meet all foreseeable incidents which may occur. — Ensure that the boxes are properly safeguarded, and that First Aiders name appears on the box. — Should any activity involve hazardous chemical substances, or any other specific first aid emergencies, this must be brought to the attention of the emergency coordinator. — Ensure the first aid certificate is current. — Ensure that there is always a first aider available at each shift.
Fire warden(s)
— Ensure that the firefighting equipment is regularly serviced. — Attend the relevant firefighting training. — Report any unserviceable or damaged fire-fighting equipment to the ER. — Ensure the firefighting certificate is current. — Ensure that there is always a firefighter available at each shift.
Emergency Co-ordinator
— Ensure that an update of the EPRP is kept on file and is easily accessible in case of an emergency. — Ensure that all staff have been issued with the correct Personal Protective Equipment (PPE). — Ensure that a list of emergency telephone numbers, including those of the Emergency Response team, are visible to all staff at a number of locations around the facility. — In the case of an emergency, the emergency coordinator is responsible for undertaking roll call at the designated Assembly points.

7.6.2 EMERGENCY COMMUNICATIONS AND COORDINATION PLAN

In an emergency situation where there is an immediate threat to communities, personnel or the environment, the Project Manager will be notified immediately. The Project Manager will dispatch the Emergency Response Coordinator (or suitably tasked person) who will determine the appropriate plan of action depending on the severity of the emergency, the people affected, and the need to evacuate.

If there is a developing emergency or unusual situation, where an emergency is not imminent, but could occur if no action is taken, the Project Manager (or if the Project Manager is absent the Environmental Officer) is to be informed immediately. Once the emergency or unusual situation has been managed, the correct incident/near miss must be reported to the General Manager.

If an emergency situation poses a direct threat to communities in the area, the Environmental Officer and/or Social Officer will advise persons in the vicinity of the emergency to evacuate due to the potential risk. The appropriate government authorities will immediately be notified of such an emergency evacuation. The Emergency Response Coordinator (or suitably tasked person) will be tasked with responding to the potential risk. Should the emergency situation be such that it can be managed by Camden I WEF, equipment and personnel will be deployed to the maximum extent necessary, so as to prevent/minimise potential risks.

7.6.3 RESPONSE TO INCIDENTS

An incident is any occurrence that has caused, or has the potential to cause, a negative impact on people, the environment or property (or a combination thereof). It also includes any significant departure from standard operating procedures. The reporting and investigation of all potential and actual incidents that could have a detrimental impact on human health, the natural environment or property is required so that remedial and preventive steps can be taken to reduce the potential or actual impacts because of all such incidents.

Any incident must immediately be reported to the relevant authorities and all the necessary documentation must be completed and submitted to the relevant authorities within the prescribed timeframes.

The actions resulting from any formal or informal investigations will be used to update the EMPr.

7.6.4 BUDGET FOR EMERGENCY RESPONSE

Costs for emergency response and management will be included in the capital expenditure budget for the construction phase and operational budget for the operational and decommissioning phases of the project.

7.6.5 VERIFICATION

An environmental emergency response system will be developed for the execution of emergency drills that will include the following, inter alia:

- Fire Drills
- Emergency Evacuation Drills
- Medical and Environmental Drills.

Reporting and monitoring requirements for the plan will include:

- Monthly inspections and audits
- Quarterly reporting of accidents/ incidents
- Reporting at the time of the incident and monthly spill reporting developed by the Environmental and Quality, Health and Safety departments
- Bi-annual emergency response drills
- Annual reporting on training

Emergency response drills and reporting will be maintained by the Project Manager and will provide information regarding required revisions to training or the emergency response actions. Each incident reported will be reviewed and investigated upon occurring. Actions will be identified where possible to improve the site's overall response to emergencies. Updates/revisions that are necessary to protect worker or community health and safety will be implemented immediately after approval by the Project Manager. On a bi-annual basis, Key Performance Indicators (KPIs) will be compared against past-performance and analysed for trends to determine if there are areas for improvement. Changes because of the trend analysis and identified areas for improvement will be implemented following the project's change management system as required.

7.7 STORMWATER MANAGEMENT PLAN

The main principles in stormwater management include:

- Confine or divert any unpolluted water to a 'clean' water system, and polluted water to a 'dirty' water system;
- 'Clean' and 'dirty' water systems must be designed and constructed to prevent cross-contamination between the 'clean' and 'dirty' water systems; and
- Appropriate maintenance and management of storm water related infrastructure.

The proposed water systems or infrastructure are to be designed to prevent any potential contamination of natural water resources in the area.

A Storm Water Management and Surface Water Protection Plan cannot be compiled until the detailed designs are complete, which will only take place in the event that the project is identified as a preferred bidder as part of the REIPPP (or where a third party off-take agreement can be concluded). It is stipulated in this EMPr that a Storm Water Management Plan must be compiled before any construction commences and implemented during the construction phase. This plan must indicate how all surface runoff generated as a result of the project and associated activities (during both the construction and operational phases) will be managed prior to entering any natural drainage system or wetland and how surface water runoff will be retained outside of any demarcated buffer zones and subsequently released to simulate natural hydrological conditions.

A Storm Water Management Plan will be required to support the relevant facility processes. A stormwater management plan must be developed in the preconstruction phase, detailing the stormwater structures and management interventions that must be installed to manage the increase of surface water flows directly into any natural systems. The stormwater control systems must be inspected on an annual basis to ensure these are functional. Effective stormwater management must include effective stabilisation (gabions, reno mattresses or similar) of exposed soil and the re-vegetation of any disturbed water courses.

7.8 EROSION MANAGEMENT PLAN

Exposed and unprotected soils are the main cause of erosion in most situations. Therefore, this erosion management plan and the revegetation and rehabilitation plan are closely linked to one another and should not operate independently but should rather be seen as complementary activities within the broader environmental management of the site and should therefore be managed together. This Erosion Management Plan addresses the management and mitigation of potential impacts relating to soil erosion, including:

- Material stockpiled for long periods (2 weeks) must be retained in a bermed area.
- Stockpiles not used in three (3) months after stripping must be seeded, or covered with hessian or similar material to prevent dust and erosion.
- Sensitive areas need to be identified prior to construction so that the necessary precautions can be implemented.
- Any vegetation clearance must be phased to ensure that the minimum area of soil is exposed to potential erosion at any one time.
- Areas to be cleared must be clearly demarcated and this footprint strictly maintained.
- Silt fences and erosion control measures must be implemented in areas where these risks are more prevalent.
- Wind screening and stormwater control must be undertaken to prevent soil loss from the site.
- Other erosion control measures that can be implemented are as follows:
  - Brush packing with cleared vegetation
  - Mulch or chip packing
  - Planting of vegetation
  - Hydroseeding / hand sowing
- All erosion control mechanisms need to be regularly maintained.
- Seeding of topsoil and subsoil stockpiles to prevent wind and water erosion of soil surfaces.
- Re-vegetation of disturbed surfaces must occur immediately after construction activities are completed. This must be done through seeding with indigenous grasses.
- No impediment to the natural water flow other than approved erosion control works is permitted.
- To prevent stormwater damage, the increase in stormwater run-off resulting from construction activities must be estimated and the drainage system assessed accordingly.

MONITORING

The site must be monitored continuously during construction and operation in order to determine any indications of erosion. If any erosion features are recorded as a result of the activities on-site the Environmental Officer (during construction) or Site Manager (during operation) must:

- Assess the significance of the situation.
- Take photographs of the soil degradation.
- Determine the cause of the soil erosion.
- Inform the contractor/operator that rehabilitation must take place and that the contractor/operator is to implement a rehabilitation method statement and management plan.
- Monitor that the contractor/operator is taking action to stop the erosion and assist them where needed.
- Report and monitor the progress of the rehabilitation weekly and record all the findings in a site register.
- All actions with regards to the incidents must be reported on a monthly compliance report which will be submitted to the Competent Authority (during construction) and kept on file for consideration during the annual audits (during construction and operation).

The Contractor (in consultation with an appropriate specialist) must:

- Select a system/mechanism to treat the erosion.
- Design and implement the appropriate system/mechanism.

- Monitor the area to ensure that the system functions like it should. If the system fails, the method must be adapted or adjusted to ensure the accelerated erosion is controlled.
- Continue monitoring until the area has been stabilised.

7.9 TRAFFIC AND TRANSPORT MANAGEMENT PLAN

The purpose of a Traffic and Transportation Management Plan is to address regulatory compliance, traffic management practices, and protection measures to help reduce impacts related to transportation and the construction of temporary and long-term access within the vicinity of the project site. The objectives of this plan include the following:

- To ensure compliance with all legislation regulating traffic and transportation within South Africa National, Provincial, Local and associated guidelines.
- To avoid incidents and accidents while vehicles are being driven and while transporting personnel, materials, and equipment to and from the project site.
- To raise greater safety awareness in each driver and to ensure the compliance of all safe driving provisions for all the vehicles.
- To raise awareness to ensure drivers respect and follow traffic regulations.
- To avoid the deterioration of access roads and the pollution that can be created due to noise and emissions produced by equipment, machinery, and vehicles.

Mitigation and management measures include, but are not limited to the following:

- All vehicles used during the transport of materials and in the construction activities are required to be roadworthy per the National Road Traffic Act (NRTA) and display all pertinent certificates as required.
- All vehicles travelling to and from the site shall adhere to all laws imposed by the law enforcement agencies, and shall comply with any requests made by the law enforcement officials.
- For each convoy of abnormal vehicles/loads a designated safety officer shall be nominated. All abnormal vehicles and loads to be transported are required to have a valid permit before any trip is begun.
- The route must be assessed to determine if any structures or vegetation need to be temporarily or permanently relocated so as to avoid damage to the load as well as public and private property during the trips.
- A designated transport coordination manager must be appointed to oversee and manage the traffic safety officers. Additionally, the designated transport coordination manager must inform and keep up-to-date the interested and affected parties of all the activities taking place that may have a direct impact on them.
- A traffic safety officer shall be nominated to make all the necessary arrangements to maintain the required traffic measures for the duration of the project as outlined in the "Standard Specifications for Road and Bridge Works for State Road Authorities,' 1998 edition. The safety officer shall liaise daily with the transportation coordination manager to keep them apprised of the state of all the traffic arrangements.
- All construction vehicles that are entering the site shall also be available via radio or telephone communication to the transport coordination manager. So that in the event of an emergency, all vehicles can be accounted for.
- All vehicles shall comply with the posted speed limits on public roads as well as the speed limits within the development. For additional speed limits that are imposed on the construction traffic, refer to the South African Road Traffic Signs Manual (SARTSM), Volume 2, June 1999 for the restrictions.
- All construction traffic shall comply with the legal load requirements as outlined in the National Road Traffic Act and National Road Traffic Regulations.
- Construction traffic entering the site along public roads must be limited to times when peak hour traffic can be avoided. The peak traffic occurs during 7h00 to 8h30, and 16h00 to 17h30.
- The South African Road Traffic Signs Manual (SARTSM), Volume 2, June 1999 is to be used for all traffic during the construction activities of the proposed project.
- During periods of high construction traffic entering and exiting the site, it is recommended that flagmen help direct the traffic. This will enable the safe movement of construction and public traffic at the entrance and reduce the number of potential conflicts.

7.10 FAUNA MANAGEMENT PLAN

The purpose of this fauna management plan is to protect species, habitats and eco-system services, ensuring no net reduction to any critically endangered / endangered species and no net loss of any critical habitats (as defined by IFC Performance Standard 6) whilst minimising disturbance to other species and habitats to the extent practicable. This plan provides a strategy to control potential impacts on fauna during the construction and operation of the Camden II WEF.

7.10.1 MANAGING IMPACT ON FAUNA

SNAKE FIND AND HANDLING:

During construction, especially clearing of vegetation, it is likely that snakes will be encountered onsite. The following steps need to be undertaken in the event of a snake onsite:

- All work in that area is to cease;
- The site foreman/ site supervisor is to be notified;
- Snake handling will be undertaken by suitably trained and certified onsite personnel. The site supervisor or foreman needs to contact the relevant onsite personnel, who will safely remove and release the snake at a suitable habitat.

The following measures need to be communicated to all staff to ensure both human and snake safety:

- Under no circumstances may any site staff handle snakes without the proper snake handling training.
- All staff are to be provided with the correct Personal Protective Equipment (PPE) (e.g. snake gaiters and safety boots) to limit the potential for snake bites.
- Signage identifying the service provider appointed for snake handling must be erected around site. It is recommended that an individual onsite undergoes snake handling training to ensure that if an emergency arises it can be dealt with immediately.
- Intentional harming of snakes is prohibited onsite.

MAMMALS AND REPTILES

During the construction phase of the project the following mitigation measures need to be implemented and adhered to at all times to ensure that the impacts to fauna is managed and mitigated where possible.

WALK DOWN PRIOR TO CONSTRUCTION

Prior to the start of any construction or associated activities in areas of potential biodiversity concern, the Contractors will carry out a walk-though over the area accompanied by the ECO. The objective is to identify any sensitive habitats including potential for species of conservation interest (i.e. to consider the presence of any rare species of fauna, but establish possible risk of snake bites; inspect tree cavities for bats, etc.) that may be directly or indirectly affected by the proposed works.

Any important and significant habitats must be suitably demarcated and made a no-go area.

LIMIT THE DEVELOPMENT FOOTPRINT

- The development area must be clearly defined and marked off accordingly. All No- Go areas must be demarcated and warning signs prohibiting access erected.
- Areas to be cleared must be clearly marked in the field to eliminate unnecessary clearing/ disturbance.

LIMIT DISTURBANCE

- The extent of clearing and disturbance to the native vegetation must be kept to a minimum so that the impact on fauna and their habitats is restricted.

- Where roads pass right next to major water bodies provisions must be made for (where required) the fauna such as toads to pass under the roads by using culverts or something similar.
- Vehicles to adhere to speed limits at all times.
- The intentional harming and killing of animals will be prohibited through on-site supervision and worksite rules.
- Any litter onsite needs to be cleaned up immediately to prevent it being blown into the environment surrounding the development site.

INSPECTIONS AND MONITORING

- The following inspections and monitoring need to be undertaken during the construction phase:
- Observation of vegetation clearing activities by the Environmental Control Officer (ECO).
- Recording faunal fatalities to monitor success of relocation efforts.
- Regular monitoring of construction activities by the designated onsite personnel and the ECO.
- The ESHS team will collate details and investigate all Project-related wildlife complaints and incidents including instances of unauthorised hunting, poaching, bush trade, disturbance of breeding sites and injuries / fatalities. Corrective actions will be instigated where needed to avoid recurrence.

TRAINING

The contents of the Fauna Management Plan must be communicated to the staff through the induction training. On the job training can also be undertaken through the use of Environmental Toolbox Talks. All training must be undertaken as outlined in the relevant Training Procedures

Examples of Toolbox Talks include:

- Snakes bites
- Snake handling
- No-Go areas
- Encountering fauna onsite
- Poaching

7.11 AVIFAUNAL MANAGEMENT PLAN

The purpose of this avifaunal management plan is to provide mitigation and management measures onsite that to minimise the impacts on the priority bird species that potentially occur onsite. A number of the priority species are associated with the aquatic features on the site.

7.11.1 DESIGN MANAGEMENT PROCEDURES

- Ensure that key areas of conservation importance and sensitivity are avoided (as determined by the avifaunal specialist assessment).
- Siting turbines close together to minimise the development footprint (where possible and having complied with the technical and financial layout requirements).
- Where possible, installing transmission cables underground (subject to habitat sensitivities and in accordance with existing best practice guidelines for underground cable installation).
- Marking overhead cables using deflectors and where possible avoiding use over areas of high bird concentrations, especially for species vulnerable to collision

7.11.2 CONSTRUCTION MANAGEMENT PROCEDURE

The following mitigation and management measures must be implemented for the displacement of priority species due to disturbance during the construction phase:

- A site- specific construction management Plan (CEMP) must be implemented, which gives appropriate detailed description of how construction activities must be conducted. All contractors are to adhere to the CEMP and must apply good environmental practice during construction. This must be done by an Avifaunal Specialist.
- Providing adequate briefing for site personnel and, in particularly sensitive locations. Personnel must be adequately briefed on the need to restrict habitat destruction, and must be restricted to the actual building sites. An ecologist must be appointed during the construction period.
- An ECO must be appointed to oversee activities and ensure that the site-specific CEMP is implemented and enforced. Prior to construction, an avifaunal specialist must conduct a site walkthrough, covering the final layout footprint and final turbine positions, to identify any nests/breeding/roosting activity of priority species, as well as any additional sensitive habitats. The results of which may inform the final construction schedule in close proximity to that specific area, including abbreviating construction time, scheduling activities around avian breeding and/or movement schedules, and lowering levels of associated noise.
- The appointed ECO must be trained by an avifaunal specialist to identify the potential priority species as well as the signs that indicate possible breeding by these species. The ECO must then, during audits/site visits, make a concerted effort to look out for such breeding activities of Red Data species, and such efforts may include the training of construction staff to identify Red Data species, followed by regular questioning of staff as to the regular whereabouts on site of these species. If any of the Red Data species are confirmed to be breeding (e.g. if a nest site is found), construction activities within 500m of the breeding site must cease, and an avifaunal specialist is to be contacted immediately for further assessment of the situation and instruction on how to proceed.
- No-go areas must be enforced, while associated infrastructure (roads, powerlines and substations) must be avoided where possible in these areas.
- Habitat destruction must be limited to what is absolutely necessary for the construction of the infrastructure, including the construction of new roads.
- During the construction phase, an avifaunal specialist must conduct surveys/exploration of the site. The aim will be to locate nest sites, so that these may continue to be monitored during the construction and operation phase.
- Measures to control noise and dust must be applied according to current best practice in the industry.
- Maximum use must be made of existing access roads and the construction of new roads must be kept to a minimum.
- Implementing an agreed post-development monitoring programme.

7.11.3 MONITORING

Monitoring of Red listed species nests (if any) to assess the impact of the construction activities.

7.12 SOIL MANAGEMENT PLAN

Some of the most significant impacts on soil properties occur as a result of activities associated with construction. Construction activity can have adverse impacts on soil in a number of ways by:

- Covering soil with impermeable materials, effectively sealing it and resulting in significant detrimental impacts on soils' physical, chemical and biological properties, including drainage characteristics.
- Contaminating soil as a result of accidental spillage or the use of chemicals.
- Over-compacting soil through the use of heavy machinery or the storage of construction materials.
- Reducing soil quality, for example by mixing topsoil with subsoil.
- Wasting soil by mixing it with construction waste or contaminated materials, which then have to be treated before reuse or even disposed of at landfill as a last resort.

Careful management of topsoil and subsoil is an important aspect of sustainable use of materials that are being stripped. Without a proper Soil Resource Plan there is the risk of losing, damaging or contaminating valuable soil resources. The purpose of this Soil Management Plan is to outline principles for soil management to ensure the

integrity of the resource during and post-construction. This plan must be read together with the Emergency Response Plan in order to minimise the risk of contamination of soils.

7.12.1 PRINCIPLES FOR SOIL MANAGEMENT

THE CORRECT HANDLING OF TOPSOIL

- Before beginning work on site, topsoil must be stripped from all areas that will be disturbed by construction activities. Appropriate equipment must be used and appropriate work practices must be implemented for soil stripping as mishandling soil can have an adverse effect on its properties.
- Topsoil must be stripped in the driest condition possible.
- Topsoil must be retained on site in order to be used in site rehabilitation. The correct handling of the topsoil layer is in most cases the key to rehabilitation success.
- It is important that the correct depth of topsoil is excavated in order to ensure good plant growth. If excavation is too shallow, then an important growth medium for new seedlings could be lost. If excavation is too deep, this could lead to the dilution of the seed and nutrient rich topsoil with deeper sterile soil.
- Topsoil and subsoil layers must never be mixed. The mixture of topsoil with the deeper sterile soil hinders the germination of seeds which are buried too deep in the soil layer. Mixture of soil layers also leads to the dilution of nutrient levels which are at highest concentration within the topsoil, resulting in lower levels of nutrients available for new seedlings.
- To enable soil to be reused on site at a later stage, it needs to be stored in temporary stockpiles to minimise any damage or loss of function. Stockpiles must not be higher than 2m. Alternatively, topsoil berms can be created on the site boundaries. There are a number of important considerations when creating stockpiles - including soil erosion, pollution to watercourses and the risk of flooding. These will be affected by the size, height and method of forming stockpiles, and how they are protected and maintained.
- Topsoil must be stored separately from other soil in heaps until construction in an area is complete.
- The duration of topsoil storage must be minimised as far as possible. Storing topsoil for long periods leads to seed bank depletion following germination during storage, and anoxic conditions develop inside large stockpile heaps.
- All stockpiles must be positioned away from drainage lines.
- Sediment fencing must be erected downslope of all stockpiles to intercept any sediment and upslope runoff must be diverted away from stockpiles.

STRIPPING OF SUBSOIL

- The following protocols must be followed when stripping subsoil:
- On many sites subsoil will not need to be stripped but merely protected from damage. However, on other sites it might need to be temporarily removed. Where subsoil is required to be stripped, this must be undertaken before commencement of construction from all areas that are to be disturbed by construction activities or driven over by vehicles.
- Subsoil stripping depths depend on the correct identification of the sub-soil types on an ad-hoc basis, where no formal survey data exists.
- Subsoil must be stripped in the driest condition possible.
- To enable soil to be reused on site at a later stage, it needs to be stored in temporary stockpiles to minimise any damage or loss of function. There are a number of important considerations when creating stockpiles - including soil erosion, pollution to watercourses and the risk of flooding. These will be affected by the size, height and method of forming stockpiles, and how they are protected and maintained.
- All stockpiles must be positioned away from drainage lines.
- Sediment fencing must be erected downslope of all stockpiles to intercept any sediment and upslope runoff must be diverted away from stockpiles.

7.13 HERITAGE AND PALAEONTOLOGICAL MANAGEMENT PLAN

The purpose of this document is to provide a response guideline should archaeological sites, palaeontological sites or graves become exposed during ground altering activities within the Camden I WEF Project area. Heritage resources are protected in terms of the National Heritage Resources Act, Act 25 of 1999 (NHRA).

7.13.1 CHANCE FIND PROCEDURE

The following procedural guidelines must be considered in the event that previously unknown heritage resources are exposed or found during the construction of the Camden I WEF Project area.

HERITAGE RESOURCES

The possibility of the occurrence of subsurface finds cannot be excluded. Therefore, if during construction any possible finds such as stone tool scatters, artefacts or bone and fossil remains are made, the operations must be stopped, and a qualified archaeologist must be contacted for an assessment of the find. A short summary of chance find procedures is discussed below and monitoring guidelines for this procedure are provided in Section 7.13.2.

This procedure applies to the developer's permanent employees, its subsidiaries, contractors and subcontractors, and service providers. The aim of this procedure is to establish monitoring and reporting procedures to ensure compliance with this policy and its associated procedures. Construction crews must be properly inducted to ensure they are fully aware of the procedures regarding chance finds as discussed below:

- If during the pre-construction phase, construction, operations or closure phases of this project, any person employed by the developer, one of its subsidiaries, contractors and subcontractors, or service provider, finds any artefact of cultural significance or heritage site, this person must cease work at the site of the find and report this find to their immediate supervisor, and through their supervisor to the senior on-site manager.
- It is the responsibility of the senior on-site Manager to make an initial assessment of the extent of the find and confirm the extent of the work stoppage in that area.
- The senior on-site Manager will inform the ECO of the chance find and its immediate impact on operations. The ECO will then contact a professional archaeologist for an assessment of the finds who will notify the SAHRA.
- Employ reasonable mitigation measures in accordance with the requirements of SAHRA.
- Only recommence operations once impacts have been mitigated.

MONITORING PROGRAMME FOR PALEONTOLOGY – TO COMMENCE ONCE THE EXCAVATIONS / DRILLING ACTIVITIES BEGIN.

If fossils occur in the footprint of any section of WEF footprint, associated grid infrastructure, access roads or all other associated infrastructure, they can be removed, and the project can continue. The Fossil Chance Find Protocol must be followed during removal as follows:

- When excavations begin the rocks and must be given a cursory inspection by the environmental officer or designated person. Any fossiliferous material (trace fossils, fossils of plants, insects, bone or coalified material) should be put aside in a suitably protected place. This way the project activities will not be interrupted.
- Photographs of similar fossils must be provided to the developer to assist in recognizing the fossil plants, vertebrates, invertebrates or trace fossils in the shales and mudstones. This information will be built into the EMP's training and awareness plan and procedures.
- Photographs of the putative fossils can be sent to the palaeontologist for a preliminary assessment.
- If there is any possible fossil material found by the developer/environmental officer then the qualified palaeontologist sub-contracted for this project, should visit the site to inspect the selected material and check the dumps where feasible.

- Fossil plants or vertebrates that are considered to be of good quality or scientific interest by the palaeontologist must be removed, catalogued and housed in a suitable institution where they can be made available for further study. Before the fossils are removed from the site a SAHRA permit must be obtained. If required annual reports must be submitted to SAHRA as required by the relevant permits.
- If no good fossil material is recovered, then no site inspections by the palaeontologist will be necessary. A final report by the palaeontologist must be sent to SAHRA once the project has been completed and only if there are fossils.
- If no fossils are found and the excavations have finished, then no further monitoring is required.

The Grievance Procedure and Guidance will apply to any stakeholder complaints relating to cultural heritage and chance finds;

- Chance find recording shall include the following:
- Incident Notification;
- Incident Report;
- Incident (Chance Find) Investigation Report – e.g. detailing corrective actions, with digital images, maps and plans showing any locations that are no-go, limited access or present risks of further chance finds.

7.13.2 TRAINING, INSPECTION AND MONITORING

Since it is not practical to have a regular monitoring presence over the construction period by either an archaeologist or palaeontologist, environmental awareness training must be conducted by the EO for all contractors and subcontractors. The training must include, as a minimum, the following:

- Identifying potential features of heritage significance;
- Procedures for dealing with heritage resources discovered on site;
- Applicable Legislation pertaining to the protection of heritage resources; and
- The importance of protecting heritage resources.

The contents of the Heritage Management Plan must be communicated to the staff through the induction training. On the job training can also be undertaken through the use of Environmental Toolbox Talks.

As most heritage resources occur below surface, all earth-moving activities need to be routinely monitored in case of accidental discoveries. The greatest potential impacts are from construction activities. The ECO should monitor all such activities weekly. If any heritage resources are found, the chance finds procedure must be followed as outlined above.

7.14 HAZARDOUS SUBSTANCES MANAGEMENT PLAN

Hazardous substances are chemicals or materials that can cause acute or chronic harm to health, be it humans or the environment. The key potential sources of impact related to the management of hazardous chemical substances (HCS) and fuel during construction relate to the risk of accidental release of hydrocarbons to the environment, accidental exposure to workers, and fire and explosion risks.

Potential impacts associated with these risks, if poorly managed, include:

- Impact to soil and/or groundwater, which may result in degradation of the resource and requirement for remedial action;
- Impacts on pastoralist livelihoods due to contamination of pasture or water resources and consequent impacts to their, health, livelihood and animals;
- Impacts on human health & safety due to either direct exposure or through fire/explosion;
- Gas emissions associated with the combustion of fuel, are mainly compounds of nitrogen, carbon including very small traces of sulphur and particulate matter; and
- Fugitive emissions from HCS & fuel storage.

The purpose of this Hazardous Substances Management Plan (HSMP) is to provide a framework for the management of hazardous substances onsite during the construction and operation of the Camden I WEF:

- Ensure the handling and storage of hazardous substances are in accordance with relevant standards;

- To ensure that the storage and handling of chemicals and hydrocarbons on-site does not cause pollution to the environment or harm to persons;
- To ensure that the storage and maintenance of machinery onsite does not cause pollution of the environment or harm to persons.

7.14.1 HAZARDOUS SUBSTANCES MANAGEMENT PROCEDURE

A plan for managing the transportation, delivery, storage and handling of hazardous substances onsite is detailed below. A method statement detailing the specific storage and handling practices during construction must be prepared by the Contractor prior to the commencement of construction.

REGISTER OF HAZARDOUS SUBSTANCES

Contractors shall establish inventories or registers of hazardous substances on site. The inventory is to be updated when new hazardous substances are introduced to the workplace or the use of existing hazardous substances is discontinued. Both the chemicals' register and the Material Safety Data Sheets (MSDSs) must be readily available at a central location or near where the chemicals are being stored or used.

MSDS

It is standard practice that an MSDS is provided by the manufacturer or supplier of all hazardous substances. An MSDS is required for all chemicals and substances on site. These MSDSs are to be made available to all parties affected by the use or storage of the chemical. MSDSs are the key to communicating hazards and safe handling practices for chemicals. In addition, MSDS information is to be made available to all employees.

DELIVERIES

Transport of all hazardous substances must be in accordance with the relevant legislation and regulations. Contractors are responsible for identifying and securing any necessary permits for any proposed bulk fuel storage arrangements. The supplier will fill contractors fuel tanks; fuelling is the responsibility of the licensed contractor who will be supervised by the storage/work area supervisor. No 'black-market' or 'grey-import' fuels shall be used. All fuels purchased must be legitimate and subject to required duties and taxes.

Prior to fuel transfer the operator will verify that: all fuel transfer hoses have been connected properly and couplings are tight; transfer hoses are not obviously damaged; fuel transfer personnel are familiar with procedures; for fuelling stations, personnel are located at both the fuel truck and fuel transfer tank(s) and have the ability to shut off fuel flow manually; a means of communication has been established between the two people transferring fuel; and a high liquid level shutoff device can be substituted for the person at the delivery tank, in which case operation of the shutoff will be verified each time it is used; The fuel contractor will clean up and report any accidents or spills immediately to the project EHS team.

ENVIRONMENT AND OCCUPATIONAL HEALTH AND SAFETY

- Storage facilities will have the applicable Material Safety Data Sheets (MSDS) available;
- Smoking will be strictly prohibited from any areas where fuel loading operations take place;
- Appropriate signage will be used to identify potential spill risks;
- Any accidental damage to containment structures will be inspected immediately and appropriate repairs undertaken. Record and report all significant fuel, oil, hydraulic fluid or electrolyte spills or leaks. Any release of fuels or other substance must be cleaned up;
- All used fuel / oil products will be collected in tanks marked "Waste Oil"; and
- All hydrocarbon associated wastes will be managed in line with the Waste Management Plan.

MATERIALS STORAGE

- All chemicals, fuels and other hazardous materials are to be stored in designated and bunded areas, where the bunded area is impermeable and is impervious to the stored substance as per the requirements of SABS 089:1999 Part 1. The bunded area will contain 110% volume of the largest container stored.

- Bunds and service area platforms to be cleaned and maintained regularly.
- SABS approved Spill kits must be made available on-site for the clean-up of spills and leaks of contaminants. The relevant construction crew members must be trained in their use.
- Keep a record of all hazardous substances stored on site. Clearly label all the containers storing hazardous waste.
- The storage of flammable and combustible liquids such as oils will be in designated areas which are appropriately bunded, and stored in compliance with Material Safety Data Sheets (MSDS) files and applicable regulations and safety instructions.
- Chemical and hydrocarbon storage facilities shall be covered to prevent rainfall ingress into secondary containment units and well-ventilated
- Any storage and disposal permits/approvals which may be required must be obtained, and the conditions attached to such permits and approvals will be compiled with.
- An effective monitoring system must be put in place to detect any leakage or spillage of all hazardous substances during their transportation, handling, installation and storage.

SPILL AND LEAK MANAGEMENT AND PREVENTION

- In the event of a major spill or leak of contaminants, the relevant authorities must be informed. The relevant construction crew members must be trained in their use.
- Spilled cement must be cleaned up immediately and, stored as hazardous waste and disposed of at a suitably licensed hazardous waste disposal facility.
- Routine servicing and maintenance of vehicles must not be undertaken onsite (except for emergencies). If repairs of vehicles must take place, an appropriate drip tray must be used to contain any fuel or oils.
- Any water that collects in bunds must not be allowed to stand. Should the water be contaminated, it is to be removed and treated prior to discharge, or disposed of as hazardous waste. Clean stormwater contained within the bunds may be reused.
- No chemicals must be stored or vehicle maintenance undertaken within 100m of wetlands or drainage lines.
- Construction machinery must be stored in an appropriately sealed area. If machinery cannot be stored in a sealed area then a drip tray must be used to prevent spillage from any leaks.
- As far as practicable, all equipment servicing / maintenance shall be undertaken within designated workshop areas.
- All generators on site, including generators that are not in use must be located in a bunded area or on a drip tray.
- Bunded areas and drip trays must be maintained on a regular basis.
- Diesel generators and water pumps shall be located in secondary containment areas or shall be self-contained to prevent loss of fuels and oils;
- Precautions must be in place to limit the possibility of oil and other toxic liquids from entering the soil or clean stormwater system.
- Upon completion of construction, the area must be cleared of potentially polluting materials.
- Emergency response planning will be managed via the Emergency Preparedness and Response Plan.

7.14.2 OPERATIONAL PHASE

During the operational phase of the project limited hazardous substances and chemicals will be stored onsite. During maintenance activities, contractors will need to produce a method statement detailing the specific storage and handling practices. The following measures need to be implemented onsite during the operational phase of the project.

- Hazardous substances must be stored in sealed containers within a clearly demarcated designated area.
- Care must be taken to ensure that spillage of oils and other hazardous substances are limited during maintenance. Handling of these materials must take place within an appropriately sealed and bunded area.
- Should any accidental spillage take place, it must be cleaned up according to specified standards regarding bioremediation.

- The storage of flammable and combustible liquids such as oils will be in designated areas which are appropriately bunded, and stored in compliance with Material Safety Data Sheets (MSDS) files and applicable regulations and safety instructions.
- Used oils and chemicals:
  - Appropriate disposal must be arranged with a licensed facility in consultation with the administering authority;
  - Waste must be stored and handled according to the relevant legislation and regulations.

7.14.3 INSPECTION, MONITORING AND TRAINING

Fuel storage areas must be inspected regularly to ensure bund stability, integrity, and function.

The contents of the Hazardous Substances Management Plan must be communicated to the staff through the induction training. On the job training can also be undertaken through the use of Environmental Toolbox Talks. All training must be undertaken as outlined in the relevant Training Procedure.

Examples of Toolbox Talks include:

- Storage of hazardous substances
- Working with hazardous substances
- Management of hazardous waste
- Spill Prevention

7.15 GRIEVANCE MECHANISM

7.15.1 GRIEVANCE MECHANISM - EXTERNAL

A grievance mechanism is a tool used to address affected communities' concerns and complaints and is an important pillar of the stakeholder engagement process, since it creates opportunities for companies and communities to identify problems and discover solutions together. The Project proponent can benefit from understanding community concerns and complaints and addressing them through all stages of project development.

Where it is anticipated that a new project will involve ongoing risk and adverse impacts on surrounding communities, the project proponent is required to establish a grievance mechanism to receive and facilitate resolution of the affected communities' concerns and complaints about the proponent's environmental and social performance. The grievance mechanism should be scaled to risks and adverse impacts of the project, address concerns promptly, use an understandable and transparent process that is culturally appropriate and readily accessible to all segments of the affected communities, and do so at no cost to communities and without retribution. The mechanism should not impede access to judicial and administrative remedies.

This Grievance Mechanism has been developed to receive and facilitate grievances and provide a solution to these concerns and grievances. The aim of the grievance mechanism is to ensure that grievances or concerns raised by local landowners, staff and or communities are addressed in a manner that:

- Provides accessible avenues for all internal and external stakeholders to contact management of the facility;
- Provides a predictable, transparent, and credible process to all parties, resulting in outcomes that are seen as fair, effective, lasting and dealt with in a timely manner;
- Builds trust as an integral component of staff and broader community relations activities; and
- Enables more systematic identification of issues and trends affecting a project, facilitating corrective action and pre-emptive engagement.

The aim of this Grievance Mechanism is to address grievances in a manner that does not require a potentially costly and time-consuming legal process. This grievance mechanism also ensures alignment with local and international best practices in human resources development and stakeholder engagement.

OBJECTIVES

The objectives of the grievance mechanism include:

- To be respectful of complainant culture, values, traditions and views;
- To resolve grievances at the local level and in a timely manner;
- To identify the root causes of grievances and address systemic issues;
- To provide a process that is dialogue based, with the complainant and the Proponent cooperating in the investigation, discussion, resolution and announcement of the grievance and result;
- To ensure fair, equitable and consistent outcomes to resolve grievances;
- To enhance and continuously improve the ability of the Proponent to fairly address community concerns.

SCOPE AND RESPONSIBLE PARTIES

A grievance mechanism is primarily for the community to raise relevant concerns about the Project / Proponent's activities and is to be implemented throughout the life cycle of the Project (i.e. throughout assessment, construction, and implementation phases).

WSP will only be involved in the stakeholder engagement and grievance management process for the assessment phase. The Project proponent and the Contractor will be responsible for implementation of the grievance mechanism throughout the construction phase.

GRIEVANCE REDRESS PROCEDURE

This grievance mechanism sets out the following steps to be taken to resolve grievances.

1. **Register grievance**
    - A grievance can be submitted in a written letter, e-mail, fax, or raised verbally in person or via telephone.
    - Grievances raised during the assessment process are to be submitted to the EAP via the details provided as per the stakeholder engagement notifications. The EAP will notify the Proponent of the grievance.
    - Grievances raised during the implementation process are to be submitted to the Proponent / Contractor via the relevant details, which are to be made available to registered stakeholders prior to commencement of onsite activities, as well as via site notice boards.
    - In the event that a complaint is raised verbally, the responsible person must obtain the approval of the complainant as to the documented complaint (by way of signature of the Receipt of Grievance Form). Should the complainant have literacy issues, the responsible person may request that a third party (friend / relative of complainant) is available to verify / approve the contents of the documented complaint to the satisfaction of the complainant.
    - The submission should include the nature of the grievance, the date when it occurred and the name and contact details of the complainant.
    - Grievances will be accepted anonymously or through a third party (e.g. unions, NGOs, local authorities, community representatives, etc.).
    - Individuals have the right to request that their name be kept confidential throughout the grievance process.
    - As men and women may communicate their grievances differently, and also have different types of grievances, the complainant may request that their grievance is processed by a female / male representative. In the event that such a request is made, the Proponent, as far as reasonably practicable, will accommodate this request.
2. **Within a Week (7 days) of receiving the grievance the Proponent will:**
    - Enter the grievance into the Proponent's records that track grievances;
    - Assess the grievance according to specific criteria and if necessary, develop an appropriate approach for the particular grievance;

- Provide a written acknowledgement of the grievance including the name of the responsible person to contact about progress, an explanation of the steps that will be taken to investigate, discuss and resolve the grievance, and an anticipated timetable for processing the grievance.

3. Processing the Grievance:

The responsible person will:

- Identify the parties involved;
- Clarify issues and concerns raised by the grievance through direct dialogue;
- Classify the grievance in terms of seriousness according to the gravity of the allegation, the potential impact on an individual's or a group's welfare and safety, or the public profile of the issue;
- Convene a staff group with expertise relative to the grievance;
- Determine the method for resolving the grievance – the most common approaches, not excluding others, will be:
    i. The Proponent proposes a solution;
    ii. The Proponent and aggrieved party decide together the solution;
    iii. The Proponent and aggrieved party defer to a third party for mediation / arbitration.
- Gather views of other stakeholders, including those of the Proponent and if necessary, an agreed neutral technical opinion;
- Determine initial options that parties have considered and explore various approaches for settlement;
- Conduct the process as agreed;
- Close the grievances by signing the Complaint Close-Out Form (i.e. that the grievance has been resolved satisfactory to both parties).
- The Proponent may "close" the grievance even if the complainant is not satisfied with the outcome. This option can be pursued by the Proponent in the case that the complainant is unable to substantiate a grievance, or if there is an obvious speculative or fraudulent attempt. In such situations, the Proponent's efforts to investigate the grievance and to arrive at a conclusion will be well documented and the complainant advised of the situation. The Proponent (or contractors working for the Proponent) will not dismiss grievances based on a cursory review and close them in their grievance record unless the complainant has been notified and had the opportunity to provide supplementary information / evidence;
- Keep a record that tracks the progress and communications for each grievance.

4. Processing Timeline

- The Proponent will aim to bring the grievance to a resolution within 30 days of receiving the grievance. The grievance shall be acknowledged within 7 days by the responsible person, and responded to within 30 days. If the matter takes longer than 30 days to resolve, the complainant will be informed through dialogue and in writing, of the reason for the delay, any advances or difficulties encountered and the anticipated new resolution date.

RECOURSE

If the complainant is not satisfied with the outcome of the grievance process the aggrieved party has the right to address the grievance via the judicial system.

MANAGING, TRACKING, RECORDING GRIEVANCES – INTERNALLY

In terms of managing grievances the Proponent will:

- appoint a senior manager to oversee the Grievance Mechanism. Another member of staff will be appointed to carry out the day-to-day work in this area and involve specialist staff and external parties, where required, who may need to be consulted to resolve a grievance.

- maintain a register of grievances. All activities, including registration of the grievance and the progress through to outcome will be recorded.
- ensure that grievances and resolutions are communicated internally to all staff through monthly reports.
- launch the Grievance Mechanism and regularly remind communities that it is available to use.

Contractors are expected to follow this Grievance Procedure. Contractor shall be proactive and available to participate in the grievance resolution processes. Contractor participation is intended to allow for specific contractor grievances to be addressed efficiently.

Contractors shall ensure that all individual contractor employees are aware of the Grievance Procedure. Contractors will receive any grievance from an individual or community and notify the Proponent thereof immediately.

Contractors shall not make any direct agreements or resolution with local communities without prior coordination of such actions with the Proponent.

The Contractor's community relations team (or equivalent) will attend all coordination meetings requested by the Proponent, as required. The contractor community relations management (or equivalent) will report to the Proponent's management team on a regular basis – in regards to social incidents and community relations issues. The Proponent, or their representative, will conduct regular audits on contractors to ascertain compliance with this Grievance Procedure.

7.15.2 GRIEVANCE MECHANISM – INTERNAL

The Proponent will establish a Grievance Mechanism that will set out the process for workers to communicate their grievances. The grievance mechanism will be available to workers of the Proponent, Contractors and subcontractors.

A Code of Conduct will set out practice measures that the construction workers will have to adhere to, to ensure a positive relationship is built and maintained with the landowners and local communities.

7.16 HIV/AIDS MANAGEMENT PLAN

The HIV/AIDS management plan will be compiled in the event that the project is identified as a preferred bidder as part of the REIPPPP (or a suitable private off-take agreement is concluded).

The measures must be implemented on site during the construction and operational phases:

- Promote a non-discriminatory and supportive environment for people affected by HIV & AIDS.
- HIV-positive employees must be protected against unfair discrimination, victimisation or harassment.
- Sensitive issues surround HIV & AIDS and it is important to handle matters in a discreet and private manner
- Promote awareness and education programmes to inform employees about HIV & AIDS which will enable them to protect themselves and others against infection by HIV.
- Involve employees and their representatives in the planning and implementation of awareness and counselling programmes, especially as peer educators and counsellors.

7.17 COVID -19 MANAGEMENT

This Plan serves to outline generic measures to adopt and implement to reduce the risk of Covid-19 transmission and will be reviewed and updated as necessary based on changes in terms of applicable legislation and regulations.

PREVENTION AND RESPONSE

A dedicated asignee with the responsibility to identify and implement actions to mitigate the effects of COVID-19 on the company and community should be assigned.

INFORMATION

Information dissemination and training are an effective way to reduce the risk for both the company and the general public.

COVID-19 symptoms include: fever, tiredness, difficulty breathing, dry cough, chills, repeated shaking with chills, muscle pain, headache, sore throat, and new loss of taste or smell. Some patients may have nasal congestion, runny nose, or diarrhoea. Symptoms may appear two to 14 days after exposure to the virus.

EMPLOYEE QUESTIONNAIRE

To prevent potentially infected staff from entering the workplace and infecting co-workers, a short questionnaire could be used. Workers should only report to work if they answer "no" to all the questions.

The following is an example:

- Have you, in the last two weeks, been in close contact with a person who has COVID-19?
- Have you, in the last two weeks, been in a country/region with a high number of cases of COVID-19?
- Do you have a fever?
- Have you used medications such as paracetamol or aspirin to suppress fever in the last 24 hours?
- Are you coughing (even mildly)?
- Do you currently experience shortness of breath?

PREVENTION METHODS

SICK PERSONS TO STAY AT HOME

Workers requested to stay away from work in cases where they exhibit any COVID-19 symptoms or have been in close contact with a confirmed COVID-19 patient during the previous 14 days. Workers who do not feel well should seek immediate medical advice. An employee who works while evidencing mild COVID-19 symptoms can risk spreading this infectious disease to others.

COUGH HYGIENE

To reduce the risk of infected persons spreading the virus by coughing and sneezing, workers are to be instructed to follow the cough etiquette outlined below:

- Cover the mouth and nose with a tissue when coughing or sneezing and dispose of the used tissue in a wastebasket.
- When no tissue is available, cough or sneeze into the upper sleeve or elbow, not into the hands.
- Clean hands after coughing or sneezing, preferably by thorough water-soap handwashing, following the recommendations of health organizations. If soap and water are not available, use a hand sanitizing gel.

SOCIAL DISTANCING

To prevent person-to-person infection, it is important to minimize direct contact as much as possible. The contractor is to inform workers about the hazards of close contacts, including with direct co-workers, and promote alternative behaviours, such as maintaining safe distances and using alternatives for handshakes.

HAND SANITATION

Promote frequent and thorough water-soap hand washing and provide enough places for workers to wash their hands. If soap and running water are not immediately available, provide alcohol-based hand rubs containing at least 60% alcohol. Ensure that these facilities are sufficient in number and are available close to the work area.

CLEANING AND DISINFECTING

Frequently – and at least daily - clean touched surfaces, such as tables, light switches, appliances, countertops, handles, desks, phones, keyboards, toilets, taps, sinks, and so forth. Use the cleaning agents that are routinely used in these areas and follow the directions on the labels. For multiuse equipment, clean after every use. Workers are to be instructed to clean their work areas and equipment at the end of each shift. Equipment and instructions on how to do this are to be provided

8 CONCLUSION

ENERTRAG is proposing the development of a Camden Renewable Energy Complex within the vicinity of the Camden Power Station in Mpumalanga. **This report is specific to the Camden I WEF (up to 200MW)**. The proposed Camden I WEF is located south of Ermelo (near Camden), in Mpumalanga and falls within the Msukaligwa Local Municipality of the Gert Sibande District Municipality.

This S&EIA process considered the biophysical location of the proposed development, as well as a feasibility assessment by the proponent, which *inter alia* served to identify site options that would be optimal for energy production and grid interconnection. As discussed previously, the purpose of the proposed Camden I WEF is to contribute to the national energy targets of diversification of energy supply and the promotion of clean energy. The project will also aid in overcoming the power shortages that are currently faced in the country. Other socio-economic benefits would result from the proposed project, including the increase of energy supply, employment opportunities and local economic development.

In terms of NEMA, everyone (i.e. all persons engaging in any component of this project) is required to take reasonable measures to ensure that they do not pollute the environment. 'Reasonable measures' includes informing and educating employees about the environmental risks associated with their work and training them to operate in an environmentally responsible manner.

Should the above-mentioned environmental guidelines and mitigation measures be adopted, it is anticipated that the negative environmental impacts of the proposed WEF will be mitigated adequately. The Proponent and the selected Contractor shall appoint relevant personnel, as well as an independent ECO, to monitor the site periodically throughout construction to ensure that the required environmental controls are in place and working effectively. During operation and maintenance the area specific Environmental Manager and EO, with the support of the maintenance supervisor, will monitor environmental controls.

It is therefore the opinion of the EAP that provided this project is mitigated, as per the mitigation and management measures outlined in this EMPr, the project will result in impacts that should not negatively affect the environment. It is the Proponent's responsibility to ensure that this EMPr is made binding on the contractor by including the EMPr in the contract documentation. The contractor must thoroughly familiarise himself with the requirements of the EMPr and appoint an EO to oversee the implementation of the EMPr on a day-to-day basis.

Parties responsible for transgression of this EMPr must be held responsible for any corrective actions that may need to be undertaken. Parties responsible for environmental degradation through irresponsible behaviour/negligence must receive penalties.

WSP is of the opinion that the project can proceed, provided that the outlined mitigation measures of the S&EIA process and this EMPr are implemented effectively.

If you have any further enquiries, please feel free to contact:

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APPENDIX

A EAP CURRICULUM VITAE

ASHLEA STRONG, MEM, EAP

Principal Consultant (Planning & Advisory Services), Environment & Energy

Years with the firm

8

Years of experience

18

Professional qualifications

EAPASA

Areas of expertise

Auditing

ESIR

Energy

Environmental Control

Infrastructure

Mining

Training

Waste Management

CAREER SUMMARY

Ashlea is a Principal Consultant with 18 years' experience in the environmental field. She currently provides technical and strategic expertise on a diverse range projects in the environmental management field, including environmental scoping and impact assessment studies, environmental management plans, waste and water management, as well as the provision of environmental management solutions and mitigation measures

Ashlea has been involved in the management of a number of large EIAs specifically within the energy sector such as the Medupi Power Station, and Pebble-Bed Modular Reactor (PBMR) and numerous Transmission Powerlines. She also has significant environmental auditing experience and expertise having undertaken over 70 compliance audits.

Ashlea holds a Masters in Environmental Management; a BTech (Nature Conservation), and a National Diploma (Nature Conservation). She is also a Registered Environmental Assessment Practitioner.

EDUCATION

Masters in Environmental Management, University of the Free State, South Africa	2006
B Tech, Nature Conservation, Technikon SA, South Africa	2001
National Diploma in Nature Conservation, Technikon SA, South Africa	1999

ADDITIONAL TRAINING

Conduct outcomes based assessment (NQF Level 5), South African Qualifications Authority (SAQA)	2009

PROFESSIONAL MEMBERSHIPS

Registered Environmental Assessment Practitioner (Registration Number: 2019/1005)	2020

PROFESSIONAL EXPERIENCE

Energy Sector

- 100MW Solar Photovoltatic (PV) Plant (2021). Project Director. This project involved the compilation of a Basic Assessment and Environmental Management Plan for a 100MW Solar PV Plant near Springs in Gauteng, South Africa. Client: Calodex (Pty) Ltd.
- Erica 400kV Loop-in-Loop-out (LILO) Powerline (2020). Compilation of an environmental screening assessment for the Erica 400kV LILO Powerline in Cape Town, Western Cape, South Africa. Client: Eskom Holdings SOC Limited.
- Maralla East and West Wind Energy Facilities (2019). Project Manager. Compilation of two Part 2 Amendment Process for the changes in technical scope of the Wind Energy Facilities near Sutherland in the Northern and Western Cape, South Africa. Client: BioTherm Energies (Pty) Ltd.
- Ruigtevallei 132kV Powerline (2019): Project Manager. Compilation of a Part 2 Amendment Process for the deviation of the Ruigtevallei – Dreunberg 132 kV powerline near Gariep in the Free State, South Africa. Client: Eskom Holdings SOC Limited.

- Nakonde and Mpika Wind Energy Projects (2018): Project Manager. Compilation of two Environmental Project Briefs for the establishment of meteorological masts at the Proposed Nakonde and Mpika Wind Project Sites in Zambia. Client: Globeleq
- Rietkloof Wind Energy Facility Project (2018): Project Director. Compilation of a Basic Assessment and Environmental Management Programme for a 140MW Wind Energy Facility, Matjiesfontein, Western Cape. Client: G7 Renewable Energies
- Mozambique – Zambia Interconnector Powerline (2018): Project Manager. This project involved the compilation of the Environmental and Social Impact Assessment and Environmental and Social Management Plan for a 300km 400kV powerline between Tete, in Mozambique, and Chipata, in Zambia. Client: Southern African Power Pool (SAPP).
- Ankerlig – Koeberg 132kV powerline walkdown (2017): Project Manager. This project involved the compilation of a Construction and Operation Environmental Management Plans for the Ankerlig – Koeberg 132kV powerline. Client: Eskom Holdings SOC Limited.
- Gwanda 100MW Solar Project (2018): Project Manager. This project involved the high-level review of the Environmental Impact Assessment for a 100MW Photovoltaic (PV) Solar Project near the town of Gwanda, Matebeleland South Province of Zimbabwe against relevant legislation and international standards. Client: WSP | Parsons Brinckerhoff.
- Southern Energy Coal Fired Power Station (2016): Project Manager. This project involved the high-level review of the Environmental Impact Assessment for the Southern Energy Coal Fired Power Station near Hwange in Zimbabwe against relevant legislation and standards. Client: WSP | Parsons Brinckerhoff.
- Proposed Solar and Wind Projects located in the Northern and Western Cape Provinces (2015) Project Manager. This project involved the compilation of 15 Environmental Impact Assessments and Environmental Management Plans for 2 Solar and 2 Wind energy Projects near Aggenys and Sutherland respectively. Client: BioTherm Energy (Pty) Ltd.
- Proposed Solar Park, Northern Cape Province, South Africa (2012): Strategic Environmental Advisor. This project involved the provision of process expertise for the compilation of an Environmental Impact Assessment and Environmental Management Plan for the proposed Solar Park in the Northern Cape Province. Client: Central Energy Fund (CEF).
- Proposed Tabor - Nzhelele 400kV Transmission Lines and associated infrastructure, Limpopo Province, South Africa (2012): Project Manager. This project involved the compilation of an Environmental Impact Assessment and Environmental Management Plan for a 100km 400kV powerline between Louis Trichardt and Musina in the Limpopo Province. Client: Eskom Transmission.
- Retrofitting of the existing Electrostatic Precipitators with Fabric Filter Plants at Units 2, 3 and 4 at the Grootvlei Power Station, South Africa (2012): Project Manager. This project involved the compilation of a Basic Assessment Report and Environmental Management Plan for the proposed retrofitting of the existing Electrostatic Precepitators with Fabric Filter Plants at the Grootvlei Power Station. Client: Eskom Holdings SOC Limited.
- Proposed Mulilo Coal Fired Power Station and associated infrastructure as well as associated power lines and substations, Musina, Limpopo, South Africa (2008): Project Manager. This project involved the compilation of an Environmental Impact Assessment and Environmental Management Plan for the proposed Mulilo Coal Fired Power Station and associated infrastructure as well as associated power lines and substations in the Musina area of the Limpopo Province. Client: Parsons Brinkerhoff Africa and Mulilo Power.

- Pebble Bed Modular Reactor Demonstration Plant and Associated Infrastructure, Western Cape, South Africa (2008): Project Manager. This project involved the compilation of an Environmental Impact Assessment and Environmental Management Plan for the proposed Pebble Bed Modular Reactor Demonstration Plant and Associated Infrastructure in the Western Cape Province. Client: Eskom Generation.
- Proposed Bantamsklip – Kappa 765 kV Transmission Lines and associated infrastructure, Western and Northern Cape, South Africa (2008): Project Manager. This project involved the compilation of an Environmental Impact Assessment and Environmental Management Plan for four 260km 765kV powerlines between the Bantamsklip Nuclear Power Station Site and the proposed new Kappa Substation in the Karoo, Western Cape Province. Client: Eskom Transmissions.
- Proposed Bantamsklip – Bacchus, Bacchus - Kappa and Bacchus – Muldersvlei 400 kV Transmission Lines and associated infrastructure, Western and Northern Cape, South Africa (2008): Project Manager. This project involved the compilation of an Environmental Impact Assessment and Environmental Management Plan for a number of 400kV powerlines between the Bantamsklip Nuclear Power Station Site and a number of substations, including Bacchus, Kappa and Muldersvlei, in the Western Cape Province. Client: Eskom Transmission.
- Westgate – Tarlton – Kromdraai 132 kV Sub-Transmission line and associated infrastructure, Gauteng, South Africa (2008): Project Manager. This project involved the compilation of an Environmental Impact Assessment and Environmental Management Plan for the Westgate – Tarlton – Kromdraai 132 kV Sub-Transmission line and associated infrastructure in the Gauteng Province. Client: Eskom Distribution – Central region.
- Environmental Scoping Study for the proposed new distribution line and substation for Eskom, Dundonald, Mpumalanga (also involved in the Public Participation Process**)**, Mpumalanaga, South Africa (2008): Project Manager. This project involved the compilation of an Environmental Impact Assessment and Environmental Management Plan for a 132kV powerline as well as a new substation in the Tarlton area of Gauteng.
- The proposed new 132 kV sub-transmission line between the Dinaledi and GaRankuwa substations for Eskom, GaRankuwa, North West, South Africa (2008): Project Manager. This project involved the compilation of an Environmental Impact Assessment and Environmental Management Plan for a 132kV powerline between the Dinaledi and GaRankuwa substations in the GaRankuwa area of the North West Province. Client: Eskom Distribution.
- Expansion of the Transmission powerline network and associated infrastructure between the Perseus substation and the Beta substation, Free State, South Africa (2008): Project Manager. This project involved the compilation of an alignment specific construction Environmental Management Plan for the 13km 765kV Perseus Beta Turn-ins. Eskom Transmission
- Tarlton – Kromdraai 132 kV Sub-Transmission line and associated infrastructure, Gauteng, South Africa (2008): Project Manager. This project involved the compilation of an Environmental Impact Assessment and Environmental Management Plan for a 132kV powerline as well as a new substation in the Tarlton area of Gauteng. Client: Eskom Distribution – Central Region.
- Basic Assessment for the proposed Watershed – Mmabatho 88kV Power line. North West, South Africa (2008): Project Manager. This project involved the compilation of a Basic Assessment and Environmental Management Plan for a new 88kV powerline near Mmabatho in the North West Province. Client: Eskom Distribution – Central Region.

- Proposed Watershed – Mmabatho 88kV Power line. North West, South Africa (2007): Project Manager. This project involved the compilation of an Environmental Impact Assessment and Environmental Management Plan for the Watershed – Mmabatho 88kV Power line in the North West Province. Client: Eskom Distribution – Central Region.
- Proposed Combined Cycle Gas Turbine Plant and Associated Infrastructure near Majuba, Mpumalanga, South Africa (2007): Project Manager. This project involved the compilation of an Environmental Impact Assessment and Environmental Management Plan for the proposed Combined Cycle Gas Turbine Plant and Associated Infrastructure near Majuba in the Mpumalanga Province. Client: Eskom Holdings SOC Limited.
- Proposed Capacity Increase of the Atlantis OCGT Plant and Associated Infrastructure, Western Cape, South Africa (2006): Project Manager. This project involved the compilation of an Environmental Impact Assessment and Environmental Management Plan for the proposed Capacity Increase of the Atlantis OCGT Plant and Associated Infrastructure in the Western Cape Province. Client: Eskom Generation.
- Proposed Concentrated Solar Thermal Plant in the Northern Cape, South Africa (2006): Project Manager. This project involved the compilation of an Environmental Impact Assessment and Environmental Management Plan for the proposed Concentrated Solar Thermal Plant near Upington in the Northern Cape Province. Client: Eskom Holdings SOC Limited.
- Proposed Underground Coal Gasification plant, Eskom, Mpumalanga, South Africa (2006): Project Manager. This project involved the compilation of an Environmental Impact Assessment and Environmental Management Plan for the proposed Underground Coal Gasification plant near the Majuba Power Station in the Mpumalanga Province. Client: Eskom Holdings SOC Limited.
- Proposed new Coal-fired Power Station in the Lephalale Area for Eskom, Limpopo, South Africa (2005): Project Manager. This project involved the compilation of an Environmental Impact Assessment and Environmental Management Plan for the proposed new Coal-fired Power Station in the Lephalale Area in the Limpopo Province. Client: Eskom Generation.
- Proposed Open Cycle. Gas Turbine Power Station at Atlantis for Eskom, Western Cape, South Africa (2005): Environmental Consultant. This project involved the compilation of an Environmental Impact Assessment and Environmental Management Plan for the proposed Open Cycle. Gas Turbine Power Station at Atlantis in the Western Cape Province. Client: Eskom Generation.

Infrastructure Sector

- Emalahleni Water Treatment Plant Amendment Project (EWRP) (2020). Project Manager. Compilation of a Part 1 Amendment Process for the changes to the EWRP Environmental Authorisation as well as an update of the Environmental Management Programme for the EWRP near Emalahleni in Mpumalanga, South Africa. Client: Anglo American
- Hendrina Leachate Dam (2018): Project Manager. This project involves the compilation of a Basic Assessment and Environmental Management Plan for a leachate Dam at the Domestic Waste Landfill Site at the Hendrina Power Station. Client: Eskom Holdings SOC Limited.
- Rehabilitation of the R34 between Vryburg and Schweizer-Reneke, North West, South Africa (2016): Project Manager. This project involved the compilation of a Basic Assessment and Environmental Management Plan for the upgrading of the R34 between Vryburg and Schweizer-Reneke. Client: SANRAL
- Proposed Expansion of the Cremation Facilities at the Envirocin Pet Crematorium, Gauteng, South Africa (2013): Project Manager. This project involves the compilation of a basic assessment for the expansion of the cremation facilities at

the Evnirocin Pet Crematorium in Kyasands, Gauteng Province. Client: Envirocin Incineration Systems CC.

- Proposed Kraft Paper Mill in Frankfort, Frankfort, Free State, South Africa (2013): Project Manager. This project involved the undertaking of an Environmental Impact Assessment, including the compilation of an Environmental Management Programme, for the proposed establishment of a KRAFT paper mill in Frankfort in the Free State Province. Client: Industrial Development Corporation of SA (Pty) Ltd.
- Rehabilitation of the N14 between Delerayville and Sannieshof, North West, South Africa (2011): Project Manager. This project involved the compilation of a Basic Assessment and Environmental Management Plan for the upgrading of the N14 between Sannieshof and Delerayville as well as the construction of a new bridge over the Hartsriver. This project also included the compilation of Water Use License and Mining Permit Applications. Client: SANRAL.
- Proposed new Waterfall Cemetery, Limpopo, South Africa (2011): Project Manager. This project involved the compilation of a Basic Assessment and Environmental Management Plan for the new Waterfall Cemetery, Limpopo Province. Client: Makhado Municipality.
- Route determination of the proposed Metro Boulevard, Gauteng, South Africa (2008): Project Manager. This project involved the undertaking of an Environmental Impact Assessment for the route determination of the proposed Metro Boulevard in the Weltevreden Park Area of the Gauteng Province. Client: Johannesburg Roads Agency.
- Proposed new fuel supply pipeline between Milnerton and Atlantis, Western Cape, South Africa (2007): Project Manager. This project involved undertaking an Environmental Impact Assessment for the proposed new fuel supply pipeline between Milnerton and Atlantis to supply the Ankerlig Power Station in the Western Cape Province. Client: Eskom Generation.

Mining Sector

- Establishment of the Proposed Rietvlei Opencast Coal Mine, Mpumalanga, South Africa (2013): Project Manager. This project involves the undertaking of an integrated environmental authorisation process, including an Environmental Impact Assessment, Environmental Management Programme Report, Waste Management License Application and Water Use License Application, for the establishment of an opencast coal mine north of Middelburg. Client: Rietvlei Mining Company.
- Decommissioning of Redundant Infrastructure at the Vaal River Operations, North West and Free State, South Africa (2013): Project Manager. This project involves undertaking an integrated Environmental Authorisation and Waste Management License process for the proposed decommissioning of redundant infrastructure at AngloGold Ashanti's Vaal River Operations. Client: AngloGold Ashanti.
- Decommissioning of Redundant Infrastructure at the West Wits Operations, Gauteng, South Africa (2013): Project Manager. This project involves undertaking a Basic Assessment process for the proposed decommissioning of redundant infrastructure at AngloGold Ashanti's West Wits Operations. Client: AngloGold Ashanti (Pty) Ltd.
- Inyanda Mine Pegasus South Expansion, Mpumalanga, South Africa (2011): Project Manager. This project included the compilation of an Environmental Impact Assessment, Environmental Management Plan, the Amendment of the existing Environmental Management Programme Report and the amendment of the existing Water Use License for the Inyanda Mine Pegasus South Expansion project, north of Middelburg in the Mpumalanga Province. Client: Exxaro Coal (Pty) Ltd.

- Sishen Infrastructure Program, Northern Cape, South Africa (2010): Project Manager. This project involved the compilation of an Environmental Impact Assessment and an Environmental Management Plan for the infrastructure expansion programme proposed by the Sishen Mine in the Northern Cape. Client: Sishen Iron Ore (Pty) Ltd.
- Prospecting Permit Applications in the Kuruman area of the Northern Cape, South Africa (2011): Project Manager. This project involved the compilation of Environmental Management plans as part of six applications for Prospecting Permits in the Kuruman area of the Northern Cape. Client: Sound Mining Solutions.
- Borrow pits required by the Limpopo Department of Roads and Transport, Limpopo, South Africa (2010): Project Manager. This project involved the compilation of Environmental Management plans as part of the applications for Mining Permits for borrow pits required for the rehabilitation of provincial roads in the Limpopo Province. Client: Limpopo Department of Roads and Transport.
- Borrow pits required for the Medupi Coal Fired Power Station, Limpopo, South Africa (2008): Project Manager. This project involved the compilation of Environmental Management plans as part of the applications for Mining Permits for borrow pits required for the Medupi Coal Fired Power Station in the Limpopo Province. Client: Eskom Generation.
- Borrow pits required for the Ingula Pumped Storage Scheme, KwaZulu-Natal, South Africa (2008): Project Manager. This project involved the compilation of Environmental Management plans as part of the applications for Mining Permits for borrow pits required for the Ingula Pumped Storage Scheme in the Kwa-Zulu Natal Province. Client: Eskom Generation.
- Project Manager, Mining Right Application for a 23 Hectare Borrow Pit required for the Steelpoort Pumped Storage Scheme, Mpumalanga, South Africa (2007): Project Manager. This project entailed the compilation of the required Environmental Management Programme Report in support of a Mining Right Application for a 23 Hectare Borrow Pit required for the Steelpoort Pumped Storage Scheme in the Mpumalanga Province. Client: Eskom Generation.
- Renewed Mining and Prospecting Activities on the farm Quaggaskop 215, Vanrhynsdorp, Western Cape, South Africa (2004): Environmental Consultant. This project involved the compilation of an Environmental Management Programme Report for the recommencement of mining and prospecting activities on the farm Quaggaskop 215 outside Vanrhynsdorp in Western Cape Province. Client: Minexpo.

Waste Management Projects

- Sasol Waste Management Environmental Management Programme (2019). Compilation of an operational Environmental Management Programme for the Sasol Waste Ash Facility, Charlie 1 Disposal Facility and the Waste Recycling Facility. Client: Sasol Secunda Operations.
- Proposed continuous Ashing at Majuba Power Station, Mpumalanga, South Africa (2012): Project Manager. This project entailed the compilation Environmental Impact Assessment and Waste Management License Application for the proposed continuous ashing project at the Majuba Power Station in Mpumalanga. Client: Eskom Holdings SOC Limited.
- Proposed continuous Ashing at Tutuka Power Station, Mpumalanga, South Africa (2012): Project Manager. This project entailed the compilation Environmental Impact Assessment and Waste Management License Application for the proposed continuous ashing project at the Tutuka Power Station in Mpumalanga. Client: Eskom Holdings SOC Limited.
- Proposed extension of Ash Dams at Hendrina Power Station, Mpumalanga, South Africa (2011): Project Manager. This project entailed the compilation

Environmental Impact Assessment and Waste Management License Application for the proposed extension of the ash dams at the Hendrina Power Station in Mpumalanga. Client: Hendrina Power Station.

- Phase 1 of the Environmental Impact Assessment for the Proposed Regional General and Hazardous Waste Processing Facility, Eastern Cape (2005). Project Manager. This project entailed the compilation Environmental Impact Assessment for the Proposed Regional General and Hazardous Waste Processing Facility in the Eastern Cape. Client: Coega Development Corporation.

Specialist Projects

- Strategic Environmental Assessment for the Development. Master Plan Greater Port Harcourt, Rivers State, Nigeria, Africa (2008): Senior Environmental Consultant. This project entailed the compilation of a Strategic Environmental Assessment for the City of Port Harcourt as part of the development of the Master Plan for the Greater Port Harcourt Area. Client: Port Harcourt Government
- Development of an Environmental Policy, Gauteng, South Africa (2006): Environmental Consultant. This project entailed the development and compilation of an environmental policy for the Ekurhuleni Metropolitan Municipality. Client: Ekurhuleni Metropolitan Municipality.
- Environmental Input into the National Transport Master Plan, South Africa (2007): Environmental Consultant. This project included the provision of strategic environmental input in to the Draft National Transport Plan. Client: Department of Transport.
- Development of the Development Corridors, Ekurhuleni, Gauteng, South Africa (2006): Environmental Consultant. This project included the provision of strategic environmental input in to the Ekurhuleni Metropolitan Municipalities Development Corridor Study. Client: Ekurhuleni Metropolitan Municipality.

Auditing

- Compliance Audits at South 32 (2016 – 2020): Project Manager. This project involved the environmental compliance audits of the Water Use Licenses for the BMK, Douglas, Klipfontein and Middelburg Mine North and South Sections at South 32 in Mpumalanga. Client: South 32.
- Compliance Audits at Middelburg Water Reclamation Plant (MWRP) (2016 – 2020): Project Manager. This project involved the environmental compliance audits of the Water Use License and Waste Management License for the MWRP at South 32 in Mpumalanga. Client: South 32.
- BioTherm Round 4 Lenders Technical Advisor (2018 - 2021). Project Manager – Environmental. Environmental monitoring of the construction of the Konkoonsies II and Aggeneys Photovoltaic Solar Plants against the IFC Performance Standards. Client: Nedbank.
- Water Use Licence Audits (2019): Lead Auditor: External compliance audits of the water use licences for the Delmas and Argent Powerlines in Mpumalanga. Client: Eskom Holdings SOC Limited.
- Sasol Alrode and Pretoria West Depot Audits (2016 - 2020): Lead Auditor. Environmental compliance audits for environmental authorisations and environmental management plans for the Sasol Alrode and Pretoria West Depots. Client: Sasol Oil (Pty) Ltd
- Sasol Regulation 34 Audits (2019): Lead Auditor. Environmental compliance audits for 13 authorisations for the Sasol Owned Petrol Filling Stations. Client: Sasol Oil (Pty) Ltd
- Regulation 34 Audits at Mogalakwena Mine (2019). Project Manager. Environmental compliance audits of the EMPR and various environmental

authorisations at the Mogalakwena Mine in the Limpopo Province. Client: Anglo American Platinum.

- Sasol Environmental Authorisations and Environmental Management Plans for the Secunda Operations (2019): Lead Auditor. Environmental compliance audits for 49 authorisations for the Sasol Secunda. Client: Sasol Secunda Operations
- Waste Management Licence Compliance Audit and PCB Plan Close Out Audit, Phalaborwa, Limpopo, South Africa (2019): Project Manager. Environmental compliance audit of a WML and the PCB Plan for the Palabora Mine. Client: Palabora Company
- Sasol Mining Water Use Licence Compliance, South Africa (2018): Project Manager. Environmental compliance audit of six WULs held by mining operations in Secunda. Client: Sasol Mining
- Waste Management License Audits for the Sasol Waste Ash Site, Secunda, Mpumalanga, South Africa (2014 - 2019): Lead Auditor. These projects involve the annual and biannual environmental compliance auditing of the Waste Management licenses for various waste facilities at the Secunda Site in Mpumalanga Province. Client: Sasol Chemical Industries: Secunda Synfuels Operations
- Legal Assessment at South 32 (2019): Project Manager and Lead Auditor. This project involved the assessment of legal compliance against the mine's legal register for the Klipfontein and Middelburg Mine North and South Sections at South 32 in Mpumalanga. Client: South 32
- InvestChem Annual Environmental Compliance Monitoring, Kempton Park, Gauteng, South Africa (2013 - 2019): Lead Auditor. This project involved the annual environmental compliance auditing for InvestChem's Sulphonation Plant in Kempton Park, Gauteng Province. The monitoring included InvestChem's compliance to various commitments contained in their environmental management programmes and conditions within their environmental authorisations (records of decision). Client: Investchem (Pty) Ltd.
- Compliance Audits at Sasol Alrode and Pretoria West Depots (2015-2019). Project Manager and Lead Auditor. Annual Environmental compliance auditing of the Environmental authorisations at the Alrode and Pretoria West Depots in Gauteng. Client: Sasol Oil (Pty) Ltd
- Water Use Licence for the Letabo Power Station (2018): Project Manager. Environmental compliance audit of the WUL held by Eskom Letabo Power Station, Free State, South Africa. Client: Eskom Holdings
- Compliance Audits at Kriel Colliery (2018): Project Manager. This project involved the environmental compliance audits of the Water Use Licenses held by Kriel Colliery in Mpumalanga. Client: Seriti Coal
- Legal Assessment at South 32 (2017): Project Manager and Lead Auditor. This project involved the assessment of legal compliance against the mine's legal register for the BMK, Douglas, Klipfontein and Middelburg Mine North and South Sections at South 32 in Mpumalanga. Client: South 32
- EMPR Performance Assessment Report at South 32 (2016): Project Manager. This project involved the formal assessment and verification of the Environmental Management Programme Report for the BMK, Douglas, Klipfontein and Middelburg Mine North and South Sections at South 32 in Mpumalanga. Client: South 32
- Compliance Audit for the Bokpoort Concentrating Solar Power (CSP) Facility, Groblershoop, Northern Cape, South Africa (2016): Lead Auditor. This project involved the environmental compliance auditing of the Waste Management License, Environmental Authorisation and Water Use License for the Bokpoort

CSP Facility near Groblershoop in the Northern Cape Province. Client: ACWA Power Solafrica Bokpoort CSP Power Plant (Pty) Ltd.

- EMPR Performance Assessment Report for the Landau Colliery, Mpumalanga, South Africa (2013): Auditor. This project involved the formal assessment and verification of the Landau Colliery Environmental Management Programme Report, conducted in accordance with Regulation 55 of the Mineral and Petroleum Resources Development Act (No. 28 of 2002). Client: Anglo Thermal Coal.
- Waste Management License Audit for the Slagment Operation, Vanderbijlpark, Gauteng, South Africa (2013): Lead Auditor. This project involved the annual environmental compliance auditing for AfriSam's Slagment Operation in Vanderbijlpark in Gauteng Province. The audit included AfriSam's compliance to the conditions of their waste management license. Client: AfriSam Southern Africa (Pty) Ltd.
- EMPR Performance Assessment Report for the New Vaal Colliery, Free State, South Africa (2006-2007): Auditor. This project involved the formal assessment and verification of the New Vaal Colliery Environmental Management Programme Report, conducted in accordance with Regulation 55 of the Mineral and Petroleum Resources Development Act (No. 28 of 2002). Client: Anglo American Thermal Coal.

Environmental Control Projects

- N14 rehabilitation between Sannieshof and Delareyville, North West, South Africa (2012): Environmental Control Officer. This project involved the monthly auditing of the contractor's compliance with the conditions of the approved Environmental Management Plan as well as ad hoc environmental advise to the Project Engineer and SANRAL. Client: SANRAL.
- Delmas and Bontleng Waste Water Treatment Works, Mpumalanga, South Africa (2009): Environmental Control Officer. This project involved a once off compliance audit of the above-mentioned Waste Water Treatment Works. Client: Victor Khanye Municipality.
- Nkonjaneni Water Borne Sewer Project in Piet Retief, Mpumalanga, South Africa (2009): Environmental Control Officer. This project involved the monthly auditing of the contractor's compliance with the conditions of the approved Environmental Management Plan as well as ad hoc environmental advise to the Project Engineer. Client: Mkhondo Local Municipality.
- Upgrading of the Waterval Water Care Works, Gauteng, South Africa (2005-2007): Environmental Control Officer. This project involved the monthly auditing of the contractor's compliance with the conditions of the approved Environmental Management Plan. Client: ERWAT.
- Lotus Gardens Ext 2 Township establishment, Gauteng, South Africa (2003): Environmental Control Officer. This project involved the monthly auditing of the contractor's compliance with the conditions of the approved Environmental Management Plan. Client: City of Tshwane.

Training

- N14 rehabilitation between Sannieshof and Delareyville, North West, South Africa (2012): Project Manager. This project involved the provision of training for the staff of the N14 rehabilitation project with regards to the contents of the environmental management plan. Client: SANRAL.
- Training in Environmental Aspects and Rehabilitation for the Small Scale Mining Division of Mintek, City, Province, South Africa (2004): Trainer. This project involved the provision of environmental awareness training for delegates involved in the small scale miner training programme run by the Mintek small scale mining division. Client: Mintek

- Training in Environmental Aspects and Impacts, Germiston, Gauteng, South Africa (2004): Trainer. This project involved the provision of environmental aspects and impacts training for the staff of Transwerk in Germiston. Client: Transwerk Germiston.

APPENDIX

B EAP DECLARATION OF INTEREST

APPENDIX 10
DECLARATION OF THE EAP

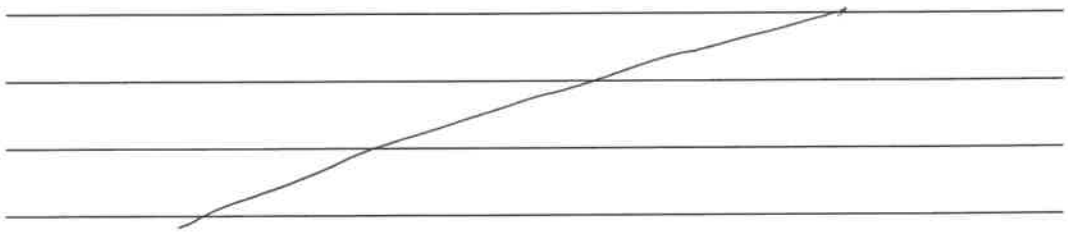
I, Ashlea Strong, declare that –

- I act as the independent environmental assessment practitioner in this application;
- I have expertise in conducting environmental impact assessments, including knowledge of the Act, Regulations and any guidelines that have relevance to the proposed activity;
- I will comply with the Act, Regulations and all other applicable legislation;
- I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant;
- I will take into account, to the extent possible, the matters listed in Regulation 13 of the Regulations when preparing the application and any report relating to the application;
- I undertake to disclose to the applicant and the Competent Authority all material information in my possession that reasonably has or may have the potential of influencing - any decision to be taken with respect to the application by the Competent Authority; and - the objectivity of any report, plan or document to be prepared by myself for submission to the Competent Authority, unless access to that information is protected by law, in which case it will be indicated that such information exists and will be provided to the Competent Authority;
- I will perform all obligations as expected from an environmental assessment practitioner in terms of the Regulations; and
- I am aware of what constitutes an offence in terms of Regulation 48 and that a person convicted of an offence in terms of Regulation 48(1) is liable to the penalties as contemplated in Section 49B of the Act.

Disclosure of Vested Interest (delete whichever is not applicable)

- I do not have and will not have any vested interest (either business, financial, personal or other) in the proposed activity proceeding other than remuneration for work performed in terms of the Regulations;

- I ~~have a vested interest in the proposed activity proceeding, such vested interest being:~~



Signature of the environmental assessment practitioner

WSP Group Africa (Pty) Ltd

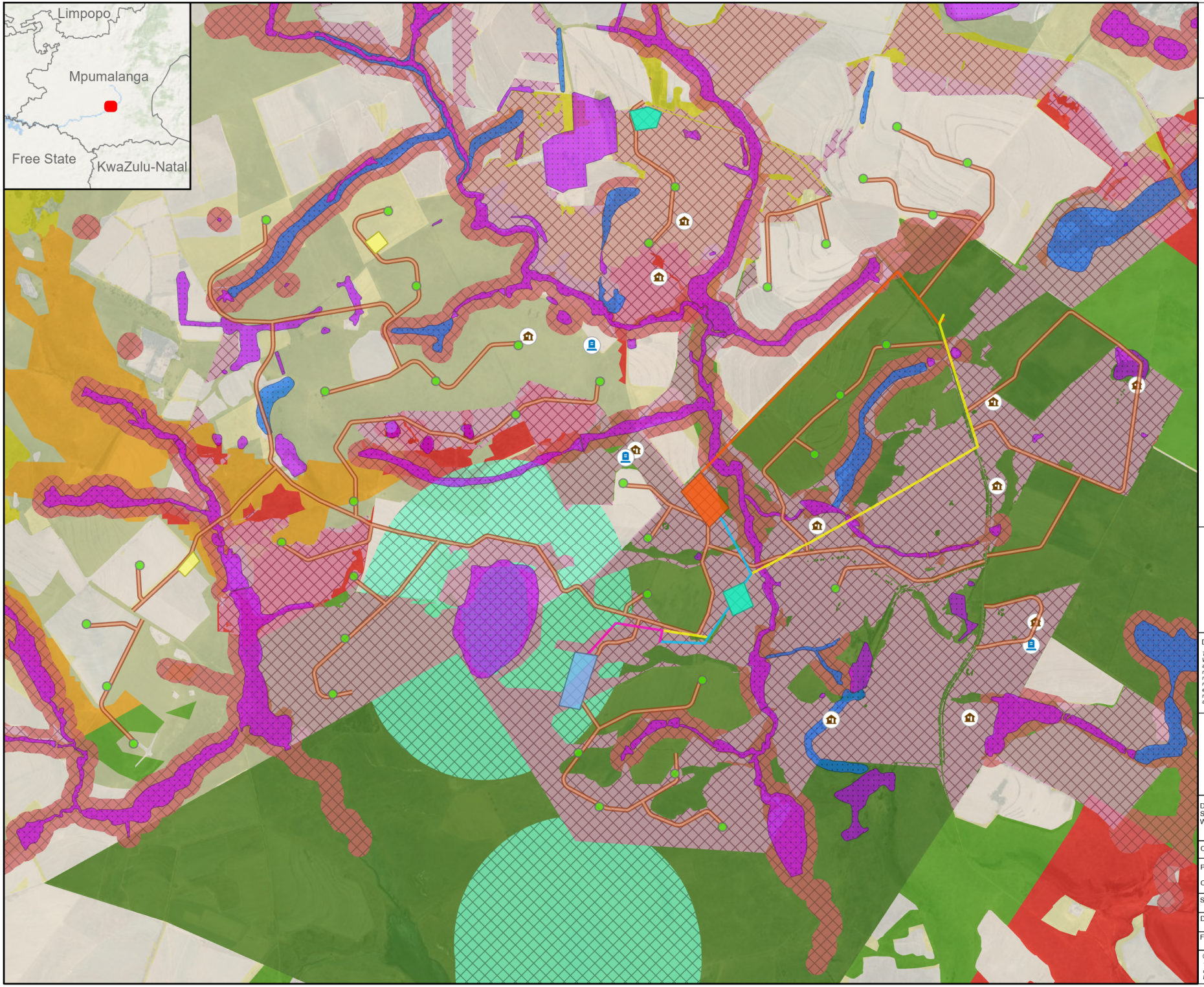
Name of company:

18/08/2022

Date

APPENDIX

C SENSITIVITY MAP



CAMDEN 1 WEF

SENSITIVITY MAP

Legend

- Turbine Locations
- Internal Roads
- Construction camp & batching plants (4.5ha ea)
- SS & BESS, incl. Eskom SS (10ha) Alt1
- SS & BESS, incl. Eskom SS (10ha) Alt2 (Preferred)
- Temp Laydown Areas (2ha ea)

WEF Grid up to 132kV Alternatives

- Alternative 1 (Preferred)
- Alternative 2
- Alternative 3
- Alternative 4

Heritage

- Burial Site
- Structure

Mpumalanga Biodiversity Sector Plan (2019)

- PA National Parks & Nature Reserves
- CBA Irreplaceable
- CBA Optimal
- ESA Local corridor
- ESA Protected Area buffer
- Other Natural Areas
- Moderately modified- Old lands
- Heavily modified

Bats - Sensitivities

- Medium
- High

Avifauna

- High Sensitivity Grassland
- High Sensitivity Pans
- Very High Sensitivity Wetlands

N

0 225 450 675 900 1 125

Metres

DISCLAIMER

The information on this figure was derived from various digital databases available to WSP Environmental (Pty) Ltd. All information is provided "as is" and it must be acknowledged that data, information, and maps are dynamic and in a constant state of maintenance, correction and update. WSP Environmental (Pty) Ltd cannot accept any responsibility for errors, omissions, or positional accuracy where it has not been directly responsible for the production of the data referenced. There are no warranties, expressed or implied, as to the use of this information, including the warranty of merchantability or fitness for a particular purpose. Notification of any errors will be appreciated.

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DATA SOURCE:
Service Layer Credits: World Imagery: Earthstar Geographics
World Ocean Base: Esri, GEBCO, DeLorme, NaturalVue

COORDINATE SYSTEM:

PROJECT TITLE:

CAMDEN RENEWABLE ENERGY COMPLEX

SCALE: 1:45 000	DRAWN BY: TS
DATE: 2022/08/18	REVIEWED BY: AS

FIGURE NO:	PROJECT NO: 41103247	REV:

APPENDIX

D SUBSTATION GENERIC EMPR

GENERIC ENVIRONMENTAL MANAGEMENT PROGRAMME (EMPr) FOR THE DEVELOPMENT AND EXPANSION OF SUBSTATION INFRASTRUCTURE FOR THE TRANSMISSION AND DISTRIBUTION OF ELECTRICITY

environmental affairs
Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

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INTRODUCTION

1. Background

The National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA) requires that an environmental management programme (EMPr) be submitted where an environmental impact assessment (EIA) has been identified as the environmental instrument to be utilised as the basis for a decision on an application for environmental authorisation (EA). The content of an EMPr must either contain the information set out in Appendix 4 of the Environmental Impact Assessment Regulations, 2014, as amended (EIA Regulations) or must be a generic EMPr relevant to an application as identified and gazetted by the Minister in a government notice. Once the Minister has identified, through a government notice that a generic EMPr is relevant to an application for EA, that generic EMPr must be applied by all parties involved in the EA process, including but not limited to the applicant and the competent authority (CA).

2. Purpose

This document constitutes a generic EMPr relevant to applications for the development or expansion of substation infrastructure for the transmission and distribution of electricity, and all listed and specified activities necessary for the realisation of such infrastructure.

3. Objective

The objective of this generic EMPr is to prescribe and pre-approve generally accepted impact management outcomes and impact management actions, which can commonly and repeatedly be used for the avoidance, management and mitigation of impacts and risks associated with the development or expansion of substation infrastructure for the transmission and distribution of electricity. The use of a generic EMPr is intended to reduce the need to prepare and review individual EMPrs for applications of a similar nature.

4. Scope

The scope of this generic EMPr applies to the development or expansion of substation infrastructure for the transmission and distribution of electricity requiring EA in terms of NEMA. This generic EMPr applies to activities requiring EA, mainly activity 11 and 47 of the Environmental Impact Assessment Regulations Listing Notice 1 of 2014, as amended, and activity 9 of the Environmental Impact Assessment Regulations Listing Notice 2 of 2014, as amended, and all associated listed or specified activities necessary for the realization of such infrastructure.

5. Structure of this document

This document is structured in three parts with an Appendix as indicated in the table below:

Part	Section	Heading	Content
A		Provides general guidance and information	Definitions, acronyms, roles & responsibilities and documentation and reporting.

Part	Section	Heading	Content
		and is **not legally binding**	
B	1	Pre-approved generic EMPr template	Contains generally accepted impact management outcomes and impact management actions required for the avoidance, management and mitigation of impacts and risks associated with the development or expansion of substation infrastructure for the transmission and distribution of electricity, which are presented in the form of a template that has been pre-approved. The template in this section is to be completed by the contractor, with each completed page signed and dated by the holder of the EA prior to commencement of the activity. Where an impact management outcome is not relevant, the words "not applicable" can be inserted in the template under the "responsible persons" column. Once completed and signed, the template represents the EMPr for the activity approved by the CA and is legally binding. The template **is not required** to be submitted to the CA as once the generic EMPr is gazetted for implementation, it has been approved by the CA. To allow interested and affected parties access to the pre-approved EMPr template for consideration through the decision-making process, the EAP on behalf of the applicant /proponent must make the hard copy of this EMPr available at a public location and where the applicant has a website, the EMPr should also be made available on such publicly accessible website.
	2	Site specific information	Contains preliminary infrastructure layout and a declaration that the applicant/holder of the EA will comply with the pre-approved generic EMPr template contained in Part B: Section 1, and understands that the impact management outcomes and impact management actions are **legally binding**. The preliminary infrastructure layout must be

Part	Section	Heading	Content
			finalized to inform the final EMPr that is to be submitted with the basic assessment report (BAR) or environmental impact assessment report (EIAR), ensuring that all impact management outcomes and impact management actions have been either pre-approved or approved in terms of Part C. This section **must be** submitted to the CA together with the final BAR or EIAR. The information submitted to the CA will be considered to be incomplete should a signed copy of Part B: section 2 not be submitted. Once approved, this Section forms part of the EMPr for the development and is legally binding.
C		Site specific sensitivities/ attributes	If any specific environmental sensitivities/ attributes are present on the site which require site specific impact management outcomes and impact management actions, not included in the pre-approved generic EMPr, to manage impacts, these specific impact management outcomes and impact management actions must be included in this section. These specific environmental attributes must be referenced spatially and impact management outcomes and impact management actions must be provided. These specific impact management outcomes and impact management actions must be presented in the format of the pre-approved EMPr template (Part B: section 1) This section will not be required should the site contain no specific environmental sensitivities or attributes. However, if Part C is applicable to the site, it **is required** to be submitted together with the BAR or EIAR, for consideration of, and decision on, the application for EA. The information in this section must be prepared by an EAP and must contain his/her name and expertise including a curriculum vitae. Once approved, Part C forms part of the EMPr for the site and is legally binding. This section applies only **to additional** impact management outcomes and impact

Part	Section	Heading	Content
			management actions that are necessary for the avoidance, management and mitigation of impacts and risks associated with the specific development or expansion and which are not already included in Part B: section 1.
Appendix 1			Contains the method statements to be prepared prior to commencement of the activity. The method statements are **not required** to be submitted to the competent authority.

6. Completion of part B: section 1: the pre-approved generic EMPr template

The template is to be completed prior to commencement of the activity, by providing the following information for each environmental impact management action:

- For implementation
  - a 'responsible person',
  - a method for implementation,
  - a timeframe for implementation
- For monitoring
  - a responsible person
  - frequency
  - evidence of compliance.

The completed template must be signed and dated by the holder of the EA prior to commencement of the activity. The method statements prepared and agreed to by the holder of the EA must be appended to the template as Appendix 1. Each method statement must be signed and dated on each page by the holder of the EA. This template once signed and dated is legally binding. The holder of the EA will remain responsible for its implementation.

7. Amendments of the impact management outcomes and impact management actions

Once the activity has commenced, a holder of an EA may make amendments to the impact management outcomes and impact management actions in the following manner:

- Amendment of the impact management outcomes: in line with the process contemplated in Regulation 37 of the EIA Regulations; and
- Amendment of the impact management actions: in line with the process contemplated in Regulation 36 of the EIA Regulations.

8. Documents to be submitted as part of part B: section 2 site specific information and declaration

Part B: Section 2 has three distinct sub-sections. The first and third sub-sections are in a template format. Sub-section two requires a map to be produced.

Sub-section 1 contains the project name, the applicant's name and contact details, the site information, which includes coordinates of the property or farm in which the proposed substation infrastructure is proposed as well as the 21-digit Surveyor General code of each cadastral land parcel and, where available, the farm name.

Sub-section 2 is to be prepared by an EAP and must contain his/her name and expertise including a curriculum vitae. This sub-section must include a map of the site sensitivity overlaid with the preliminary infrastructure layout using the national web based environmental screening tool, when available for compulsory use at: https://screening.environment.gov.za/screeningtool. The sensitivity map shall identify the nature of each sensitive feature e.g. threatened plant species, archaeological site, etc. Sensitivity maps shall identify features both within the planned working area and any known sensitive features and within 50 m from the development footprint.

Sub-section 3 is the declaration that the applicant (s)/proponent (s) or holder of the EA in the case of a change of ownership must complete which confirms that the applicant/EA holder will comply with the pre-approved 'generic EMPr' template in Section 1 and understands that the impact management outcomes and impact management actions are legally binding.

(a) Amendments to Part B: Section 2 – site specific information and declaration

Should the EA be transferred, Part B: Section 2 must be completed by the new applicant/proponent and submitted with the application for an amendment of the EA in terms of regulations 29 or 31 of the EIA Regulations, whichever applies. The information submitted as part of such an application for an amendment to an EA will be considered to be incomplete should a signed copy of Part B: Section 2 not be submitted. Once approved, Part B: Section 2 forms part of the EMPr for the development and the EMPr becomes legally binding to the new EA holder.

PART A – GENERAL INFORMATION

1. DEFINITIONS

In this EMPr any word or expression to which a meaning has been assigned in the NEMA or EIA Regulations has that meaning, and unless the context requires otherwise –

"clearing" means the clearing and removal of vegetation, whether partially or in whole, including trees and shrubs, as specified;

"construction camp" is the area designated for key construction infrastructure and services, including but not limited to offices, overnight vehicle parking areas, stores, the workshop, stockpile and lay down areas, hazardous storage areas (including fuels), the batching plant (if one is located at the construction camp), designated access routes, equipment cleaning areas and the placement of staff accommodation, cooking and ablution facilities, waste and wastewater management;

"contractor" - The Contractor has overall responsibility for ensuring that all work, activities, and actions linked to the delivery of the contract, are in line with the Environmental Management Programme and that Method Statements are implemented as described.

"**hazardous substance**" is a substance governed by the Hazardous Substances Act, 1973 (Act No. 15 of 1973) as well as the Hazardous Chemical and Substances Regulations, 1995;

"method statement" means a written submission by the Contractor to the Project Manager in response to this EMPr or a request by the Project Manager and ECO. The method statement must set out the equipment, materials, labour and method(s) the Contractor proposes using to carry out an activity identified by the Project Manager when requesting the Method Statement. This must be done in such detail that the Project Manager and ECO is able to assess whether the Contractor's proposal is in accordance with this specification and/or will produce results in accordance with this specification;

The method statement must cover as a minimum applicable details with regard to:

(i) Construction procedures;
(ii) Plant, materials and equipment to be used;
(iii) Transporting the equipment to and from site;
(iv) How the plant/ material/ equipment will be moved while on site;
(v) How and where the plant/ material/ equipment will be stored;
(vi) The containment (or action to be taken if containment is not possible) of leaks or spills of any liquid or material that may occur;
(vii) Timing and location of activities;
(viii) Compliance/ non-compliance; and
(ix) Any other information deemed necessary by the Project Manager.

"slope" means the inclination of a surface expressed as one unit of rise or fall for so many horizontal units;

"solid waste" means all solid waste, including construction debris, hazardous waste, excess cement/ concrete, wrapping materials, timber, cans, drums, wire, nails, food and domestic waste (e.g. plastic packets and wrappers);

"spoil" means excavated material which is unsuitable for use as material in the construction works or is material which is surplus to the requirements of the construction works;

"topsoil" means a varying depth (up to 300 mm) of the soil profile irrespective of the fertility, appearance, structure, agricultural potential, fertility and composition of the soil;

"works" means the works to be executed in terms of the Contract

2. ACRONYMS and ABBREVIATIONS

CA	Competent Authority
cEO	Contractors Environmental Officer
dEO	Developer Environmental Officer
DPM	Developer Project Manager
DSS	Developer Site Supervisor
EAR	Environmental Audit Report
ECA	Environmental Conservation Act No. 73 of 1989
ECO	Environmental Control Officer
EA	Environmental Authorisation
EIA	Environmental Impact Assessment
ERAP	Emergency Response Action Plan
EMPr	Environmental Management Programme Report
EAP	Environmental Assessment Practitioner
FPA	Fire Protection Agency
HCS	Hazardous chemical Substance
NEMA	National Environmental Management Act, 1998 (Act No. 107 of 1998)
NEMBA	National Environmental Management: Biodiversity Act ,2004 (Act No. 10 of 2004)
NEMWA	National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008)
MSDS	Material Safety Data Sheet
RI&AP's	Registered Interested and affected parties

3. ROLES AND RESPONSIBILITIES FOR ENVIRONMENTAL MANAGEMENT PROGRAMME (EMPr) IMPLEMENTATION

The effective implementation of this generic EMPr is dependent on established and clear roles, responsibilities and reporting lines within an institutional framework. This section of the EMPr gives guidance to the various environmental roles and reporting lines, however, project specific requirements will ultimately determine the need for the appointment of specific person(s) to undertake specific roles and or responsibilities. As such, it must be noted that in the event that no specific person, for example, an environmental control officer (ECO) is appointed, the holder of the EA remains responsible for ensuring that the duties indicated in this document for action by the ECO are undertaken.

Table 1: *Guide to roles and responsibilities for implementation of an EMPr*

Responsible Person(s)	**Role and Responsibilities**
Developer's Project Manager (DPM)	Role The Project Developer is accountable for ensuring compliance with the EMPr and any conditions of approval from the competent authority (CA). Where required, an environmental control officer (ECO) must be contracted by the Project Developer to objectively monitor the implementation of the EMPr according to relevant environmental legislation, and the conditions of the environmental authorisation (EA). The Project Developer is further responsible for providing and giving mandate to enable the ECO to perform responsibilities, and he must ensure that the ECO is integrated as part of the project team while remaining independent. Responsibilities - Be fully conversant with the conditions of the EA; - Ensure that all stipulations within the EMPr are communicated and adhered to by the Developer and its Contractor(s); - Issuing of site instructions to the Contractor for corrective actions required; - Monitor the implementation of the EMPr throughout the project by means of site inspections and meetings. Overall management of the project and EMPr implementation; and - Ensure that periodic environmental performance audits are undertaken on the project implementation.
Developer Site Supervisor (DSS)	Role The DSS reports directly to the DPM, oversees site works, liaises with the contractor(s) and the ECO. The DSS

Responsible Person(s)	Role and Responsibilities
	is responsible for the day to day implementation of the EMPr and for ensuring the compliance of all contractors with the conditions and requirements stipulated in the EMPr. <u>Responsibilities</u> - Ensure that all contractors identify a contractor's Environmental Officer (cEO); - Must be fully conversant with the conditions of the EA. Oversees site works, liaison with Contractor, DPM and ECO; - Must ensure that all landowners have the relevant contact details of the site staff, ECO and cEO; - Issuing of site instructions to the Contractor for corrective actions required; - Will issue all non-compliances to contractors; and - Ratify the Monthly Environmental Report.
Environmental Control Officer (ECO)	<u>Role</u> The ECO should have appropriate training and experience in the implementation of environmental management specifications. The primary role of the ECO is to act as an independent quality controller and monitoring agent regarding all environmental concerns and associated environmental impacts. In this respect, the ECO is to conduct periodic site inspections, attend regular site meetings, pre-empt problems and suggest mitigation and be available to advise on incidental issues that arise. The ECO is also required to conduct compliance audits, verifying the monitoring reports submitted by the cEO. The ECO provides feedback to the DSS and Project Manager regarding all environmental matters. The Contractor, cEO and dEO are answerable to the Environmental Control Officer for non-compliance with the Performance Specifications as set out in the EA and EMPr. The ECO provides feedback to the DSS and Project Manager, who in turn reports back to the Contractor and potential and Registered Interested &Affected Parties' (RI&AP's), as required. Issues of non-compliance raised by the ECO must be taken up by the Project Manager, and resolved with the Contractor as per the conditions of his contract. Decisions regarding environmental procedures, specifications and requirements which have a cost implication (i.e. those that are deemed to be a variation, not allowed for in the Performance Specification) must be endorsed by the Project Manager. The ECO must also, as specified by the EA, report to the relevant CA as and when required.

Responsible Person(s)	Role and Responsibilities
	Responsibilities The responsibilities of the ECO will include the following: - Be aware of the findings and conclusions of all EA related to the development; - Be familiar with the recommendations and mitigation measures of this EMPr; - Be conversant with relevant environmental legislation, policies and procedures, and ensure compliance with them; - Undertake regular and comprehensive site inspections / audits of the construction site according to the generic EMPr and applicable licenses in order to monitor compliance as required; - Educate the construction team about the management measures contained in the EMPr and environmental licenses; - Compilation and administration of an environmental monitoring plan to ensure that the environmental management measures are implemented and are effective; - Monitoring the performance of the Contractors and ensuring compliance with the EMPr and associated Method Statements; - In consultation with the Developer Site Supervisor order the removal of person(s) and/or equipment which are in contravention of the specifications of the EMPr and/or environmental licenses; - Liaison between the DPM, Contractors, authorities and other lead stakeholders on all environmental concerns; - Compile a regular environmental audit report highlighting any non-compliance issues as well as satisfactory or exceptional compliance with the EMPr; - Validating the regular site inspection reports, which are to be prepared by the contractor Environmental Officer (cEO); - Checking the cEO's record of environmental incidents (spills, impacts, legal transgressions etc.) as well as corrective and preventive actions taken; - Checking the cEO's public complaints register in which all complaints are recorded, as well as action taken; - Assisting in the resolution of conflicts; - Facilitate training for all personnel on the site – this may range from carrying out the training, to

Responsible Person(s)	Role and Responsibilities
	reviewing the training programmes of the Contractor; - In case of non-compliances, the ECO must first communicate this to the Senior Site Supervisor, who has the power to ensure this matter is addressed. Should no action or insufficient action be taken, the ECO may report this matter to the authorities as non-compliance; - Maintenance, update and review of the EMPr; - Communication of all modifications to the EMPr to the relevant stakeholders.
developer Environmental Officer (dEO)	<u>Role</u> The dEOs will report to the Project Manager and are responsible for implementation of the EMPr, environmental monitoring and reporting, providing environmental input to the Project Manager and Contractor's Manager, liaising with contractors and the landowners as well as a range of environmental coordination responsibilities. <u>Responsibilities</u> - Be fully conversant with the EMPr; - Be familiar with the recommendations and mitigation measures of this EMPr, and implement these measures; - Ensure that all stipulations within the EMPr are communicated and adhered to by the Employees, Contractor(s) ; - Confine the development site to the demarcated area; - Conduct environmental internal audits with regards to EMPr and authorisation compliance (on cEO); - Assist the contractors in addressing environmental challenges on site; - Assist in incident management: - Reporting environmental incidents to developer and ensuring that corrective action is taken, and lessons learnt shared; - Assist the contractor in investigating environmental incidents and compile investigation reports; - Follow-up on pre-warnings, defects, non-conformance reports; - Measure and communicate environmental performance to the Contractor; - Conduct environmental awareness training on site together with ECO and cEO;

Responsible Person(s)	Role and Responsibilities
	- Ensure that the necessary legal permits and / or licenses are in place and up to date; - Acting as Developer's Environmental Representative on site and work together with the ECO and contractor;
Contractor	Role The Contractor appoints the cEO and has overall responsibility for ensuring that all work, activities, and actions linked to the delivery of the contract are in line with the EMPr and that Method Statements are implemented as described. External contractors must ensure compliance with this EMPr while performing the onsite activities as per their contract with the Project Developer. The contractors are required, where specified, to provide Method Statements setting out in detail how the impact management actions contained in the EMPr will be implemented during the development or expansion of substation infrastructure for the transmission and distribution of electricity activities. Responsibilities - project delivery and quality control for the development services as per appointment; - employ a suitably qualified person to monitor and report to the Project Developer's appointed person on the daily activities on-site during the construction period; - ensure that safe, environmentally acceptable working methods and practices are implemented and that equipment is properly operated and maintained, to facilitate proper access and enable any operation to be carried out safely; - attend on site meeting(s) prior to the commencement of activities to confirm the procedure and designated activity zones; - ensure that contractors' staff repair, at their own cost, any environmental damage as a result of a contravention of the specifications contained in EMPr, to the satisfaction of the ECO.
contractor Environmental Officer (cEO)	Role Each Contractor affected by the EMPr should appoint a cEO, who is responsible for the on-site implementation of the EMPr (or relevant sections of the EMPr). The Contractor's representative can be the site agent; site engineer; a dedicated environmental officer; or an independent consultant. The Contractor must ensure that the Contractor's Representative is suitably qualified to perform the necessary tasks and is appointed at a level such that she/he can interact effectively with other site Contractors,

Responsible Person(s)	Role and Responsibilities
	labourers, the Environmental Control Officer and the public. As a minimum the cEO shall meet the following criteria: <u>Responsibilities</u> - Be on site throughout the duration of the project and be dedicated to the project; - Ensure all their staff are aware of the environmental requirements, conditions and constraints with respect to all of their activities on site; - Implementing the environmental conditions, guidelines and requirements as stipulated within the EA, EMPr and Method Statements; - Attend the Environmental Site Meeting; - Undertaking corrective actions where non-compliances are registered within the stipulated timeframes; - Report back formally on the completion of corrective actions; - Assist the ECO in maintaining all the site documentation; - Prepare the site inspection reports and corrective action reports for submission to the ECO; - Assist the ECO with the preparing of the monthly report; and - Where more than one Contractor is undertaking work on site, each company appointed as a Contractor will appoint a cEO representing that company.

4. ENVIRONMENTAL DOCUMENTATION REPORTING AND COMPLIANCE

To ensure accountable and demonstrated implementation of the EMPr, a number of reporting systems, documentation controls and compliance mechanisms must be in place for all substation infrastructure projects as a minimum requirement.

4.1 Document control/Filing system

The holder of the EA is solely responsible for the upkeep and management of the EMPr file. As a minimum, all documentation detailed below will be stored in the EMPr file. A hard copy of all documentation shall be filed, while an electronic copy may be kept where relevant. A duplicate file will be maintained in the office of the DSS (where applicable). This duplicate file must remain current and up-to-date. The filing system must be updated and relevant documents added as required. The EMPr file must be made available at all times on request by the CA or other relevant authorities. The EMPr file will form part of any environmental audits undertaken as prescribed in the EIA Regulations.

4.2 Documentation to be available

At the outset of the project the following preliminary list of documents shall be placed in the filing system and be accessible at all times:

- Full copy of the signed EA from the CA in terms of NEMA, granting approval for the development or expansion;
- Copy of the generic and site specific EMPr as well as any amendments thereof;
- Copy of declaration of implementing generic EMPr and subsequent approval of site specific EMPr and amendments thereof;
- All method statements;
- Completed environmental checklists;
- Minutes and attendance register of environmental site meetings;
- An up-to-date environmental incident log;
- A copy of all instructions or directives issued;
- A copy of all corrective actions signed off. The corrective actions must be filed in such a way that a clear reference is made to the non-compliance record;
- Complaints register.

4.3 Weekly Environmental Checklist

The ECOs are required to complete a Weekly Environmental Checklist, the format of which is to be agreed prior to commencement of the activity. The ECOs are required to sign and date the checklist, retain a copy in the EMPr file and submit a copy of the completed checklist to the DSS on a weekly basis.

The checklists will form the basis for the Monthly Environmental Reports. Copies of all completed checklists will be attached as Annexures to the Environmental Audit Report as required in terms of the EIA Regulations.

4.4 Environmental site meetings

Minutes of the environmental site meetings shall be kept. The minutes must include an attendance register and will be attached to the Monthly Report that is distributed to attendees. Each set of minutes must clearly record "Matters for Attention" that will be reviewed at the next meeting.

4.5 Required Method Statements

The method statement will be done in such detail that the ECOs are enabled to assess whether the contractor's proposal is in accordance with the EMPr.

The method statement must cover applicable details with regard to:

- development procedures;
- materials and equipment to be used;
- getting the equipment to and from site;
- how the equipment/ material will be moved while on site;
- how and where material will be stored;
- the containment (or action to be taken if containment is not possible) of leaks or spills of any liquid or material that may occur;
- timing and location of activities;
- compliance/ non-compliance with the EMPr; and
- any other information deemed necessary by the ECOs.

Unless indicated otherwise by the Project Manager, the Contractor shall provide the following method statements to the Project Manager no less than 14 days prior to the commencement date of the activity:

- Site establishment – Camps, Lay-down or storage areas, satellite camps, infrastructure;
- Batch plants;
- Workshop or plant servicing;
- Handling, transport and storage of Hazardous Chemical Substance's;
- Vegetation management – Protected, clearing, aliens, felling;
- Access management – Roads, gates, crossings etc.;
- Fire plan;
- Waste management – transport, storage, segregation, classification, disposal (all waste streams);
- Social interaction – complaints management, compensation claims, access to properties etc.;
- Water – use (source, abstraction and disposal), access and all related information, crossings and mitigation;
- Emergency preparedness – Spills, training, other environmental emergencies;
- Dust and noise management methodologies;
- Fauna interaction and risk management – only if the risk was identified – wildlife interaction especially on game farms; and
- Heritage and palaeontology management.

The ECOs shall monitor and ensure that the contractors perform in accordance with these method statements. Completed and agreed method statements between the holder of the EA and the contractor shall be captured in Appendix 1.

4.6 Environmental Incident Log (Diary)

The ECOs are required to maintain an up-to-date and current Environmental Incident Log (environmental diary). The Environmental Incident Log is a means to record all environmental incidents and/or all non-compliance notice would not be issued. An environmental incident is defined as:

- Any deviation from the listed impact management actions (listed in this EMPr) that may be addressed immediately by the ECOs. (For example a contractor's staff member littering or a drip tray that has not been emptied);
- Any environmental impact resulting from an action or activity by a contractor in contravention of the environmental stipulations and guidelines listed in the EMPr which as a single event would have a minor impact but which if cumulative and continuous would have a significant effect (for example no toilet paper available in the ablutions for an afternoon); and
- General environmental information such as road kills or injured wildlife.

The ECOs are to record all environmental incidents in the Environmental Incident Log. All incidents regardless of severity must be reported to the Developer. The Log is to be kept in the EMPr file and at a minimum the following will be recorded for each environmental incident:

- The date and time of the incident;
- Description of the incident;
- The name of the Contractor responsible;
- The incident must be listed as significant or minor;
- If the incident is listed as significant, a non-compliance notice must be issued, and recorded in the log;
- Remedial or corrective action taken to mitigate the incident; and
- Record of repeat minor offences by the same contractor or staff member.

The Environmental Incident Log will be captured in the EAR.

4.7 Non-compliance

A non-compliance notice will be issued to the responsible contractor by the ECOs via the DSS or Project Manager. The non-compliance notice will be issued in writing; a copy filed in the EMPr file and will at a minimum include the following:

- Time and date of the non-compliance;
- Name of the contractor responsible;
- Nature and description of the non-compliance;
- Recommended / required corrective action; and
- Date by which the corrective action to be completed.
- The contractors shall act immediately when a notice of non-compliance is received and correct whatever is the cause for the issuing of the notice. Complaints received regarding activities on the development site pertaining to the environment shall be recorded in a dedicated register and the response 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 the manner by which the environment is managed. Failure to redress the cause shall be reported to the relevant CA 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 a deviation from the environmental conditions, impact management outcomes and impact management actions activities, as approved in generic and site specific EMPr as relevant as set out in the EMPr, which deviation has, or may cause, an environmental impact.

4.8 Corrective action records

For each non-compliance notice issued, a documented corrective action must be recorded. On receiving a non-compliance notice from the DSS, the contractor's cEO will ensure that the corrective actions required take place within the stipulated timeframe. On completion of the corrective action the cEO is to issue a Corrective Action Report in writing to the ECOs. If satisfied that the corrective action has been completed, the ECOs are to sign-off on the Corrective Action Report, and attach the report to the non-compliance notice in the EMPr file. A corrective action is considered complete once the report has signed off by the ECOs.

4.9 Photographic record

A digital photographic record will be kept. The photographic record will be used to show before, during and post rehabilitation evidence of the project as well used in cases of damages claims if they arise. Each image must be dated and a brief description note attached.

The Contractor shall:

1. Allow the ECOs access to take photographs of all areas, activities and actions.

The ECOs shall keep an electronic database of photographic records which will include:

1. Pictures of all areas designated as work areas, camp areas, development sites and storage areas taken before these areas are set up;
2. All bunding and fencing;
3. Road conditions and road verges;
4. Condition of all farm fences;
5. Topsoil storage areas;
6. All areas to be cordoned off during construction;
7. Waste management sites;
8. Ablution facilities (inside and out);
9. Any non-conformances deemed to be "significant";
10. All completed corrective actions for non-compliances;
11. All required signage;
12. Photographic recordings of incidents;
13. All areas before, during and post rehabilitation; and
14. Include relevant photographs in the Final Environmental Audit Report.

4.10 Complaints register

The ECOs shall keep a current and up-to-date complaints register. The complaints register is to be a record of all complaints received from communities, stakeholders and individuals. The Complaints Record shall:

1. Record the name and contact details of the complainant;
2. Record the time and date of the complaint;
3. Contain a detailed description of the complaint;
4. Where relevant and appropriate, contain photographic evidence of the complaint or damage (ECOs to take relevant photographs); and
5. Contain a copy of the ECOs written response to each complaint received and keep a record of any further correspondence with the complainant. The ECO's written response will include a description of any corrective action to be taken and must be signed by the Contractor, ECO and affected party. Where a damage claim is issued by the complainant, the ECOs shall respond as described in (**section 4.11**) below.

4.11 Claims for damages

In the event that a Claim for Damages is submitted by a community, landowner or individual, the ECOs shall:

1. Record the full detail of the complaint as described in (**section 4.10**) above;
2. The DPM will evaluate the claim and associated damage and submit the evaluation to the Senior Site Representative for approval;
3. Following consideration by the DPM, the claim is to be resolved and settled immediately, or the reason for not accepting the claim communicated in writing to the claimant. Should the claimant not accept this, the ECO shall, in writing report the incident to the Developer's negotiator and legal department; and
4. A formal record of the response by the ECOs to the claimant as well as the rectification of the method of making payments not amount will be recorded in the EMPr file.

4.12 Interactions with affected parties

Open, transparent and good relations with affected landowners, communities and regional staff are an essential aspect to the successful management and mitigation of environmental impacts.

The ECOs shall:

1. Ensure that all queries, complaints and claims are dealt within an agreed timeframe;
2. Ensure that any or all agreements are documented, signed by all parties and a record of the agreement kept in the EMPr file;
3. Ensure that a complaints telephone numbers are made available to all landowners and affected parties; and
4. Ensure that contact with affected parties is courteous at all times;

4.13 Environmental audits

Internal environmental audits of the activity and implementation of the EMPr must be undertaken. The findings and outcomes included in the EMPr file and submitted to the CA at intervals as indicated in the EA.

The ECOs must prepare a monthly EAR. The report will be tabled as the key point on the agenda of the Environmental Site Meeting. The Report is submitted for acceptance at the meeting and the final report will be circulated to the Project Manager and filed in the EMPr file. At a frequency determined by the EA, the ECOs shall submit the monthly reports to the CA. At a minimum the monthly report is to cover the following:

- Weekly Environmental Checklists;
- Deviations and non-compliances with the checklists;
- Non-compliances issued;
- Completed and reported corrective actions;
- Environmental Monitoring;
- General environmental findings and actions; and
- Minutes of the Bi-monthly Environmental Site Meetings.

4.14 Final environmental audits

On final completion of the rehabilitation and/or requirements of the EA a final EAR is to be prepared and submitted to the CA. The EAR must comply with Appendix 7 of the EIA Regulations.

PART B: SECTION 1: Pre-approved generic EMPr template

5. IMPACT MANAGEMENT OUTCOMES AND IMPACT MANAGEMENT ACTIONS

This section provides a pre-approved generic EMPr template with aspects that are common to the development of substation infrastructure for the transmission and distribution of electricity. There is a list of aspects identified for the development or expansion of substation infrastructure for the transmission and distribution of electricity, and for each aspect a set of prescribed impact management outcomes and associated impact management actions have been identified. Holders of EAs are responsible to ensure the implementation of these outcomes and actions for all projects as a minimum requirement, in order to mitigate the impact of such aspects identified for the development or expansion of substation infrastructure for the transmission and distribution of electricity.

The template provided below is to be completed by providing the information under each heading for each environmental impact management action.

The completed template must be signed and dated on each page by both the contractor and the holder of the EA prior to commencement of the activity. The method statements prepared and agreed to by the holder of the EA must be appended to the template as Appendix 1. Each method statement must also be duly signed and dated on each page by the contactor and the holder of the EA. This template, once signed and dated, is legally binding. The holder of the EA will remain responsible for its implementation.

5.1 Environmental awareness training

Impact management outcome: All onsite staff are aware and understands the individual responsibilities in terms of this EMPr.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– All staff must receive environmental awareness training prior to commencement of the activities; – The Contractor must allow for sufficient sessions to train all personnel with no more than 20 personnel attending each course; – Refresher environmental awareness training is available as and when required; – All staff are aware of the conditions and controls linked to the EA and within the EMPr and made aware of their individual roles and responsibilities in achieving compliance with the EA and EMPr; – The Contractor must erect and maintain information posters at key locations on site, and the posters must include the following information as a minimum: a) Safety notifications; and b) No littering. – Environmental awareness training must include as a minimum the following: a) Description of significant environmental impacts, actual or potential, related to their work activities; b) Mitigation measures to be implemented when carrying out specific activities; c) Emergency preparedness and response procedures;						

d) Emergency procedures; e) Procedures to be followed when working near or within sensitive areas; f) Wastewater management procedures; g) Water usage and conservation; h) Solid waste management procedures; i) Sanitation procedures; j) Fire prevention; and k) Disease prevention. – A record of all environmental awareness training courses undertaken as part of the EMPr must be available; – Educate workers on the dangers of open and/or unattended fires; – A staff attendance register of all staff to have received environmental awareness training must be available. – Course material must be available and presented in appropriate languages that all staff can understand.						

5.2 Site Establishment development

Impact management outcome: Impacts on the environment are minimised during site establishment and the development footprint are kept to demarcated development area.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– A method statement must be provided by the contractor prior to any onsite activity that includes the layout of the construction camp in the form of a plan showing the location of key infrastructure and services (where applicable), including						

but not limited to offices, overnight vehicle parking areas, stores, the workshop, stockpile and lay down areas, hazardous materials storage areas (including fuels), the batching plant (if one is located at the construction camp), designated access routes, equipment cleaning areas and the placement of staff accommodation, cooking and ablution facilities, waste and wastewater management; – Location of camps must be within approved area to ensure that the site does not impact on sensitive areas identified in the environmental assessment or site walk through; – Sites must be located where possible on previously disturbed areas; – The camp must be fenced in accordance with ***Section 5.5: Fencing and gate installation***; and – The use of existing accommodation for contractor staff, where possible, is encouraged.						

5.3 Access restricted areas

Impact management outcome: Access to restricted areas prevented.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Identification of access restricted areas is to be informed by the environmental assessment, site walk through and any additional areas identified during development; – Erect, demarcate and maintain a temporary barrier with clear signage around the perimeter of any access restricted area, colour coding could be used if appropriate; and						

– Unauthorised access and development related activity inside access restricted areas is prohibited.						

5.4 Access roads

Impact management outcome: Minimise impact to the environment through the planned and restricted movement of vehicles on site.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– An access agreement must be formalised and signed by the DPM, Contractor and landowner before commencing with the activities; – All private roads used for access to the servitude must be maintained and upon completion of the works, be left in at least the original condition – All contractors must be made aware of all these access routes. – Any access route deviation from that in the written agreement must be closed and re-vegetated immediately, at the contractor's expense; – Maximum use of both existing servitudes and existing roads must be made to minimize further disturbance through the development of new roads; – In circumstances where private roads must be used, the condition of the said roads must be recorded in accordance with ***section 4.9: photographic record***; prior to use and the condition thereof agreed by the landowner, the DPM, and the contractor; – Access roads in flattish areas must follow fence lines and tree belts to avoid fragmentation of vegetated areas or						

croplands – Access roads must only be developed on a pre-planned and approved roads.						

5.5 Fencing and Gate installation

Impact management outcome: Minimise impact to the environment and ensure safe and controlled access to the site through the erection of fencing and gates where required.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Use existing gates provided to gain access to all parts of the area authorised for development, where possible; – Existing and new gates to be recorded and documented in accordance with **section *4.9: photographic record***; – All gates must be fitted with locks and be kept locked at all times during the development phase, unless otherwise agreed with the landowner; – At points where the line crosses a fence in which there is no suitable gate within the extent of the line servitude, on the instruction of the DPM, a gate must be installed at the approval of the landowner; – Care must be taken that the gates must be so erected that there is a gap of no more than 100 mm between the bottom of the gate and the ground; – Where gates are installed in jackal proof fencing, a suitable reinforced concrete sill must be provided beneath the gate; – Original tension must be maintained in the fence wires; – All gates installed in electrified fencing must be re-electrified; – All demarcation fencing and barriers must be maintained in						

good working order for the duration of the development activities; – Fencing must be erected around the camp, batching plants, hazardous storage areas, and all designated access restricted areas, where applicable; – Any temporary fencing to restrict the movement of life-stock must only be erected with the permission of the land owner. – All fencing must be developed of high quality material bearing the SABS mark; – The use of razor wire as fencing must be avoided; – Fenced areas with gate access must remain locked after hours, during weekends and on holidays if staff is away from site. Site security will be required at all times; – On completion of the development phase all temporary fences are to be removed; – The contractor must ensure that all fence uprights are appropriately removed, ensuring that no uprights are cut at ground level but rather removed completely.						

5.6 Water Supply Management

Impact management outcome: Undertake responsible water usage.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– All abstraction points or bore holes must be registered with the DWS and suitable water meters installed to ensure that the abstracted volumes are measured on a daily basis; – The Contractor must ensure the following: a. The vehicle abstracting water from a river does not						

enter or cross it and does not operate from within the river; b. No damage occurs to the river bed or banks and that the abstraction of water does not entail stream diversion activities; and c. All reasonable measures to limit pollution or sedimentation of the downstream watercourse are implemented. – Ensure water conservation is being practiced by: a. Minimising water use during cleaning of equipment; b. Undertaking regular audits of water systems; and c. Including a discussion on water usage and conservation during environmental awareness training. d. The use of grey water is encouraged.						

5.7 Storm and waste water management

Impact management outcome: Impacts to the environment caused by storm water and wastewater discharges during construction are avoided.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Runoff from the cement/ concrete batching areas must be strictly controlled, and contaminated water must be collected, stored and either treated or disposed of off-site, at a location approved by the project manager; – All spillage of oil onto concrete surfaces must be controlled by the use of an approved absorbent material and the used absorbent material disposed of at an appropriate waste disposal facility; – Natural storm water runoff not contaminated during the						

development and clean water can be discharged directly to watercourses and water bodies, subject to the Project Manager's approval and support by the ECO; – Water that has been contaminated with suspended solids, such as soils and silt, may be released into watercourses or water bodies only once all suspended solids have been removed from the water by settling out these solids in settlement ponds. The release of settled water back into the environment must be subject to the Project Manager's approval and support by the ECO.						

5.8 Solid and hazardous waste management

Impact management outcome: Wastes are appropriately stored, handled and safely disposed of at a recognised waste facility.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– All measures regarding waste management must be undertaken using an integrated waste management approach; – Sufficient, covered waste collection bins (scavenger and weatherproof) must be provided; – A suitably positioned and clearly demarcated waste collection site must be identified and provided; – The waste collection site must be maintained in a clean and orderly manner; – Waste must be segregated into separate bins and clearly marked for each waste type for recycling and safe disposal; – Staff must be trained in waste segregation; – Bins must be emptied regularly;						

– General waste produced onsite must be disposed of at registered waste disposal sites/ recycling company; – Hazardous waste must be disposed of at a registered waste disposal site; – Certificates of safe disposal for general, hazardous and recycled waste must be maintained.						

5.9 Protection of watercourses and estuaries

Impact management outcome: Pollution and contamination of the watercourse environment and or estuary erosion are prevented.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– All watercourses must be protected from direct or indirect spills of pollutants such as solid waste, sewage, cement, oils, fuels, chemicals, aggregate tailings, wash and contaminated water or organic material resulting from the Contractor's activities; – In the event of a spill, prompt action must be taken to clear the polluted or affected areas; – Where possible, no development equipment must traverse any seasonal or permanent wetland – No return flow into the estuaries must be allowed and no disturbance of the Estuarine functional Zone should occur; – Development of permanent watercourse or estuary crossing must only be undertaken where no alternative access to tower position is available; – There must not be any impact on the long term morphological dynamics of watercourses or estuaries; – Existing crossing points must be favored over the creation of						

new crossings (including temporary access) – When working in or near any watercourse or estuary, the following environmental controls and consideration must be taken: a) Water levels during the period of construction; No altering of the bed, banks, course or characteristics of a watercourse b) During the execution of the works, appropriate measures to prevent pollution and contamination of the riparian environment must be implemented e.g. including ensuring that construction equipment is well maintained; c) Where earthwork is being undertaken in close proximity to any watercourse, slopes must be stabilised using suitable materials, i.e. sandbags or geotextile fabric, to prevent sand and rock from entering the channel; and d) Appropriate rehabilitation and re-vegetation measures for the watercourse banks must be implemented timeously. In this regard, the banks should be appropriately and incrementally stabilised as soon as development allows.						

5.10 Vegetation clearing

Impact management outcome: Vegetation clearing is restricted to the authorised development footprint of the proposed infrastructure.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
General: – Indigenous vegetation which does not interfere with the development must be left undisturbed; – Protected or endangered species may occur on or near the						

development site. Special care should be taken not to damage such species; – Search, rescue and replanting of all protected and endangered species likely to be damaged during project development must be identified by the relevant specialist and completed prior to any development or clearing; – Permits for removal must be obtained from the relevant CA prior to the cutting or clearing of the affected species, and they must be filed; – The Environmental Audit Report must confirm that all identified species have been rescued and replanted and that the location of replanting is compliant with conditions of approvals; – Trees felled due to construction must be documented and form part of the Environmental Audit Report; – Rivers and watercourses must be kept clear of felled trees, vegetation cuttings and debris; – Only a registered pest control operator may apply herbicides on a commercial basis and commercial application must be carried out under the supervision of a registered pest control operator, supervision of a registered pest control operator or is appropriately trained; – A daily register must be kept of all relevant details of herbicide usage; – No herbicides must be used in estuaries; – All protected species and sensitive vegetation not removed must be clearly marked and such areas fenced off in accordance to ***Section 5.3: Access restricted areas***. Alien invasive vegetation must be removed and disposed of at a licensed waste management facility.						

5.11 Protection of fauna

Impact management outcome: Disturbance to fauna is minimised.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– No interference with livestock must occur without the landowner's written consent and with the landowner or a person representing the landowner being present; – The breeding sites of raptors and other wild birds species must be taken into consideration during the planning of the development programme; – Breeding sites must be kept intact and disturbance to breeding birds must be avoided. Special care must be taken where nestlings or fledglings are present; – Special recommendations of the avian specialist must be adhered to at all times to prevent unnecessary disturbance of birds; – No poaching must be tolerated under any circumstances. All animal dens in close proximity to the works areas must be marked as Access restricted areas; – No deliberate or intentional killing of fauna is allowed; – In areas where snakes are abundant, snake deterrents to be deployed on the pylons to prevent snakes climbing up, being electrocuted and causing power outages; and – No Threatened or Protected species (ToPs) and/or protected fauna as listed according NEMBA (Act No. 10 of 2004) and relevant provincial ordinances may be removed and/or relocated without appropriate authorisations/permits.						

5.12 Protection of heritage resources

Impact management outcome: Impact to heritage resources is minimised.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Identify, demarcate and prevent impact to all known sensitive heritage features on site in accordance with the No-Go procedure in ***Section 5.3: Access restricted areas***; – Carry out general monitoring of excavations for potential fossils, artefacts and material of heritage importance; – All work must cease immediately, if any human remains and/or other archaeological, palaeontological and historical material are uncovered. Such material, if exposed, must be reported to the nearest museum, archaeologist/ palaeontologist (or the South African Police Services), so that a systematic and professional investigation can be undertaken. Sufficient time must be allowed to remove/collect such material before development recommences.						

5.13 Safety of the public

Impact management outcome: All precautions are taken to minimise the risk of injury, harm or complaints.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Identify fire hazards, demarcate and restrict public access to these areas as well as notify the local authority of any potential threats e.g. large brush stockpiles, fuels etc.;						

– All unattended open excavations must be adequately fenced or demarcated; – Adequate protective measures must be implemented to prevent unauthorised access to and climbing of partly constructed towers and protective scaffolding; – Ensure structures vulnerable to high winds are secured; – Maintain an incidents and complaints register in which all incidents or complaints involving the public are logged.						

5.14 Sanitation

Impact management outcome: Clean and well maintained toilet facilities are available to all staff in an effort to minimise the risk of disease and impact to the environment.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Mobile chemical toilets are installed onsite if no other ablution facilities are available; – The use of ablution facilities and or mobile toilets must be used at all times and no indiscriminate use of the veld for the purposes of ablutions must be permitted under any circumstances; – Where mobile chemical toilets are required, the following must be ensured: a) Toilets are located no closer than 100 m to any watercourse or water body; b) Toilets are secured to the ground to prevent them from toppling due to wind or any other cause; c) No spillage occurs when the toilets are cleaned or emptied and the contents are managed in accordance						

with the EMPr; d) Toilets have an external closing mechanism and are closed and secured from the outside when not in use to prevent toilet paper from being blown out; e) Toilets are emptied before long weekends and workers holidays, and must be locked after working hours; f) Toilets are serviced regularly and the ECO must inspect toilets to ensure compliance to health standards; – A copy of the waste disposal certificates must be maintained.						

5.15 Prevention of disease

Impact Management outcome: All necessary precautions linked to the spread of disease are taken.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Undertake environmentally-friendly pest control in the camp area; – Ensure that the workforce is sensitised to the effects of sexually transmitted diseases, especially HIV AIDS; – The Contractor must ensure that information posters on AIDS are displayed in the Contractor Camp area; – Information and education relating to sexually transmitted diseases to be made available to both construction workers and local community, where applicable; – Free condoms must be made available to all staff on site at central points; – Medical support must be made available; – Provide access to Voluntary HIV Testing and Counselling						

Services.						

5.16 Emergency procedures

Impact management outcome: Emergency procedures are in place to enable a rapid and effective response to all types of environmental emergencies.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Compile an Emergency Response Action Plan (ERAP) prior to the commencement of the proposed project; – The Emergency Plan must deal with accidents, potential spillages and fires in line with relevant legislation; – All staff must be made aware of emergency procedures as part of environmental awareness training; – The relevant local authority must be made aware of a fire as soon as it starts; – In the event of emergency necessary mitigation measures to contain the spill or leak must be implemented (see ***Hazardous Substances section 5.17***).						

5.17 Hazardous substances

Impact management outcome: Safe storage, handling, use and disposal of hazardous substances.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– The use and storage of hazardous substances to be minimised and non-hazardous and non-toxic alternatives						

substituted where possible; – All hazardous substances must be stored in suitable containers as defined in the Method Statement; – Containers must be clearly marked to indicate contents, quantities and safety requirements; – All storage areas must be bunded. The bunded area must be of sufficient capacity to contain a spill / leak from the stored containers; – Bunded areas to be suitably lined with a SABS approved liner; – An Alphabetical Hazardous Chemical Substance (HCS) control sheet must be drawn up and kept up to date on a continuous basis; – All hazardous chemicals that will be used on site must have Material Safety Data Sheets (MSDS); – All employees working with HCS must be trained in the safe use of the substance and according to the safety data sheet; – Employees handling hazardous substances / materials must be aware of the potential impacts and follow appropriate safety measures. Appropriate personal protective equipment must be made available; – The Contractor must ensure that diesel and other liquid fuel, oil and hydraulic fluid is stored in appropriate storage tanks or in bowsers; – The tanks/ bowsers must be situated on a smooth impermeable surface (concrete) with a permanent bund. The impermeable lining must extend to the crest of the bund and the volume inside the bund must be 130% of the total capacity of all the storage tanks/ bowsers (110% statutory requirement plus an allowance for rainfall);						

– The floor of the bund must be sloped, draining to an oil separator; – Provision must be made for refueling at the storage area by protecting the soil with an impermeable groundcover. Where dispensing equipment is used, a drip tray must be used to ensure small spills are contained; – All empty externally dirty drums must be stored on a drip tray or within a bunded area; – No unauthorised access into the hazardous substances storage areas must be permitted; – No smoking must be allowed within the vicinity of the hazardous storage areas; – Adequate fire-fighting equipment must be made available at all hazardous storage areas; – Where refueling away from the dedicated refueling station is required, a mobile refueling unit must be used. Appropriate ground protection such as drip trays must be used; – An appropriately sized spill kit kept onsite relevant to the scale of the activity/s involving the use of hazardous substance must be available at all times; – The responsible operator must have the required training to make use of the spill kit in emergency situations; – An appropriate number of spill kits must be available and must be located in all areas where activities are being undertaken; – In the event of a spill, contaminated soil must be collected in containers and stored in a central location and disposed of according to the National Environmental Management: Waste Act 59 of 2008. Refer to ***Section 5.7*** for procedures concerning ***storm and waste water management*** and ***5.8*** for ***solid and hazardous waste management.***						

5.18 Workshop, equipment maintenance and storage

Impact management outcome: Soil, surface water and groundwater contamination is minimised.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Where possible and practical all maintenance of vehicles and equipment must take place in the workshop area; – During servicing of vehicles or equipment, especially where emergency repairs are effected outside the workshop area, a suitable drip tray must be used to prevent spills onto the soil. The relevant local authority must be made aware of a fire as soon as it starts; – Leaking equipment must be repaired immediately or be removed from site to facilitate repair; – Workshop areas must be monitored for oil and fuel spills; – Appropriately sized spill kit kept onsite relevant to the scale of the activity taking place must be available; – The workshop area must have a bunded concrete slab that is sloped to facilitate runoff into a collection sump or suitable oil / water separator where maintenance work on vehicles and equipment can be performed; – Water drainage from the workshop must be contained and managed in accordance Section ***5.7: Storm and waste water management***.						

5.19 Batching plants

Impact management outcome: Minimise spillages and contamination of soil, surface water and groundwater.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Concrete mixing must be carried out on an impermeable surface; – Batching plants areas must be fitted with a containment facility for the collection of cement laden water. – Dirty water from the batching plant must be contained to prevent soil and groundwater contamination – Bagged cement must be stored in an appropriate facility and at least 10 m away from any water courses, gullies and drains; – A washout facility must be provided for washing of concrete associated equipment. Water used for washing must be restricted; – Hardened concrete from the washout facility or concrete mixer can either be reused or disposed of at an appropriate licenced disposal facility; – Empty cement bags must be secured with adequate binding material if these will be temporarily stored on site; – Sand and aggregates containing cement must be kept damp to prevent the generation of dust (Refer to ***Section 5.20: Dust emissions***) – Any excess sand, stone and cement must be removed or reused from site on completion of construction period and disposed at a registered disposal facility; – Temporary fencing must be erected around batching plants in accordance with Section ***5.5: Fencing and gate***						

installation.						

5.20 Dust emissions

Impact management outcome: Dust prevention measures are applied to minimise the generation of dust.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Take all reasonable measures to minimise the generation of dust as a result of project development activities to the satisfaction of the ECO; – Removal of vegetation must be avoided until such time as soil stripping is required and similarly exposed surfaces must be re- vegetated or stabilised as soon as is practically possible; – Excavation, handling and transport of erodible materials must be avoided under high wind conditions or when a visible dust plume is present; – During high wind conditions, the ECO must evaluate the situation and make recommendations as to whether dust-damping measures are adequate, or whether working will cease altogether until the wind speed drops to an acceptable level; – Where possible, soil stockpiles must be located in sheltered areas where they are not exposed to the erosive effects of the wind; – Where erosion of stockpiles becomes a problem, erosion control measures must be implemented at the discretion of the ECO; – Vehicle speeds must not exceed 40 km/h along dust roads						

or 20 km/h when traversing unconsolidated and non-vegetated areas; – Straw stabilisation must be applied at a rate of one bale/10 m² and harrowed into the top 100 mm of top material, for all completed earthworks; – For significant areas of excavation or exposed ground, dust suppression measures must be used to minimise the spread of dust.						

5.21 Blasting

Impact management outcome: Impact to the environment is minimised through a safe blasting practice.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Any blasting activity must be conducted by a suitably licensed blasting contractor; and – Notification of surrounding landowners, emergency services site personnel of blasting activity 24 hours prior to such activity taking place on Site.						

5.22 Noise

Impact Management outcome: Prevent unnecessary noise to the environment by ensuring that noise from development activity is mitigated.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– The Contractor must keep noise level within acceptable limits, Restrict the use of sound amplification equipment for						

communication and emergency only; – All vehicles and machinery must be fitted with appropriate silencing technology and must be properly maintained; – Any complaints received by the Contractor regarding noise must be recorded and communicated. Where possible or applicable, provide transport to and from the site on a daily basis for construction workers; – Develop a Code of Conduct for the construction phase in terms of behaviour of construction staff. Operating hours as determined by the environmental authorisation are adhered to during the development phase. Where not defined, it must be ensured that development activities must still meet the impact management outcome related to noise management.						

5.23 Fire prevention

Impact management outcome: Prevention of uncontrollable fires.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Designate smoking areas where the fire hazard could be regarded as insignificant; – Firefighting equipment must be available on all vehicles located on site; – The local Fire Protection Agency (FPA) must be informed of construction activities; – Contact numbers for the FPA and emergency services must be communicated in environmental awareness training and displayed at a central location on site;						

– Two way swop of contact details between ECO and FPA.						

5.24 Stockpiling and stockpile areas

Impact management outcome: Reduce erosion and sedimentation as a result of stockpiling.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– All material that is excavated during the project development phase (either during piling (if required) or earthworks) must be stored appropriately on site in order to minimise impacts to watercourses, watercourses and water bodies; – All stockpiled material must be maintained and kept clear of weeds and alien vegetation growth by undertaking regular weeding and control methods; – Topsoil stockpiles must not exceed 2 m in height; – During periods of strong winds and heavy rain, the stockpiles must be covered with appropriate material (e.g. cloth, tarpaulin etc.); – Where possible, sandbags (or similar) must be placed at the bases of the stockpiled material in order to prevent erosion of the material.						

5.25 Civil works

Impact management outcome: Impact to the environment minimised during civil works to create the substation terrace.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible	Method of	Timeframe for	Responsible	Frequency	Evidence of

	person	implementation	implementation	person		compliance
– Where terracing is required, topsoil must be collected and retained for the purpose of re-use later to rehabilitate disturbed areas not covered by yard stone; – Areas to be rehabilitated include terrace embankments and areas outside the high voltage yards; – Where required, all sloped areas must be stabilised to ensure proper rehabilitation is effected and erosion is controlled; – These areas can be stabilised using design structures or vegetation as specified in the design to prevent erosion of embankments. The contract design specifications must be adhered to and implemented strictly; – Rehabilitation of the disturbed areas must be managed in accordance with ***Section 5.35: Landscaping and rehabilitation***; – All excess spoil generated during terracing activities must be disposed of in an appropriate manner and at a recognised landfill site; and – Spoil can however be used for landscaping purposes and must be covered with a layer of 150 mm topsoil for rehabilitation purposes.						

5.26 Excavation of foundation, cable trenching and drainage systems

Impact management outcome: No environmental degradation occurs as a result of excavation of foundation, cable trenching and drainage systems.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– All excess spoil generated during foundation excavation must be disposed of in an appropriate manner and at a						

licensed landfill site, if not used for backfilling purposes; – Spoil can however be used for landscaping purposes and must be covered with a layer of 150 mm topsoil for rehabilitation purposes; – Management of equipment for excavation purposes must be undertaken in accordance with ***Section 5.18: Workshop, equipment maintenance and storage***; and – Hazardous substances spills from equipment must be managed in accordance with ***Section 5.17: Hazardous substances***.						

5.27 Installation of foundations, cable trenching and drainage systems

Impact management outcome: No environmental degradation occurs during the installation of foundation, cable trenching and drainage system.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Batching of cement to be undertaken in accordance with **Section *5.19: Batching plants***; and – Residual solid waste must be disposed of in accordance with **Section *5.8: Solid waste and hazardous management***.						

5.28 Installation of equipment (circuit breakers, current Transformers, Isolators, Insulators, surge arresters, voltage transformers, earth switches)

Impact management outcome: No environmental degradation occurs as a result of installation of equipment.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance

– Management of dust must be conducted in accordance with Section ***5. 20: Dust emissions***; – Management of equipment used for installation must be conducted in accordance with Section ***5.18: Workshop, equipment maintenance and storage***; – Management hazardous substances and any associated spills must be conducted in accordance with Section ***5.17: Hazardous substances***; and – Residual solid waste must be recycled or disposed of in accordance with ***Section 5.8: Solid waste and hazardous management***.						

5.29 Steelwork Assembly and Erection

Impact management outcome: No environmental degradation occurs as a result of steelwork assembly and erection.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– During assembly, care must be taken to ensure that no wasted/unused materials are left on site e.g. bolts and nuts – Emergency repairs due to breakages of equipment must be managed in accordance with ***Section 5. 18: Workshop, equipment maintenance and storage*** and ***Section 5.16: Emergency procedures***.						

5.30 Cabling and Stringing

Impact management outcome: No environmental degradation occurs as a result of stringing.		
Impact Management Actions	**Implementation**	**Monitoring**

	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Residual solid waste (off cuts etc.) shall be recycled or disposed of in accordance with **Section *6.8: Solid waste and hazardous Management***; – Management of equipment used for installation shall be conducted in accordance with **Section *5.18: Workshop, equipment maintenance and storage***; – Management hazardous substances and any associated spills shall be conducted in accordance with ***Section 5.17: Hazardous substances***.						

5.31 Testing and Commissioning (all equipment testing, earthing system, system integration)

Impact management outcome: No environmental degradation occurs as a result of Testing and Commissioning.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Residual solid waste must be recycled or disposed of in accordance with ***Section 5.8: Solid waste and hazardous management***.						

5.32 Socio-economic

Impact management outcome: enhanced socio-economic development.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance

– Develop and implement communication strategies to facilitate public participation; – Develop and implement a collaborative and constructive approach to conflict resolution as part of the external stakeholder engagement process; – Sustain continuous communication and liaison with neighboring owners and residents – Create work and training opportunities for local stakeholders; and – Where feasible, no workers, with the exception of security personnel, must be permitted to stay over-night on the site. This would reduce the risk to local farmers.						

5.33 Temporary closure of site

Impact management outcome: Minimise the risk of environmental impact during periods of site closure greater than five days.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Bunds must be emptied (where applicable) and need to be undertaken in accordance with the impact management actions included in ***sections 5.17: Hazardous substances and 5.18: Workshop, equipment maintenance and storage***; – Hazardous storage areas must be well ventilated; – Fire extinguishers must be serviced and accessible. Service records to be filed and audited at last service; – Emergency and contact details displayed must be displayed; – Security personnel must be briefed and have the facilities to contact or be contacted by relevant management and						

emergency personnel; – Night hazards such as reflectors, lighting, traffic signage etc. must have been checked; – Fire hazards identified and the local authority must have been notified of any potential threats e.g. large brush stockpiles, fuels etc.; – Structures vulnerable to high winds must be secured; – Wind and dust mitigation must be implemented; – Cement and materials stores must have been secured; – Toilets must have been emptied and secured; – Refuse bins must have been emptied and secured; – Drip trays must have been emptied and secured.						

5.34 Dismantling of old equipment

Impact management outcome: Impact to the environment to be minimised during the dismantling, storage and disposal of old equipment commissioning.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– All old equipment removed during the project must be stored in such a way as to prevent pollution of the environment; – Oil containing equipment must be stored to prevent leaking or be stored on drip trays; – All scrap steel must be stacked neatly and any disused and broken insulators must be stored in containers; – Once material has been scrapped and the contract has been placed for removal, the disposal Contractor must ensure that any equipment containing pollution causing substances is dismantled and transported in such a way as						

to prevent spillage and pollution of the environment; – The Contractor must also be equipped to contain and clean up any pollution causing spills; and – Disposal of unusable material must be at a licensed waste disposal site.						

5.35 Landscaping and rehabilitation

Impact management outcome: Areas disturbed during the development phase are returned to a state that approximates the original condition.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– All areas disturbed by construction activities must be subject to landscaping and rehabilitation; All spoil and waste must be disposed of to a registered waste site; – All slopes must be assessed for contouring, and to contour only when the need is identified in accordance with the Conservation of Agricultural Resources Act, No 43 of 1983 – All slopes must be assessed for terracing, and to terrace only when the need is identified in accordance with the Conservation of Agricultural Resources Act, No 43 of 1983; – Berms that have been created must have a slope of 1:4 and be replanted with indigenous species and grasses that approximates the original condition; – Where new access roads have crossed cultivated farmlands, that lands must be rehabilitated by ripping which must be agreed to by the holder of the EA and the landowners; – Rehabilitation of access roads outside of farmland; – Indigenous species must be used for with species and/grasses to where it compliments or approximates the						

original condition; – Stockpiled topsoil must be used for rehabilitation (refer to ***Section 5.24: Stockpiling and stockpiled areas***); – Stockpiled topsoil must be evenly spread so as to facilitate seeding and minimise loss of soil due to erosion; – Before placing topsoil, all visible weeds from the placement area and from the topsoil must be removed; – Subsoil must be ripped before topsoil is placed; – The rehabilitation must be timed so that rehabilitation can take place at the optimal time for vegetation establishment; – Where impacted through construction related activity, all sloped areas must be stabilised to ensure proper rehabilitation is effected and erosion is controlled; – Sloped areas stabilised using design structures or vegetation as specified in the design to prevent erosion of embankments. The contract design specifications must be adhered to and implemented strictly; – Spoil can be used for backfilling or landscaping as long as it is covered by a minimum of 150 mm of topsoil. – Where required, re-vegetation including hydro-seeding can be enhanced using a vegetation seed mixture as described below. A mixture of seed can be used provided the mixture is carefully selected to ensure the following: a) Annual and perennial plants are chosen; b) Pioneer species are included; c) Species chosen must be indigenous to the area with the seeds used coming from the area; d) Root systems must have a binding effect on the soil; e) The final product must not cause an ecological imbalance in the area						

6 ACCESS TO THE GENERIC EMPr

Once completed and signed, to allow the public access to the generic EMPr, the holder of the EA must make the EMPr available to the public in accordance with the requirements of Regulation 26(h) of the EIA Regulations.

-+----------PART B: SECTION 2

7 SITE SPECIFIC INFORMATION AND DECLARATION

7.1 Sub-section 1: contact details and description of the project

7.1.1 Details of the applicant:

Camden I Wind (RF) Pty Ltd is the project proponent (Applicant) with regards to the application for the construction and operation of the Camden I WEF.

PROPONENT: **CAMDEN I WIND (RF) PTY LTD**

Contact Person:	Mercia Grimbeek
Postal Address	Suite 104, The Albion Springs Office Park, 183 Main Road, Rondebosch, Cape Town
Telephone:	071 752 8033
Email:	Gideon.Raath@enertrag.com

7.1.2 Details and expertise of the EAP:

WSP was appointed in the role of Independent EAP to undertake the S&EIA processes for the proposed construction of the Camden I WEF. The CV of the EAP is available in Appendix A. The EAP declaration of interest and undertaking is included in Appendix B.

EAP **WSP GROUP AFRICA (PTY) LTD**

Company Registration:	1999/008928/07
Contact Person:	Ashlea Strong
Physical Address:	Building C, Knightsbridge, 33 Sloane Street, Bryanston, Johannesburg
Postal Address:	P.O. Box 98867, Sloane Park 2151, Johannesburg
Telephone:	011 361 1392

EAP	**WSP GROUP AFRICA (PTY) LTD**
Fax:	011 361 1301
Email:	Ashlea.Strong@wsp.com

7.1.3 Project name:

Proposed Camden II Wind Energy Facility

7.1.4 Description of the project:

The proponent is proposing the development of a Camden Renewable Energy Complex within the vicinity of the Camden Power Station in Mpumalanga. The Complex consists of eight distinct projects referred to as:

- ***Camden I Wind Energy Facility (up to 200MW) (subject to a S&EIR process);***
- *Camden I Wind Grid Connection (up to 132kV) (subject to a Basic Assessment (BA) Process);*
- *Camden Grid Connection and Collector substation (up to 400kV) (subject to a S&EIR process);*
- *Camden I Solar (up to 100MW) (subject to a S&EIR process);*
- *Camden I Solar Grid Connection (up to 132kV) (subject to a BA Process);*
- *Camden II Wind Energy Facility (up to 200MW) (subject to a S&EIR process);*
- *Camden II Wind Energy Facility up to 132kV Grid Connection (subject to a BA Process); and*
- *Camden Green Hydrogen and Ammonia Facility, including grid connection infrastructure (subject to a S&EIR process).*

The Complex (except for the Green Hydrogen and Ammonia project) is being developed in the context of the Department of Mineral Resources and Energy's (DMRE Integrated Resource Plan, and the Renewable Energy Independent Power Producer Procurement Programme (REIPPP).

The focus of this Environmental Impact Assessment Report is the proposed Camden I WEF project (DFFE Reference Number: 14/12/16/3/3/2/2137).

The proposed project will be operated under a Special Purpose Vehicle (SPV), and the Project Applicant is Camden II Wind (RF) (Pty) Ltd. The proposed WEF will connect to the nearby Camden Collector substation through an up to 132kV single or double circuit powerline (subject to a separate BA process, as mentioned above) between the grid connection substation portion (immediately adjacent the Camden I WEF on-site Independent Power Producer (IPP) substation portion) and that of the Camden Collector substation. The broader Camden developments (i.e. seven of the abovementioned

subprojects) will connect to the Camden Power Station substation through an up to 400kV powerline (either single or double circuit) (subject to a separate Scoping and EIA process).

In order for the proposed project to proceed, it will require an Environmental Authorisation (EA) from the Competent Authority (CA) (i.e. the National Department of Forestry, Fisheries and Environment, (DFFE)).

7.1.5 Project location:

The proposed Camden I WEF will have a project area of approximately 6 700 hectares (ha). Within this project area the extent of the buildable area will be approximately 200 ha subject to finalisation based on technical and environmental requirements.

The proposed WEF is located south of Ermelo, in Mpumalanga and falls within the Msukaligwa Local Municipality and the Dr Pixley Ka Seme Local Municipality of the Gert Sibande District Municipality. The eight projects of the Camden Renewable Energy Complex are located adjacent each other and as such, the overall locality of the Camden Renewable Energy Complex is included in Error! Reference source not found.. The Camden I WEF (*project under consideration for this EIR*) project site, including associated alternatives, is indicated in Error! Reference source not found.. The details of the properties associated with the proposed Camden II WEF, including the 21-digit Surveyor General (SG) codes for the cadastral land parcels are outlined in Error! Reference source not found..

FARM NAME	**21 DIGIT SURVEYOR GENERAL CODE OF EACH CADASTRAL LAND PARCEL**
Portion 0 of Klipfontein Farm No. 442	T0IS00000000044200000
Portion 1 of Klipfontein Farm No. 442	T0IS00000000044200001
Portion 3 of Klipfontein Farm No. 442	T0IS00000000044200003
Portion 1 of Welgelegen Farm No. 322	T0IT00000000032200001
Portion 2 of Welgelegen Farm No. 322	T0IT00000000032200002
Portion 2 of Uitkomst Farm No. 292	T0IT00000000029200002
Portion 10 of Uitkomst Farm No. 292	T0IT00000000029200010
Portion 3 of Langverwatch Farm No. 290	T0IT00000000029300003
Portion 14 of Mooiplaats Farm No. 290	T0IT00000000029000014
Portion 3 of Klipbank Farm 295	T0IT00000000029500003

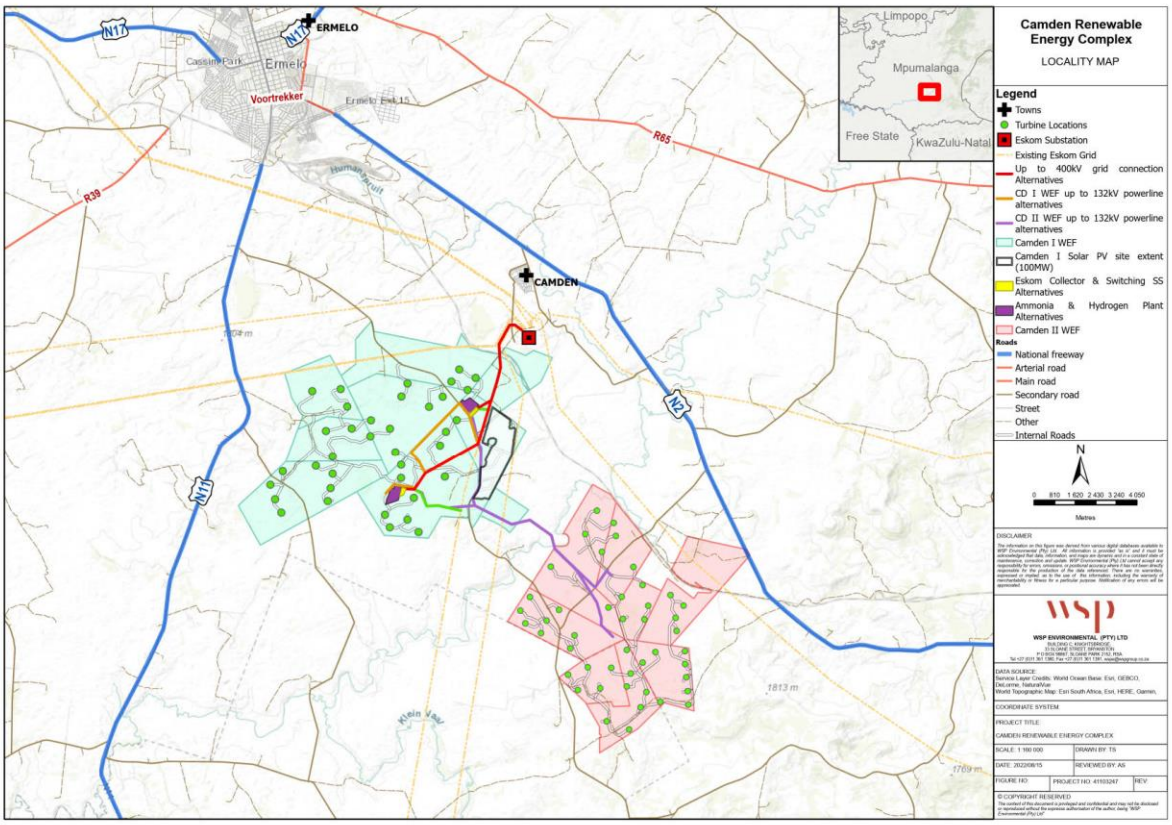


Figure 1: Locality map for the proposed Camden Renewable Energy Complex, near Camden in the Mpumalanga Province showing the location and proximity of the respective projects to each other

7.2 Sub-section 2: Development footprint site map

This sub-section must include a map of the site sensitivity overlaid with the preliminary infrastructure layout. The sensitivity map must be prepared from the national web based environmental screening tool, when available for compulsory use at: https://screening.environment.gov.za/screeningtool. The sensitivity map shall identify the nature of each sensitive feature e.g. threatened plant species, archaeological site, etc. Sensitivity maps shall identify features both within the planned working area and any known sensitive features within 50 m from the development footprint.

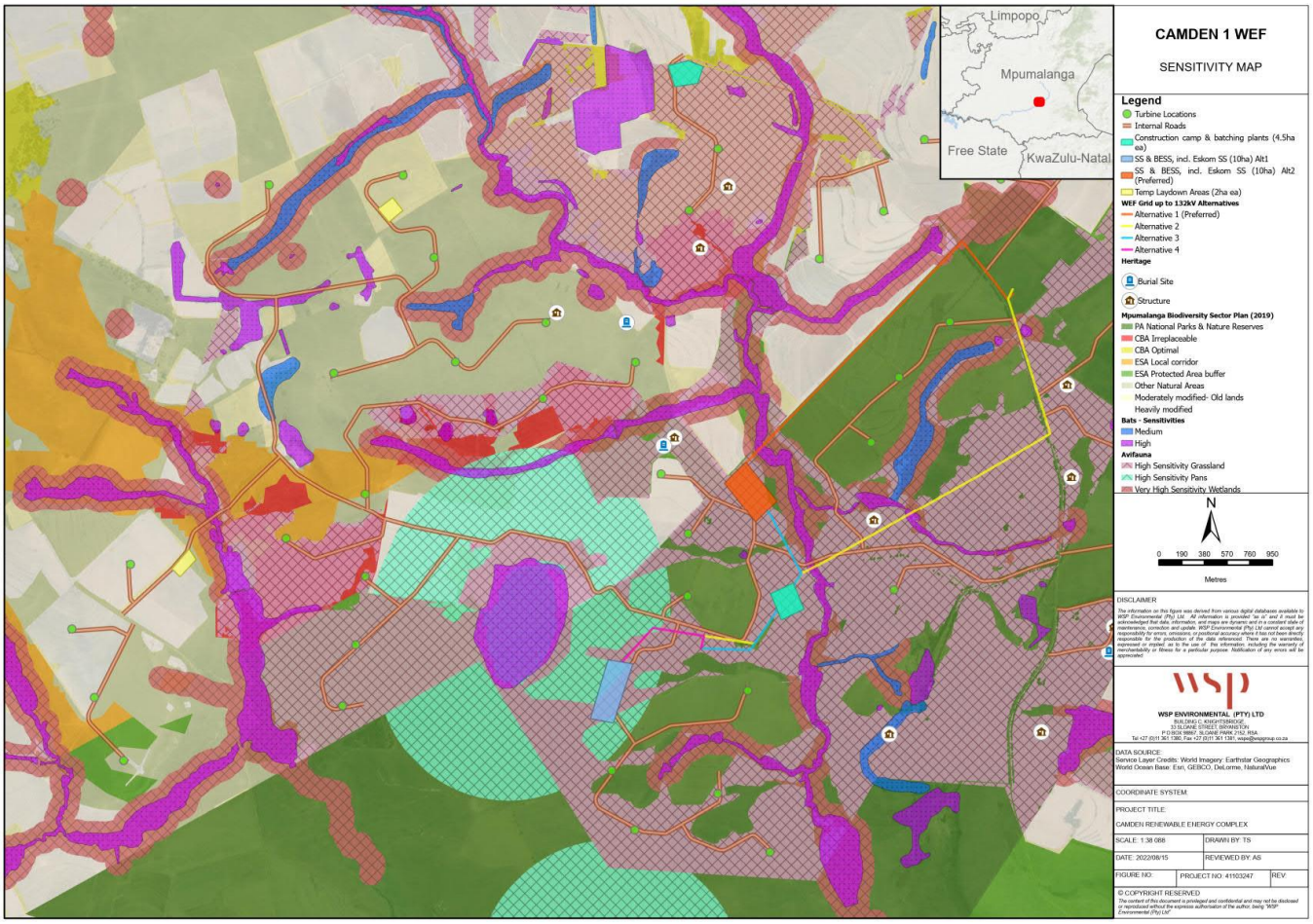


Figure 2: Site Layout overlain onto a Consolidated Environmental Sensitivity Map

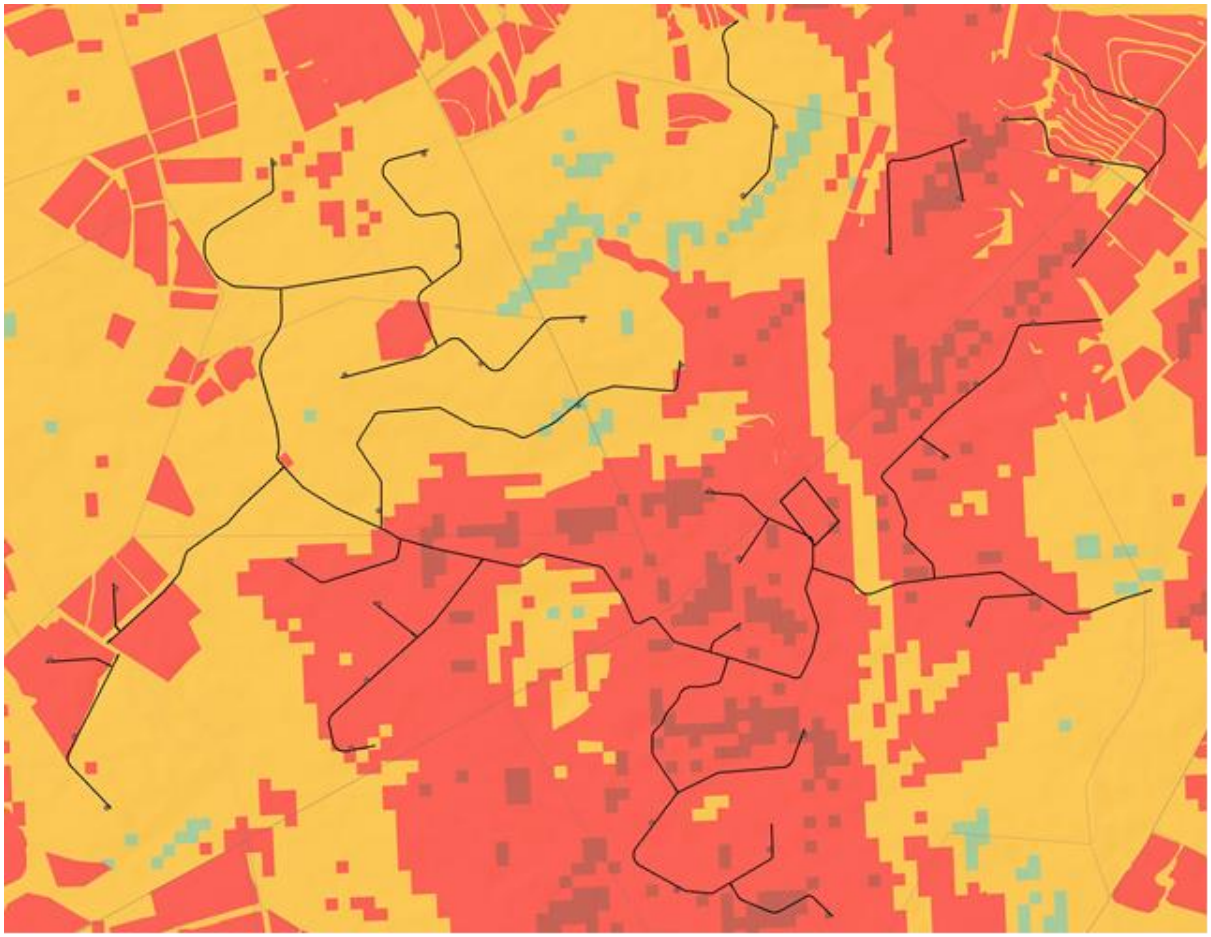


Figure 3: The proposed development overlain on agricultural sensitivity

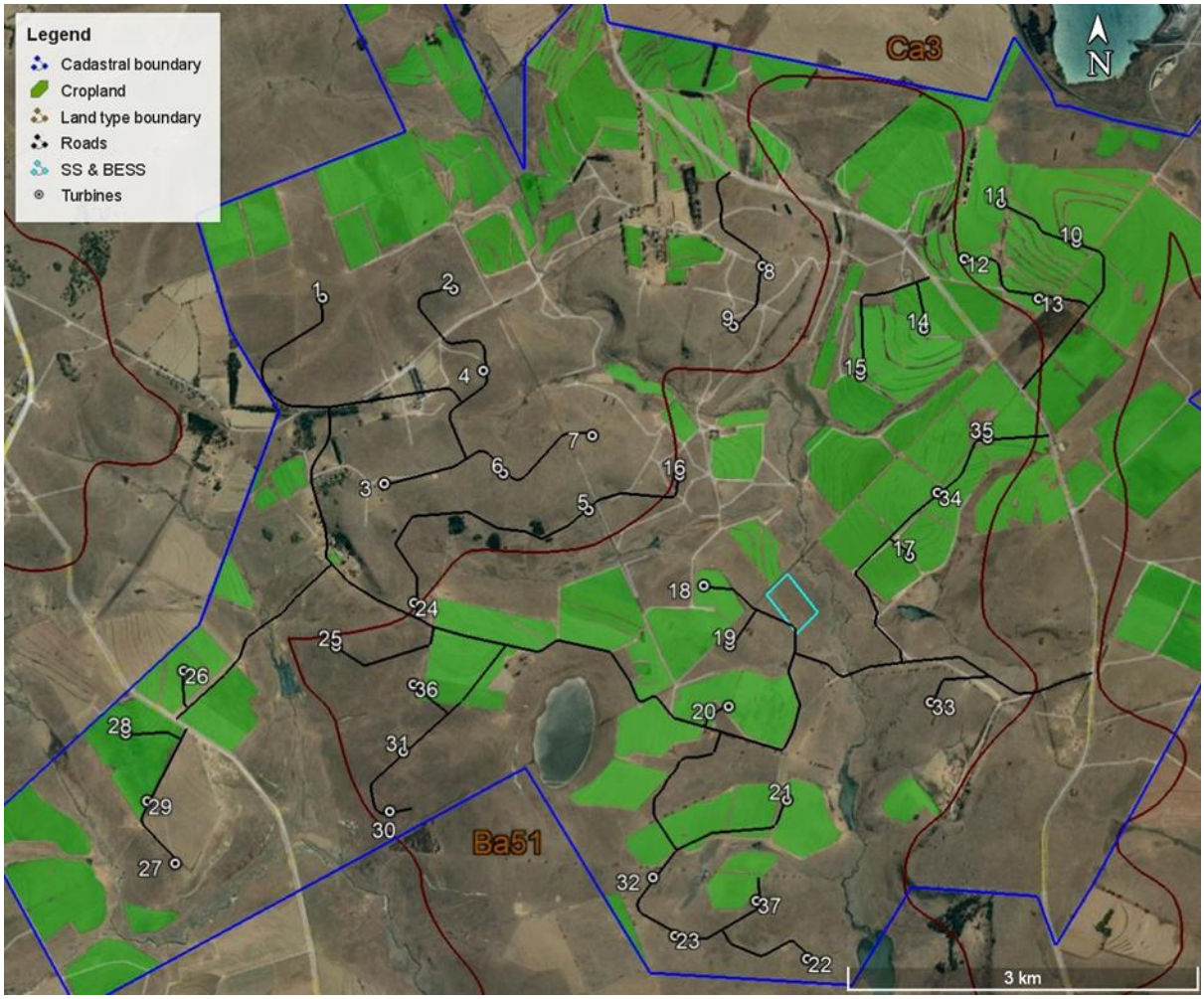


Figure 4: The proposed facility in relation to cropland (Johann Lanz, 2022)

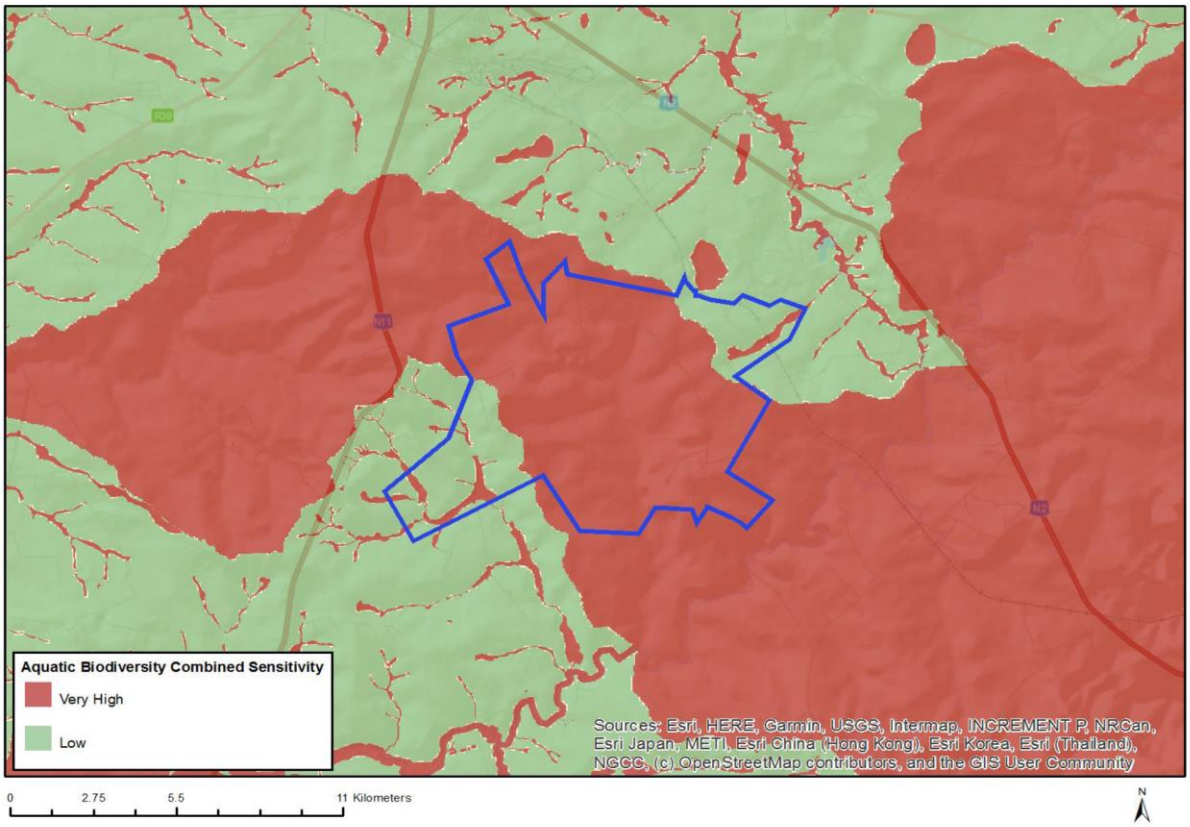


Figure 5: The DFFE screening tool rating for the Aquatic Biodiversity Theme

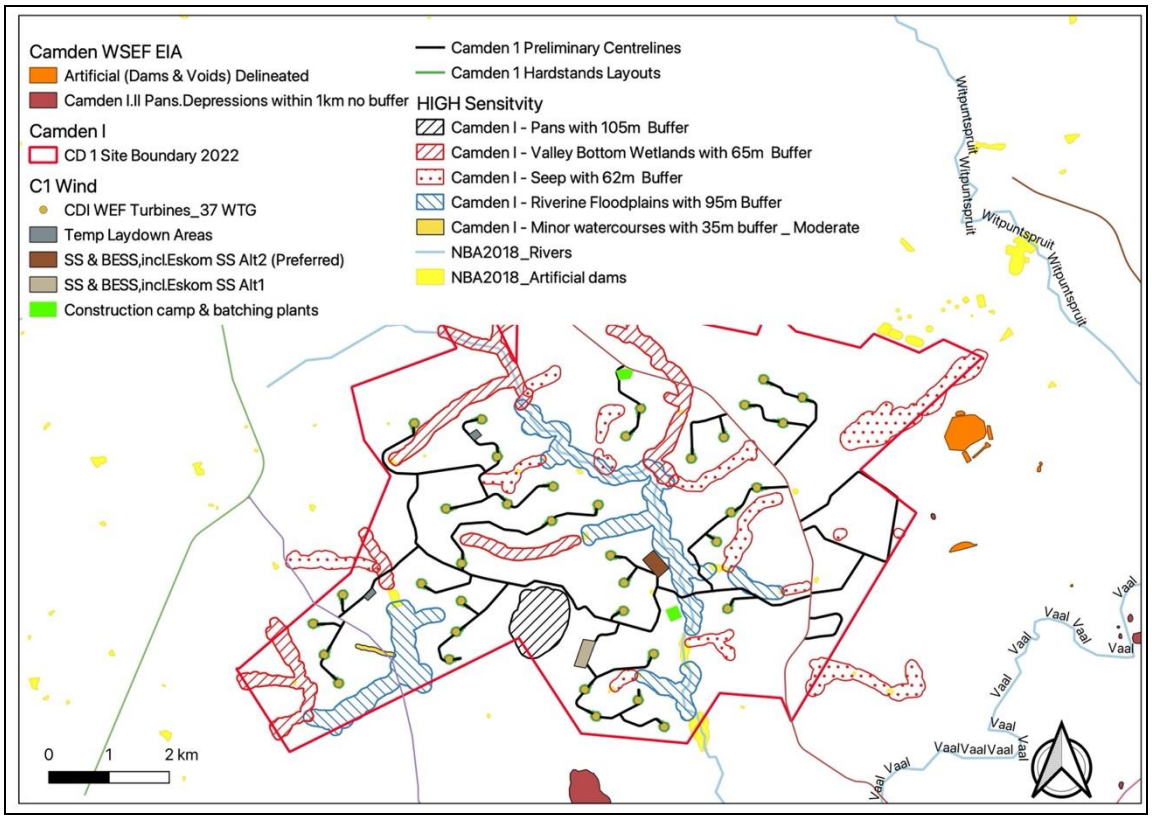


Figure 6: Camden I Wind Energy Facility, BESS and associated substations (including alternatives) in relation to buffered aquatic systems delineated in this assessment (EnviroSci (Pty) Ltd, 2022)

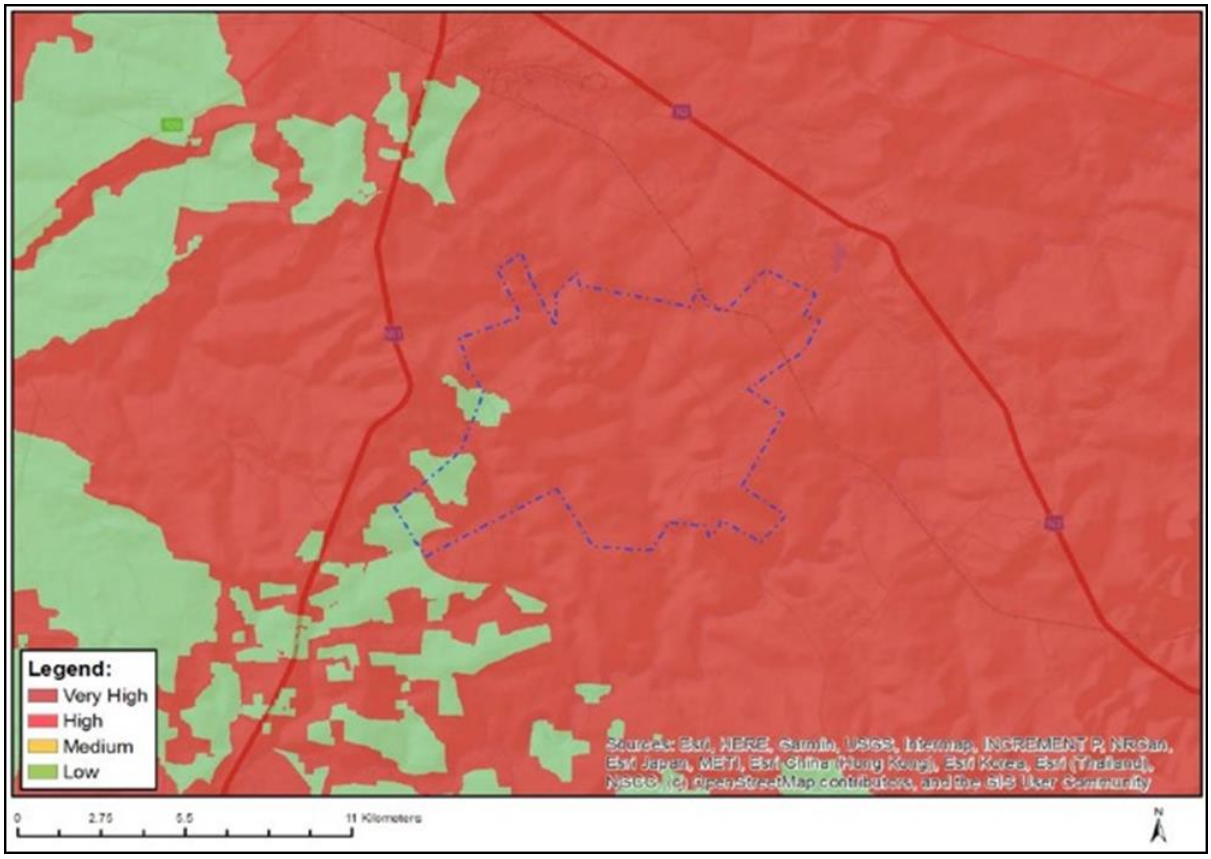


Figure 7: Terrestrial Biodiversity Theme Sensitivity, DFFE Screening Report

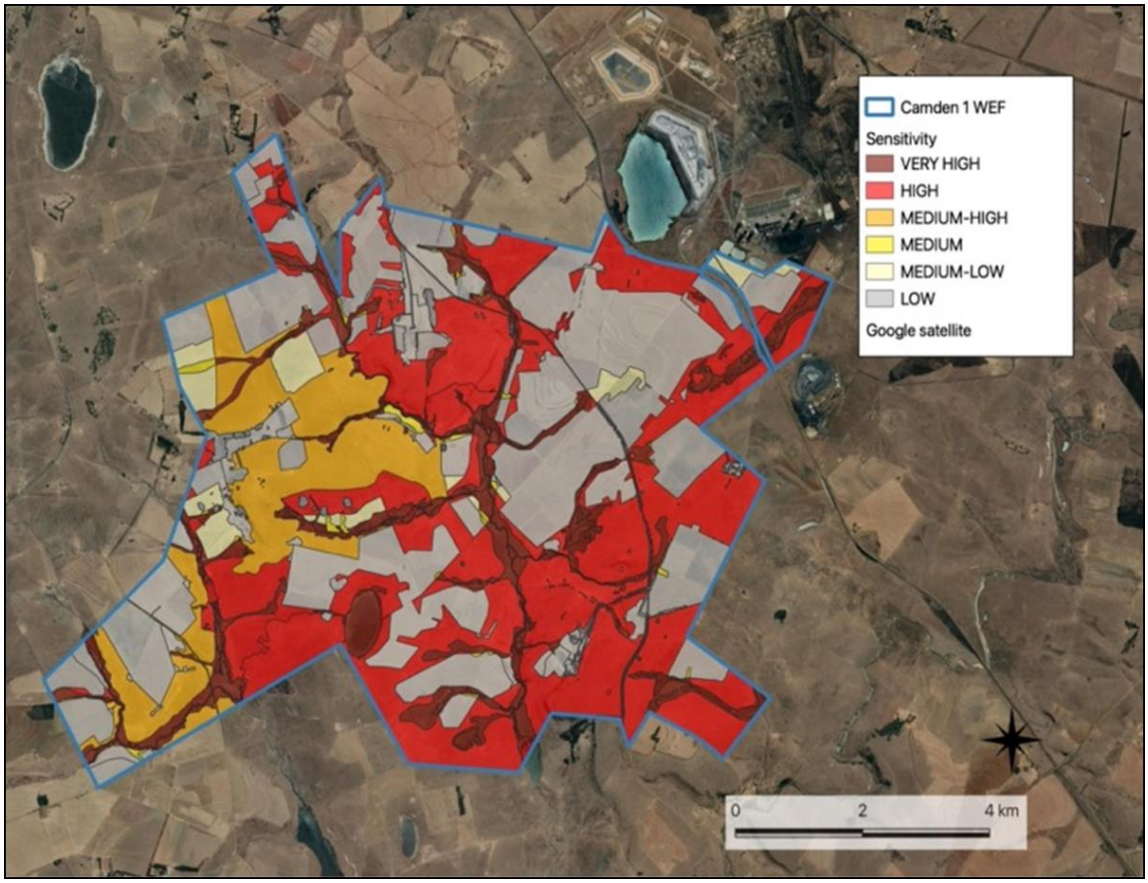
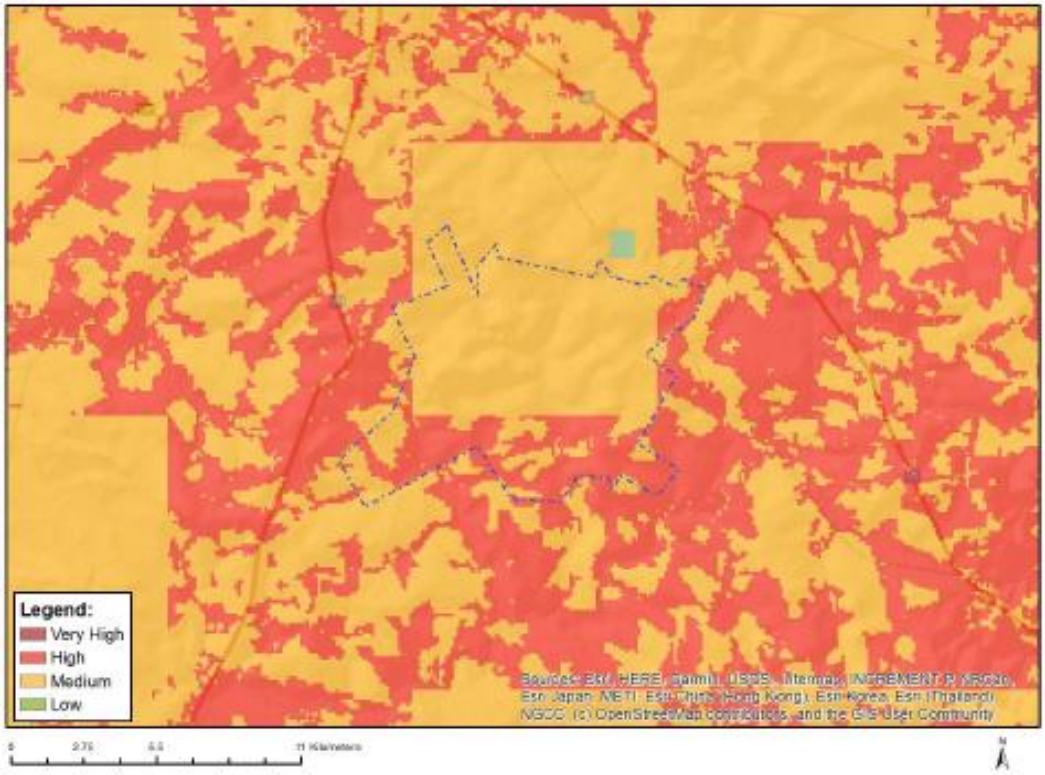


Figure 8: Habitat sensitivity of the study area, including consideration of CBAs (David Hoare Consulting, 2022)

MAP OF RELATIVE ANIMAL SPECIES THEME SENSITIVITY



Where only a sensitive plant unique number or sensitive animal unique number is provided in the screening report and an assessment is required, the environmental assessment practitioner (EAP) or specialist is required to email SANBI at eiadatarequests@sanbi.org.za listing all sensitive species with their unique identifiers for which information is required. The name has been withheld as the species may be prone to illegal harvesting and must be protected. SANBI will release the actual species name after the details of the EAP or specialist have been documented.

Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
	X		

Sensitivity Features:

Sensitivity	Feature(s)
High	Aves-Balearica regulorum
High	Aves-Polemaetus bellicosus
High	Aves-Geronticus calvus
High	Aves-Eupodotis senegalensis
Medium	Aves-Balearica regulorum
Medium	Aves-Sagittarius serpentarius

Figure 9: DFFE Screening Tool extract for the animal species theme

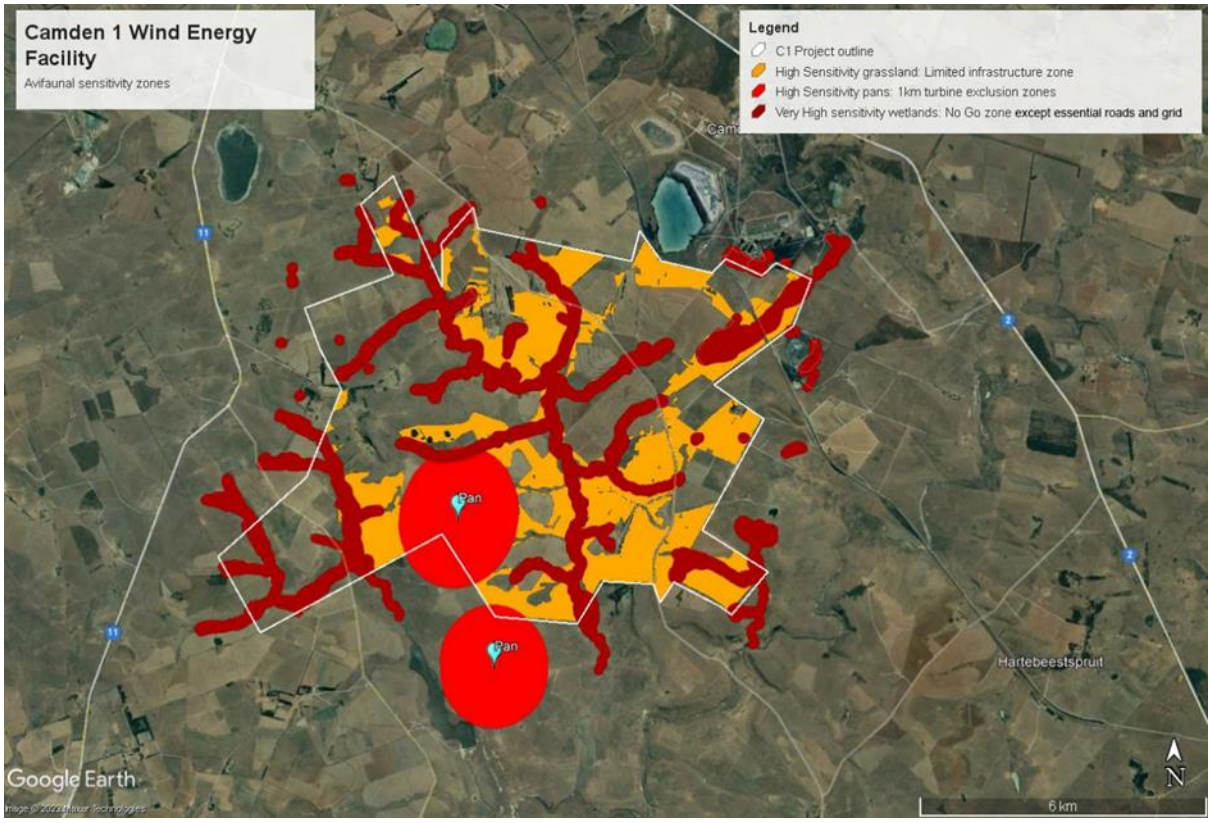


Figure 10: **Avifauna Sensitivity Zones at the Camden I WEF (Chris van Rooyen Consulting, 2022)**

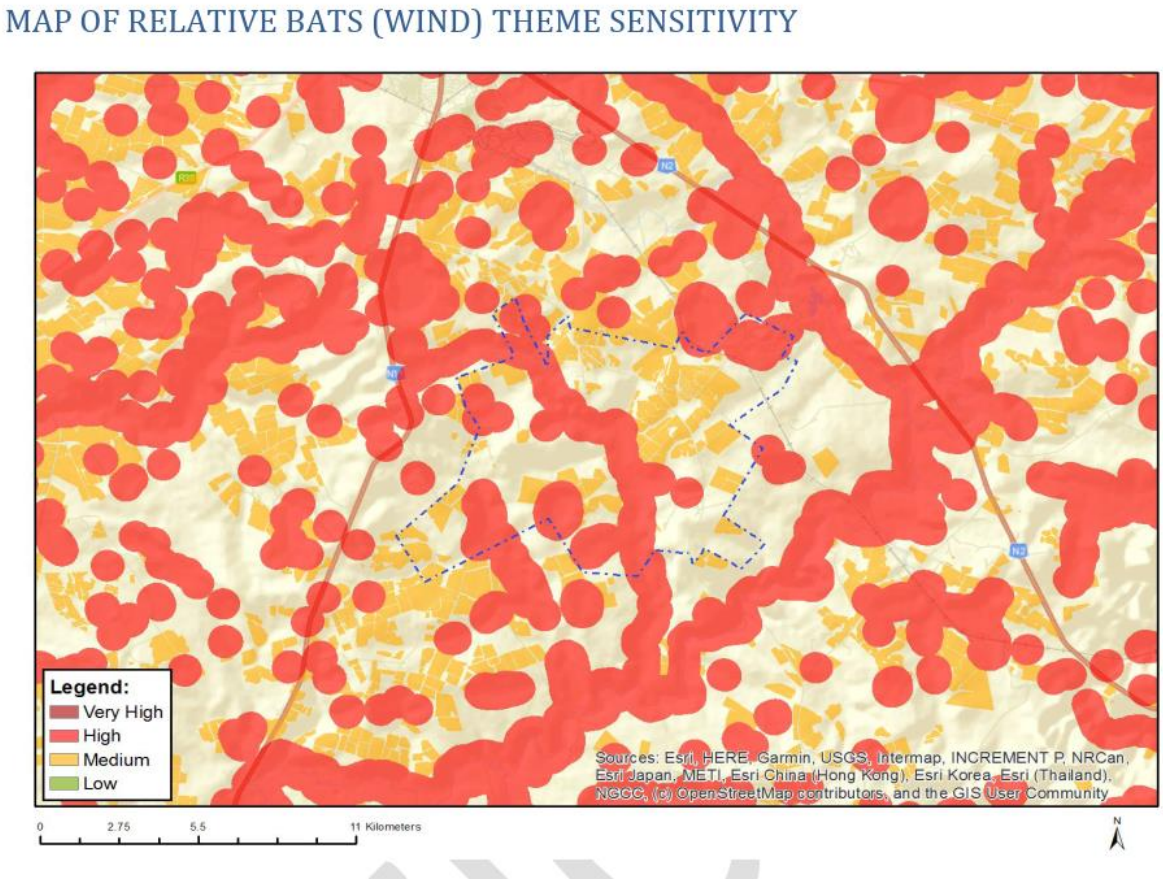


Figure 11: **DFFE Screening Tool extract for the bats (wind) theme**

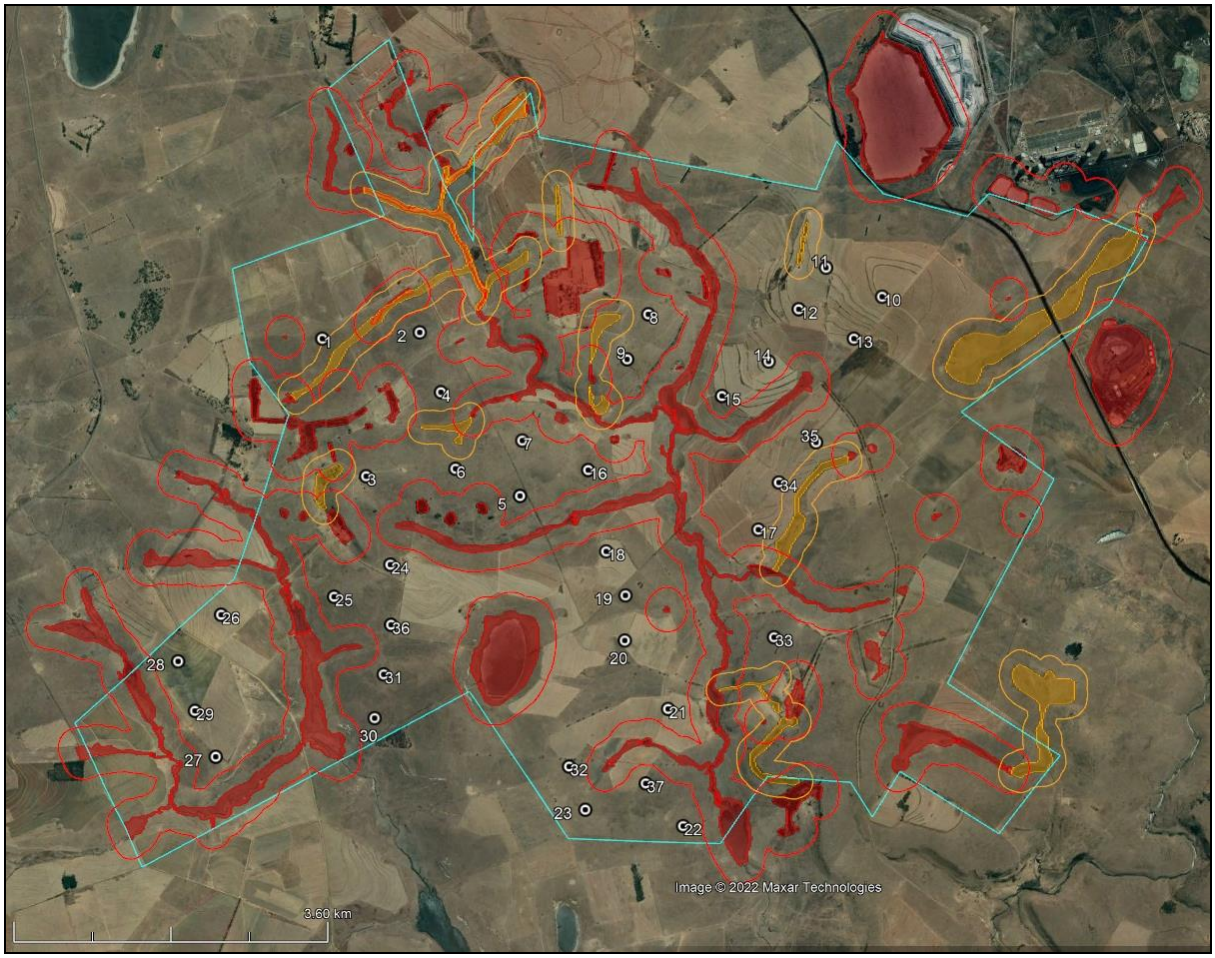
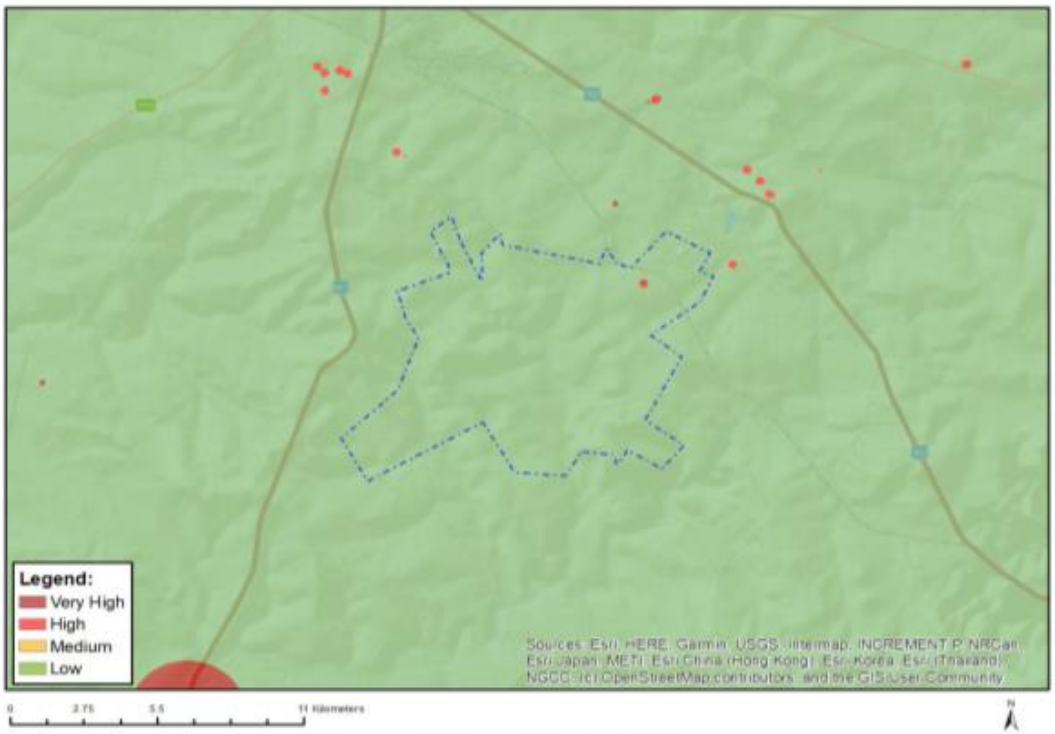


Figure 12: **Bat sensitivity map of the wind energy facility site (Animalia, 2022)**

MAP OF RELATIVE ARCHAEOLOGICAL AND CULTURAL HERITAGE THEME SENSITIVITY



Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
X			

Sensitivity Features:

Sensitivity	Feature(s)
High	Within 150m of a Grade IIIa Heritage site
Low	Low sensitivity
Very High	Within 100m of an Ungraded Heritage site

Figure 13: DFFE Screening Tool extract for the for the archaeological and cultural heritage theme

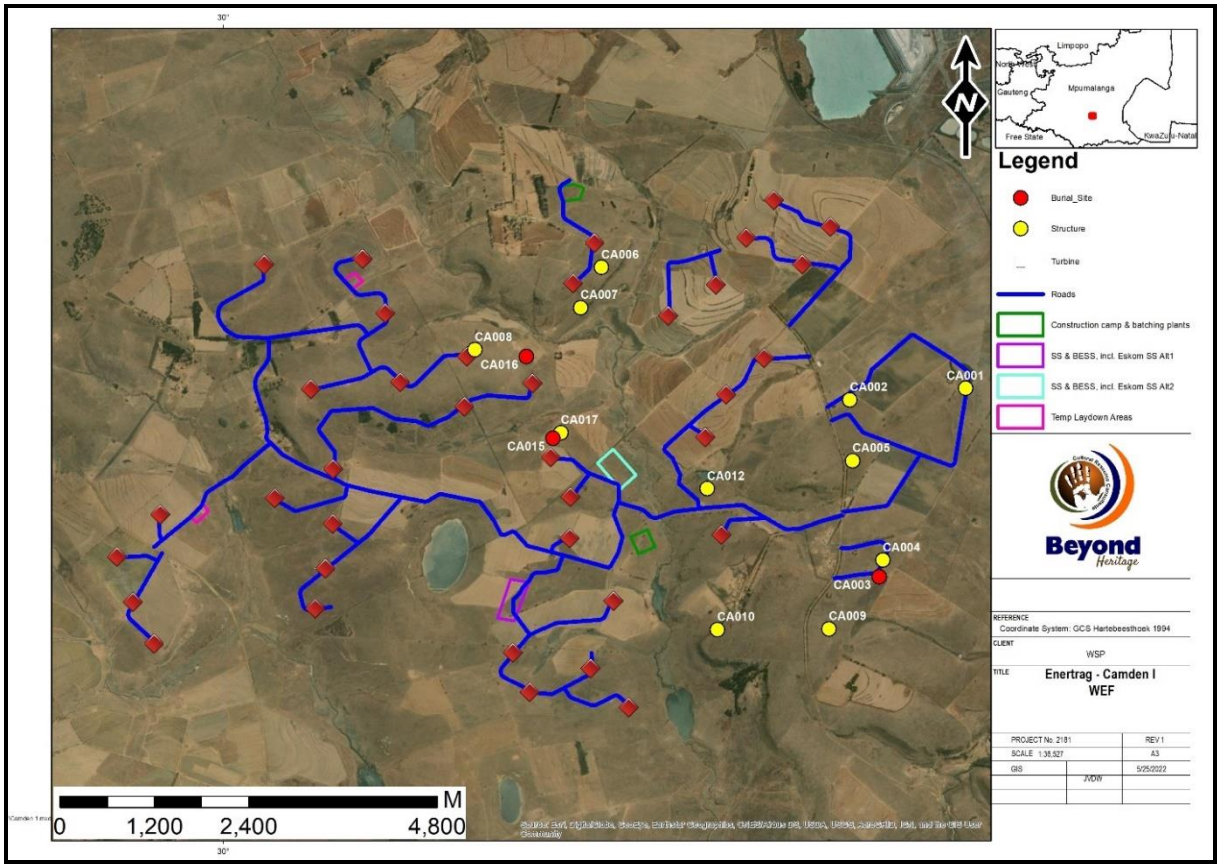


Figure 14: **Project layout in relation to recorded features (Beyond Heritage, 2022)**

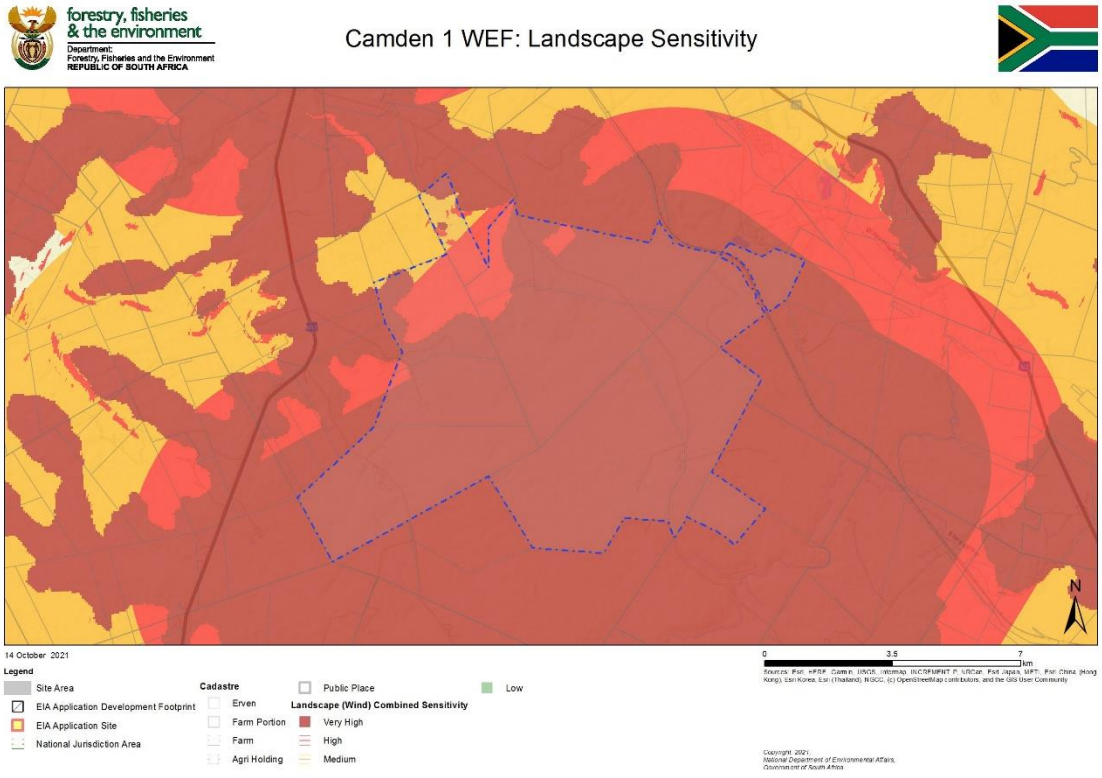


Figure 15: **DFFE Screening Tool relative landscape sensitivity**

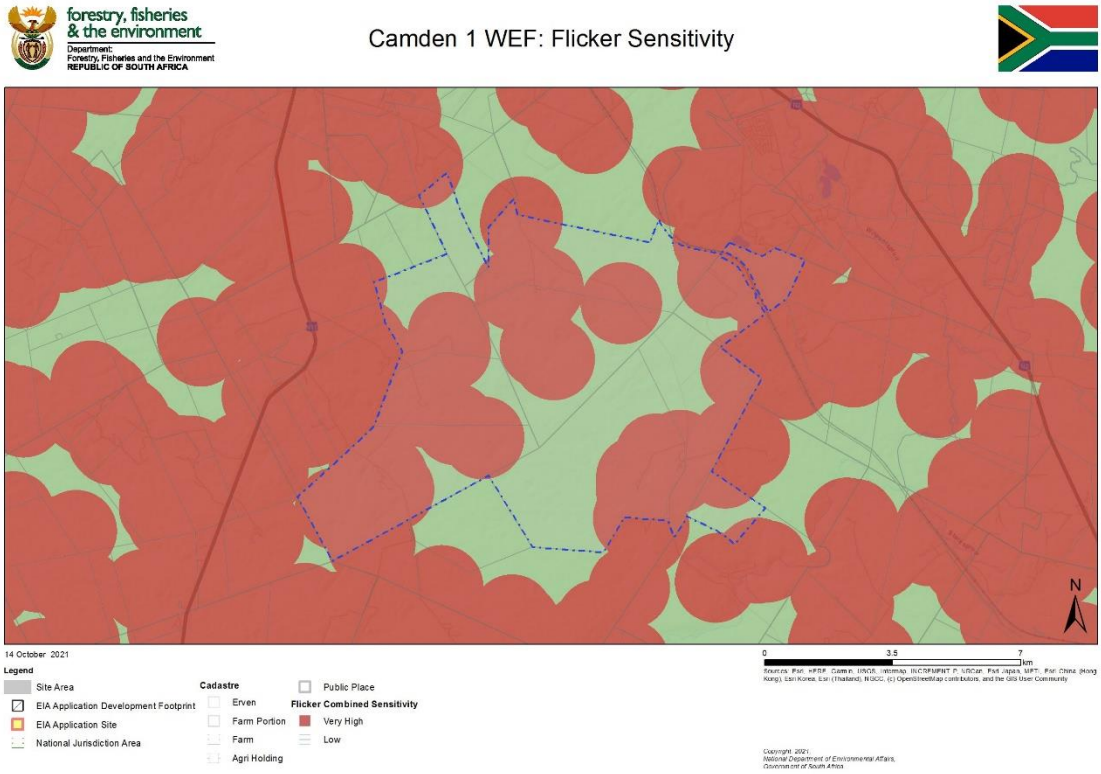


Figure 16: **DFFE Screening Tool relative flicker sensitivity**

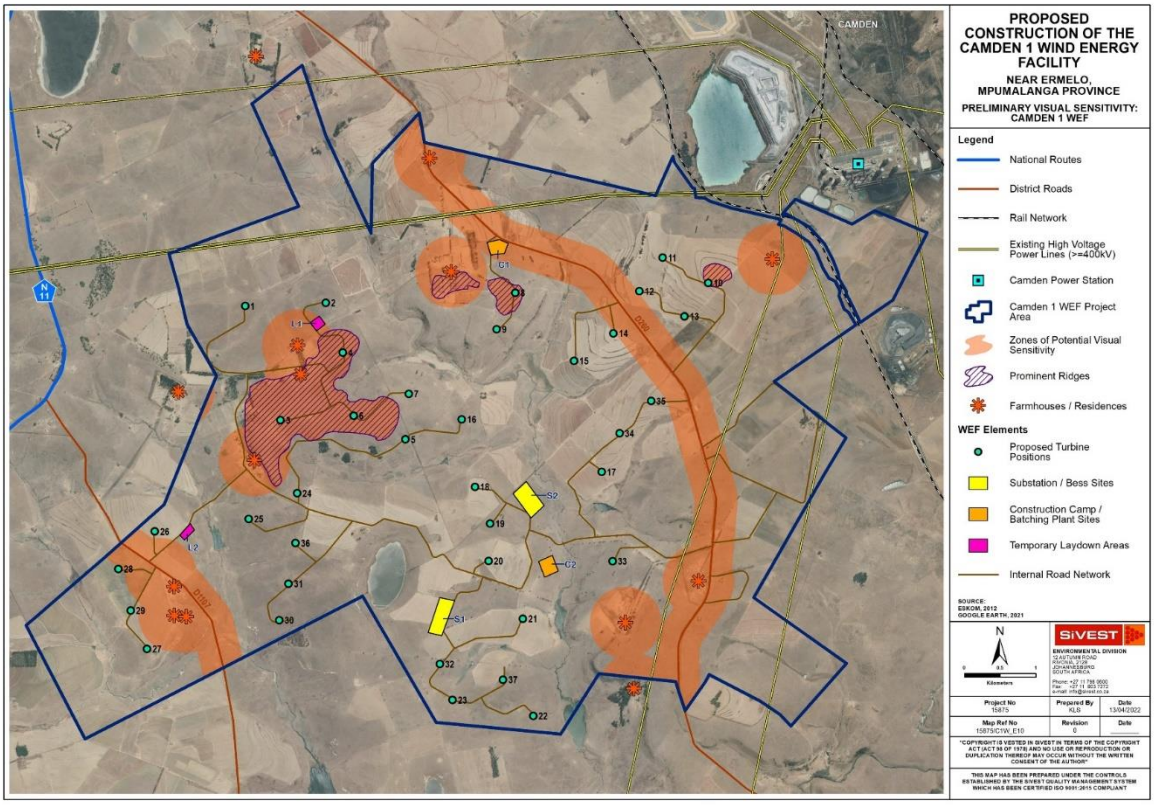


Figure 17: **Zones of potential visual sensitivity on the Camden I WEF Site**

7.3 Sub-section 3: Declaration

The proponent/applicant or holder of the EA affirms that he/she will abide and comply with the prescribed impact management outcomes and impact management actions as stipulated in part B: section 1 of the generic EMPr and have the understanding that the impact management outcomes and impact management actions are legally binding. The proponent/applicant or holder of the EA affirms that he/she will provide written notice to the CA 14 day prior to the date on which the activity will commence of commencement of construction to facilitate compliance inspections.

Signature Proponent/applicant/ holder of EA Date:

DocuSigned by:
Mercia Grimbeek
Director: Project Development
AAB2346FG01041E... 15/8/2022

7.4 Sub-section 4: amendments to site specific information (Part B; section 2)

Should the EA be transferred to a new holder, Part B: Section 2 must be completed by the new holder and submitted with the application for an amendment of the EA in terms of Regulations 29 or 31 of the EIA Regulations, whichever applies. The information submitted for an amendment to an environmental authorisation will be considered to be incomplete should a signed copy of Part B: Section 2 not be submitted. Once approved, Part B: Section 2 forms part of the EMPr for the development and the EMPr becomes legally binding to the new EA holder.

PART C

8 SITE SPECIFIC ENVIRONMENTAL ATTRIBUTES

If any specific environmental sensitivities/attributes are present on the site which require more specific impact management outcomes and actions, not included in the pre-approved generic EMPr template, to manage impacts, those impact management outcomes and impact management actions must be included in this section. These specific management controls must be referenced spatially, and must include impact management outcomes and impact management actions. The management controls including impact management outcomes and impact management actions must be presented in the format of the pre-approved generic EMPr template. This applies only to additional impact management outcomes and impact management actions that are necessary.

If Part C is applicable to the development as authorised in the EA, it is required to be submitted to the CA together with the BAR or EIAR, for consideration of, and decision on, the application for EA. The information in this section must be prepared by an EAP and the name and expertise of the EAP, including the curriculum vitae are to be included. Once approved, Part C forms part of the EMPr for the site and is legally binding.

This section will **not be required** should the site contain no specific environmental sensitivities or attributes.

There are sensitivities identified, in terms of terrestrial biodiversity, with regards to the on-site substation and BESS locations (both alternative sites). Approximately half of the Alternative 1 is footprint is located within a grassland (deemed High sensitivity). Alternative 2 (preferred) is also located entirely within grassland (deemed HIGH sensitivity) and next to a wetland (deemed VERY HIGH sensitivity).

In addition to the applicable mitigation measures included generic EMPr template, the following additional measures, with regards to vegetation clearing have been recommended (**Table 2**).

These mitigations were provided by the following Specialist, including and extract of the Specialists' details and expertise. The below is an extract of the Specialist's details and expertise. The Specialist's CV is contained in Appendix 1 of the Terrestrial Biodiversity Assessment Report (included in **Appendix H-4 of the EIR**).

- Terrestrial Biodiversity Specialist, David Hoare Consulting (Pty) Ltd.

Specialist	Qualification and accreditation
Dr David Hoare	• PhD Botany • Pr.Sci.Nat. 400221/05 (Ecological Science, Botanical Science)

- Aquatic Specialist, EnviroSci (Pty) Ltd.

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Table 2: Clearing of natural habitat for construction

Impact management outcome: Prevent the unnecessary destruction of, and fragmentation, of the vegetation community.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
- Prior to commencement of construction, compile a Rehabilitation Plan including monitoring specifications, to be included into the EMPr during final approval. Specific monitoring recommendations should be provided in the Plan, and the following are broad recommendations: o Rehabilitation Plan must be compiled by an approved ecologist prior to achieving COD and prior to the start of decommissioning. o All management actions associated with rehabilitation must be recorded after each management action has taken place. o All rehabilitated areas should be monitored to assess vegetation						

recovery. This should be for a minimum of three years after post-construction rehabilitation, but depends on the assessed trajectory of rehabilitation (whether it is following a favourable progression of vegetation establishment or not – this depends on the total vegetation cover present, and the proportion that consists of perennial growth of desired species). For each monitoring site, an equivalent comparative site in adjacent undisturbed vegetation should be similarly monitored. Monitoring data collection should include the following: o total vegetation cover and height, as well as for each major growth form; o species composition, including relative dominance; o soil stability and/or development of erosion features; o representative photographs should be taken at each monitoring period. o Monitoring of rehabilitated areas should take place at the frequency and for the duration determined in the rehabilitation plan, or until vegetation						

stability has been achieved. - Prior to commencement of construction, compile an Alien Plant Management Plan, to be included into the EMPr during final approval. Specific monitoring recommendations should be provided in the Plan, and the following are broad recommendations: o Monitor for early detection, to find species when they first appear on site. This should be as per the frequency specified in the management plan, and should be conducted by an experienced botanist. Early detection should provide a list of species and locations where they have been detected. Summer (vegetation maximum growth period) is usually the most appropriate time, but monitoring can be adaptable, depending on local conditions – this must be specified in the management plan. o Monitor for the effect of management actions on target species, which provides information on the effectiveness of management actions. Such monitoring depends on the management actions taking place. It should take place after each						

management action. o Monitor for the effect of management actions on non-target species and habitats.						

APPENDIX 1: METHOD STATEMENTS

To be prepared by the contractor prior to commencement of the activity. The method statements are **not required** to be submitted to the CA.